

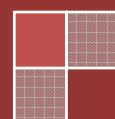
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Contact Address:
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Message from the Editor-in-Chief

Dear Colleagues,

We are very pleased to publish Special Issue for INTE-2017, ITICAM 2017 & IDEC 2017 conferences. This issue covers the papers presented at International Conference on New Horizons in Education, International Trends and Issues in Communication & Media Conference and International Distance Education Conference which were held in Freie Universität Berlin, Germany. These papers are about different research scopes and approaches of new developments and innovation in education, communication, media and technology.

Call for Papers

TOJET invites you article contributions. Submitted articles should be about all aspects of educational technology. The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJET. Manuscripts must be submitted in English. TOJET is guided by its editors, guest editors and advisory boards. If you are interested in contributing to TOJET as an author, guest editor or reviewer, please send your CV to tojet.editor@gmail.com.

November, 2017

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Factor of Values Influencing Mind Virtue of Muslim Malay Youth: Study in Klang Valley, Malaysia

JAWIAH Dakir

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
jawiah@ukm.edu.my*

SITI MASLIAH Mohd Nuri

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
sitimasliahmohdnuri@yahoo.com*

FARIZA Md Sham

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
farisham@ukm.edu.my*

Khairul Anwar MASTOR

*Pusat Citra Universiti & Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
kam@ukm.edu.my*

SITI RUGAYAH Hj Tibek

*Islamic Science University of Malaysia
sitirugayah@usim.edu.my*

A'DAWIYAH Ismail

*Fakulti Pengajian Islam & Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
ada@ukm.edu.my*

AL ADIB Samuri

*Fakulti Pengajian Islam,
Universiti Kebangsaan Malaysia
al_adib@ukm.edu.my*

JALIL M. H.

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
hilmi@ukm.edu.my*

NOOR AZIAH Mohd. Awal

*Institut Islam Hadhari & Fakulti Undang-undang,
Universiti Kebangsaan Malaysia
naha@ukm.edu.my*

ABSTRACT

This paper is part of research results on Mind Virtues of Muslim Malay Youth in the Klang Valley area of Malaysia. Discussion focuses on the influence of values in the formation of mind virtue (good sense) of Muslim Malay youth. It is conducted on 700 respondents aged between 18 to 40 years. The purpose of this research is to identify the main values which are important elements in forming their mind virtue (good sense), indirectly influencing youth personality. The method used is quantitative with a factor analysis approach. The tests used to measure the validity of factor analysis construct are Bartlett's of Sphericity, Kaiser-Meyer-Olkin (KMO) and Rotated factor matrix to show factor loading. The principal component method is used to determine *eigenvalue*. As a result four constructs are obtained: i) *Akhlaq Mahmudah* (Good Characteristics), ii) Relations between Humans, and between man and Allah iii) Ignorance/Misunderstanding Value and, iv) Passiveness Value. Therefore, any program or activity which aims to build youth personality should take heed of the factor of values held by youth as shown in this research.

Key words: Mind Virtue, characteristic, human

INTRODUCTION

Youth or young people play a big role in the future because they are the future generation of administrators, community and state leaders. According to Samsudin (2007) the "Young Generation" is a group in the population with potential to influence the future trend of society and state. Almost half of the world population today comprises of youth aged 25 years and below. According to the Kamus Dewan (1986), youth means young people as a whole, including both male and female.

Virtue is defined as thinking and doing what is right and avoiding what is wrong (Collins Dictionary). The word virtue comes from the Latin root word *virtus*, which means strength. It is a pattern of thought and behavior based on high moral standards. It thus begins in the heart and mind. Virtue is moral excellence. A virtue is a trait or quality deemed to be morally good and thus valued as a foundation of principle and good moral being (Wikipedia). In good sense, sense means mind, effort and endeavor. Good sense includes reason, intellect and wisdom or sound judgment. Mind virtue or good sense also connotes a sound mind (Kamus Dewan 1986). Mind virtue (good sense) complements the creation of man. In the view of Imam Al-Ghazali (1995), man is comprised of five integrated elements namely *roh*, *qalb*, *nafs*, *aql* and *jasad*. All five elements in man play an important role in forming behavior and generating human intellect.

In explaining the role of mind virtue (good sense), al-Qaradawi stated that al-Quran consistently associates it with knowledge. It is placed on a level suiting its function and position in human life. Al-Quran controls and guides humans in life, together with intelligence and knowledge. Abdul Muis (2002) cited al-Asyari's opinion that mind virtue means thinking with wide implications, that is, to think, understand, comprehend and observe to prevent despicable deeds or words. Reason as expressed by Sidi Ghazaliba and cited by Aminudin Mansor (2012) is stated as radiating from *akhlaq*. *Akhlaq* is the plural form of *khulq*, which means behavior, habit, temperament, form of personality, and habitual wants. Islamically, the term *akhlaq* means personal attributes expressed in human behavior towards God and other humans, towards the self and other creatures in compliance with the commands and prohibitions as well as guidance of al-Quran and Hadith. Several studies on Muslim Malay mind virtue (good sense) have been conducted. Research on it is important as it has a big impact in developing the race and state. Among them are by Abdul Muis (2002) on "*Mendidik Akal Untuk Berfikir Islami*", Hashim Musa (2008) on the 26 cores of Malay sincerity, Hashim Musa et al (2008) on "*Hati Budi Melayu: Kajian Keperibadian Sosial Melayu ke Arah Penjanaan Melayu Gemilang*" and Bronfenbrenner (1989) in his "*Ecological System Theory*" which indirectly associates youth with being influenced by their environment while at the same time playing a role in shaping it. In addition, other researchers who have directly researched on youth are Mohd Taib Osman (1988), Bronfenbrenner (1989), Bushman & Heusman (2001), Veenhoven (2003), Siti Raba'ah Hamzah et al(2013), Arieff dan Wardah (2006) and many more. The famous philosopher writer, HAMKA in his works on youth and the role of mind virtue, in *Falsafah Hidup* (2009), *Lembaga Budi* (2008) and *Tasawuf Moden* (2007), should also not be underestimated.

It may be deduced that all the above-mentioned research and the writing below emphasize on the important role of youth's mind virtue (good sense), challenges in educating youth, role of youth in the family, society and state, as well as the importance of overcoming the problem of declining mind virtue in youth today, so that they may discharge their duties and responsibilities as a competent future generation. This working paper reports new research not covered by previous researchers and writers. It is a quantitative research about the value of mind virtue (good sense). It differs from previous studies in that research results are analyzed using factor analysis to determine the value sub-dimensions of Muslim Malay youth's mind virtue. It presents new research findings on the values of Malay Muslim youth's mind virtue and the methodology of obtaining research results is explained in the discussion on research methodology and results.

THE STUDY

The method used is quantitative with a factor analysis approach. Validity of questionnaire construct on mind virtue or good sense is based on factor analysis done on all questionnaire items. In order to measure the validity of factor analysis construct, the tests Bartlett's of Sphericity, Kaiser-Meyer-Olkin (KMO) and Rotated factor matrix to show factor loading were used (Hair et al. 2010). The Bartlett's of Sphericity test for this research is significant ($p=0.000$) and KMO test for sample sufficiency is 0.917, that is, exceeding the value 0.6. Further, eigenvalue is determined using principal component method. *Eigenvalue* for the factor must be bigger than or equal to zero but not exceeding the variance total. The example for research eigenvalue shows 6 factors, that is, the first eigenvalue is 9.319 and the sixth eigenvalue is 1.048, and the total does not exceed the variance total of 31. Rotated factor matrix shows a factor loading which explains the correlation for each variable and factors for varimax rotation. Hair et al. (2010)

suggested that the value of factor loading must exceed 0.30, and the researchers agree to fix it at 0.40 and above, while factor loading with value less than 0.40 is excluded. The results of factor analysis in this research finds the element of value is divided into four components: i) *Akhlaq Mahmudah* (good characteristics) ii) Relations between Humans and between Man and Allah iii) Ignorance/ Misunderstanding and iv) Passiveness Value.

FINDINGS

Research is conducted on 700 respondents consisting of Muslim Malay youth with various backgrounds. 383 respondents are male (54.7%), and 317 are female respondents (45.3%). The majority of respondents (116 persons) are aged 21 years. 484 respondents or 69.1% are single, 204 respondents or 29.1% are married and 12 respondents or 1.7% are divorced. In terms of occupation, the majority of respondents work for the government sector, that is 217 persons (31.0%), 201 persons (28.7%) work in the private sector, 203 persons (29.0%) are students and the rest did not state their occupation. 188 respondents (26.3%) have a monthly income between RM1,001 and RM 2,000, 154 respondents (21.6%) with income of RM2,001 to RM3,000, 24 respondents (3.2%) get RM 1000 and below, and 106 (14.4%) earn between RM 3001 to RM 5000 monthly, while income for the rest respondents is not stated.

In this working paper, it is explained that the value dimensions in the mind virtue structure of Muslim Malay youth is in quantitative form whereby the items are analyzed using factor analysis. Through factor analysis, research results find that mind virtue of Muslim Malay youth is formed into four value dimensions. Results also find that the loading factor value of each item studied exceeds 0.30 consistent with the suggestion by Hair et al. (2010). In addition, results analysis for mean, standard deviation and alpha cronbach value for each item are high. The results of the four value dimensions are as follows:

Table 1. Value of *Akhlaq Mahmudah* (Good Characteristics)

No.	Item	Matter	Factor loading	Mean	Std. Deviation
D4		Consensus in good matters brings blessings.	.727	4.66	.504
D5		<i>Zikr</i> (remembrance of Allah) brings me peace of mind.	.687	4.72	.481
D6		I feel happy when I am able to fulfill my responsibilities properly.	.652	4.65	.511
D15		Striving continuously will ensure success.	.639	4.55	.595
D12		I love knowledge and knowledgeable persons.	.635	4.47	.617
D3		I would feel sinful if involved in bribery/corruption.	.635	4.65	.620
D2		I admire courteous people.	.620	4.54	.561
D13		Loyalty to parents in good matters indicates loyalty to Allah.	.617	4.64	.569
D9		I always supplicate to achieve success.	.597	4.61	.565
D16		To seek <i>halal</i> sustenance is a noble cause.	.596	4.63	.565
D8		I am willing and ready to sacrifice in upholding the truth.	.566	4.41	.623
D20		Honesty and Intelligence should go together	.533	4.40	.619
Alpha Cronbach Value					.886

Results of factor analysis shows factor loading which explains correlation for variables and factors of varimax rotation through rotated factor matrix. Rotated factor matrix has classified the items above to become a very strong component with alpha cronbach value of 0.886. The highest factor loading value are for items, D4 and D5, that is, 0.727 (D4) and 0.687 (D5) respectively, and the item with the lowest factor loading in the component are for items

D8 and D20, that is, 0.566 (D8) and 0.533 (D20). However, the factor loading value for all items in the component is high. Based on the items found in the component, it is named *Akhlaq Mahmudah* value (good characteristics).

Table 2. Value of Relations between humans and between man and Allah

No.	Item	Matters	Factor loading	Mean	Std. Deviation
	D37	To execute Allah's commandments indicates gratitude for Allah's favours.	.743	4.61	.566
	D31	I believe that fostering relations strengthens the family institution.	.724	4.63	.569
	D29	A patient person is honourable and esteemed.	.711	4.52	.641
	D35	Volunteerism brings blessings.	.707	4.36	.622
	D36	I feel guilty if I do not thank the person who helps me.	.701	4.43	.676
	D40	<i>Tawakkul</i> (Reliance) on Allah soothes my heart.	.691	4.57	.653
	D38	<i>Taqwa</i> (God-fearing Piety) is the effect of righteous practice and sincere intentions.	.676	4.52	.622
	D32	<i>Silaturahmi</i> (Relations) is important to foster good brotherhood between humans.	.669	4.63	.580
	D28	I am grateful for the sustenance I get.	.639	4.42	.736
	D30	I believe that by charity I will get more than what I give.	.581	4.47	.690
Alpha Cronbach Value					.901

In addition, results analysis for the second component shows a high reading for variables with alpha cronbach value at 0.901. This component has the highest alpha cronbach value compared to other components. For factor loading, the highest value are for items D37 and D31, that is, 0.743 (D37) and 0.724 (D31), while the items with the lowest factor loading in this component are the items D28 and D39, that is, 0.639 (D28) and 0.581 (D30). The factor loading value for all items in this component are high. Based on the items found in this component, it is named Value of Relations between humans and between man and Allah.

Table 3. Ignorance/Misunderstanding Value

N o.	Item	Matter	Factor loading	Mean	Std. Deviation
	D25	It is alright to delay prayers so as to finish work first.	.726	4.20	1.009
	D23	Even though I do not pray, it does not mean that I do not fear Allah because it is my personal affair with Allah.	.706	3.67	1.413
	D24	It is not wrong to have sexual relations to prove love.	.675	4.56	.917
	D33	Even though not properly covered, one must have a good heart.	.672	3.23	1.312
	D39	It is not wrong to steal if the purpose is to do good.	.559	3.87	1.252
Alpha Cronbach Value					.752

The process of factor analysis also isolates negative items to form other components and not mix with positive items. The third component is categorized as Ignorance/Misunderstanding Value. It shows a high alpha cronbach value at 0.752. The highest factor loading value is for items D25 and D23 at 0.726 (D25) and 0.706 (D23) while the lowest factor loading value for this component are for items D33 and D39, at 0.672 (D33) and 0.559 (D39). However, the factor loading value for all items in this component is high, exceeding the value preset at 0.30.

Table 4. Passiveness Value

No.	Item	Matter	Factor loading	Mean	Std. Deviation
	D19	I use a card credit to buy a thing or service even though there is no budget for it at the time.	.731	3.88	1.312
	D10	I don't think about sin or reward of doing something.	.683	3.69	1.397
	D17	I don't care if my friends use coarse and vulgar words towards me.	.674	3.19	1.293
	D34	Health is a demand of human culture and lifestyle, not an Islamic demand.	.458	3.30	1.360
Alpha Cronbach Value					.725

In addition, factor analysis also shows results of negative items which are more inclined to Passiveness Value. The alpha cronbach value for this component is 0.725, showing quite a high value compared to the alpha cronbach value for other components. The highest factor loading value is for items D19 and D10, that is, 0.731 (D19) and 0.683 (D10), while items with the lowest factor loading value in this component are D17 and D34, that is, 0.674 (D319) and 0.458 (D34).

CONCLUSION

Research results and factor analysis show positive and negative value dimensions of respondents. The positive values are *Akhlaq Mahmudah* (good characteristics) Value, and the Value of Relations between humans and between man and Allah. The negative values are Ignorance/ Misunderstanding and Passiveness Values. This means that they have positive values which need to be strengthened and preserved. In addition, they also require purification of mind virtue (good sense) due to the negative values. However it cannot be denied that the ‘Young Generation’ referred to as youth, is a very important group in developing and determining the future of religion, society, race and country. Therefore, youth should realize that they carry an extremely heavy responsibility on their shoulders. They need to develop a great soul, good personality, excellent mind virtue (good sense) and courage to determine the future for themselves, their families, society and country.

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Factors Analysis of Technology Leadership in Thailand Royal Awarded School

Dawruwan THAWINKARN

Faculty of Education,

Khon Kaen University , Thailand

dawtha@kku.ac.th

ABSTRACT

Technology leadership is a key element to be successful in using technology in education. The purpose of this research were to develop the school administrators' technology leadership scale using an exploratory factor analysis and confirmatory factor analysis. The samples were 380 administrators (principals, vice principals, and head of subjects) in Thailand royal awarded school. The research instrument was the technology leadership with 5 scale questionnaires. Cronbach's alpha internal consistency was estimated for the reliability of scale. The exploratory factors analysis was examined to determine the number of factors and indicators. The confirmatory factor analysis was performed to determine the construct validity by using Mplus 6.11. The major finding were as follows : 1) internal consistency scale was .87, 2) the exploratory factor analysis indicated that the technology leadership was composed of 6 factors : technological vision, technological support, promoting technology in teaching, administrative management technology, assessment and evaluation technology, and ethics technology and 3) the confirmatory factor analysis found that the model fit the structure from the exploratory factor analysis. The chi-square goodness of fit test was 3.505; df = 5; p-value = .752; GFI=.987; AGFI=.998; RMSEA=.000; RMR=.002

Keywords: Technology Leadership, School Administrator, Thailand Royal Awarded School

INTRODUCTION

The ministry of education in Thailand emphasizes the importance of the computer and technology. While also taking into account of the benefits and potential of information technology development and application for students to learn and develop their skills in an advanced level. Including the way to think and to analyze the effects that may occur from the use of the technology in an inappropriate ways; this is based on the principles of moral and sufficient economic. This is consistent with the government policy, with the development of information technology policy, or IT 2010, and the National Education Act in 1999 (issue 2) and amendment (no. 2) in 2002 that encourage the use of computers and the internet in teaching and administration to maximize the benefits of information and communication technology which is used in education. Technology is usually viewed as a class of technology that must be matched well with the specific content areas and learning targets. Meanwhile, technology leadership is often associated as the primarily role of school administrators. Education technology leadership also emerges from other sources; for example, teachers, technology coordinators, parents, students, and community members. Collaborative leadership theory provides a theoretical basis for the foundation that education technology leadership may be effectively distributed across an organization. Education technology catalyzes many changes in the content, methods, and overall quality of the teaching and learning process, triggering changes away from lecture driven instruction and toward constructivist, exploring oriented classrooms.

Technology leadership of the executive management behavior of leaders who face the challenge of changing challenges of technology. While often focuses on the leadership skills of the school administrators, the study of education technology leadership also considers about sources of leadership from other education stakeholders, including teachers, technology coordinators, parents, students, and community members as well. The attributes of leader in the administrative process to adjust the behavior of the leadership and organizational behavior modification in accordance with the change, which caused the corporation of colleagues. The work is achieved by placing. Flanagan and Jacobson (2003) have provided significant technology leadership of school administrators that the behavior of the leaders with a pupil engagement is a steadfast mission to organize the learning experience to students. The use of appropriate technology. A vision for the use of technology for education. A professional development effectiveness professional development to promote the professional development consistently focus

on teaching and learning. Including the use of technology in various occasions. All students have access equally. Synthesis technology leadership component of school administrators, the context of education of education of the Thailand Royal Awarded school, given by the theories and research related Yee (2000), Schiller (2003), Haslam (2006), Kozloski (2006), Redish and Chan (2006), Nikom Nakkai (2006), Chawalit Kerttip (2009) has 6 factors of technology leadership are technological vision, technological support, promoting technology in teaching, administrative management technology, assessment and evaluation technology, and ethics technology.

LITERATURE REVIEW

I. Definition of Technology Leadership

The definition of technology leadership that is that a capable of leading in management, and using technology to cut expenses of investment products. This capability is called the product cost competence, it is emerging as a new product which is in demand all the time (marketable products), which is capable in managing this so-called innovative competence. Flanagan, & Jacobson (2003) provided significant technological leadership of school administrators that is the behavior of a leader with a mission to student (pupil engagement) is a steadfast mission to organize the learning experience for students by the use of appropriate technology. A vision for the use of technology for an education, an effective professional development to promote continuous professional development is consistent focus on teaching and learning, including the use of technology in various occasions. All students have access equally.

In summary, from the viewpoint of all the above, a summary definition “technology leadership of school administrators” refers to behavior or characteristics of school administrators that expresses the vision of technological system planning director of media technology to achieve the vision. Promote a culture of accountability and policy support to developing innovative technology continuously. Supporting teacher for use of technology in teaching, and use technology in administration, use technology to measure and evaluate and ethical use of technology.

II. Global Technology Leadership

While leadership as a scientific construct emerged in the scholarly literature as early as the 1930s (House & Aditya, 1997) and has received extensive attention since then, the evolution of “the 21st century technologist”. Bertoline (2011) presents a need for a new type of leadership model and a new method for education leaders. Global technology leadership is emerging as a scholarly discipline that seeks to integrate specific, contextual knowledge related to high-technology industries and integrate it with the ability to operate and lead in not only a multinational, but the synthesized global environment far more common and growing in technology fields (Daugherty et al., in press). This discipline is relatively new as an area of academic research, however, and there is great need among scholars to begin the task of modeling the global technology leader and the nature of implementing global technology leadership into educational and organizational settings. As such, the research team sought out industries and academic programs throughout the world providing education and employment in this innovative area. Using ethnographic research methods (Lindlof & Taylor, 2002), researchers gathered data by observation and interview with the goal of analyzing this data and developing a synthesized model of the nature and future of global technology leadership as an innovative educational and industrial managing construct.

Technology leadership is newly evolving as a scholarly discipline that synthesizes historic research in multiple areas of leadership with the complexity and contextual factors unique to the technology organization. Bozeman and Spuck (1994) suggested that educational technology leaders should be able to use technology in solving real problems in their schools. Before starting full technology implementation, principals should be aware of the challenges and barriers inherent in almost technology programs. These challenges can easily undermine the confidence of even the most professional leaders (Lashway, 2003). According to Valdez (2004), leadership of technology includes a combination of many leadership qualities and the ability to implement change, resources, professional development, emerging techniques, equipment and software. As such, the present study examines how technology leaderships, learning abilities as well as other individual characteristics and perceptions could affect school leaders’ behavioral intentions.

Information technology development and innovation, computers, the Internet, and other information technologies are becoming important learning tools in students' everyday lives. Principals play various roles such as a change agent, lifelong learner, main supporter, and resource provider in relation to ICT implementation in schools (Han, 2002). Therefore, principals need to understand the capacities of the new technologies to have a personal proficiency in using technologies, and be able to promote a school culture which encourages exploration of new techniques in teaching, learning and management (Schiller, 2003). The studies showed that when administrators act as technology leaders, the teachers will integrate and use technology more successfully (MacNeil & Delafield, 2007). The International Society for Technology in Education published Technology Standards for School Administrators, including the following categories:

(1) Leadership and Vision; Included in this standard is that a technology leader has the ability to inspire a shared vision among stakeholders and foster changes that maximize the use of digital resources to support instruction, learning, and student performance. Finally, the standard of visionary leadership details how effective school technology leaders advocate for policies, programs, and funding to support the vision and planning efforts related to technology.

(2) Digital-Age Learning Culture; This standard describes how school administrators must ensure that instruction improves digital-age learning and that the school and classrooms are sufficiently equipped with digital technologies that support individual student needs. Additionally, school technology leaders should "be model and promote the frequent and effective use of technology for learning"

(3) Excellence In Professional Practice; this standard focuses on the leaders' role to empower educators to enhance students learning through technology. Standard three describes how school technology leaders must ensure time and resources are devoted to technology-focused professional development of teachers. Technology leaders must also participate in technology-related professional development themselves.

(4) Systemic Improvement; Central to this standard is data-driven decision-making that includes collaborating to collect data, analyses data, interpret findings, and share results around staff and student performance. The fourth standard also describes how school technology leaders must recruit and retain technology-savvy teachers and staff.

(5) Digital Citizenship; This standard focuses on the school leaders' responsibility for ensuring equitable access to digital tools as well as promoting, modeling, and establishing "policies for safe, legal, and ethical use of digital information and technology".

Lastly, besides visions and planning, managing technology resources has become a critical role in effective technology leadership. Principals need to manage personnel, time, support, and funding. Effective principals observe any of technologies, including teachers' technologies use, and technology infrastructure to ensure the successful technology integration.

III. The School Administrator as a Technology

In the majority of literature reviewed, the school technology leaders is assumed to be the role model of school administrators including principles or superintendents. Both Superintendents and Principals were effective education technology leaders. These effective leaders often shared common tendencies. A supportive administrator took staffs inputs into consideration when developing school schedules or organizing school activities; engendered a high level of communication, encouragement and support that was felt by individuals; devoted resources needed to replicate successful programs; developed and supported partnerships between school and universities and corporations to stimulate the use of technology; empowered their staff; was flexible and insured that technology was accessible to teachers and students; had a commitment to professional development; respected every student as individual learners. In contrast, it is found that if it is not enough administrative support, it could limit professional growth and structure.

A survey of elementary school principals revealed that all the Principals agreed that technology was an important aspect of learning, the schools that had the highest technology-use rating had shared one characteristic: strong and enthusiastic principal technology leadership. Principals who exhibited education technology leadership were instrumental in modeling the use of technology in classrooms. They understood how it could support the best practices in instruction and assessment, and they provided teachers with guidance for its use. Principals also had to participated in professional development activities that related to education technology and provided opportunities for teachers to learn how to use those resources.

When administrators supported teachers in using technology with development staffs and on-going dialogue about technology integration in the context of teaching and learning, their teachers exhibited maintained technology integration in the curriculum. Wilsmore and Betz (2000) stated that “technology will only be successfully implemented in schools if the principal actively supports it, learns as well, provides adequate professional development and supports his/her staffs in the process of change”.

While literature was found that identifies the school principal as a key factor in bringing about successful change in schools (Fullan, 2003), Schiller (2003) claimed there is very little research on the relationship between education leadership and technology. Additional research in the area of leadership and the implementation of instructional technology was found to be needed (Wilsmore & Betz, 2000; Yee, 2000).

RESEARCH METHOD

I. Research Objective

This study is aimed to develop the technology leadership scale using an exploratory factor analysis and a confirmatory factor analysis.

II. Samples

The population comprised 7,426 administrators (principals, vice principals, and head of subjects) in the royal awarded school. The samples group size was 380 principal, vice principal, and head of subject based on the table of Krejcie and Morgan and selected by the stratified random sampling method.

III. Instrument

The instrument used in this study was the questionnaire for the administrators (principals, vice principals, and head of subjects) in the royal awarded school which was divided into 2 sections as follows:

Section 1 – This is the checklist for general information of the respondents. There are 5 questions for age, gender, position, education level, and work experience.

Section 2 – This included 28 five-scale rating question for the technology leadership questionnaire was used to measure school administrators technology leadership on 6 elements: technological vision (TV), technological support (TS), promoting technology in teaching (PTT), administrative management technology (AMT), assessment and evaluation technology (AET), and ethics technology (ET).

IV. Data Collection and Analysis

The researchers first submitted an official letter asking for permission to collect data and carried out the data collection in the royal awarded schools. The researchers had collected the completed questionnaires in the first time total 250 forms and after that collected again and again later until got 330 forms back (100%). The researchers analyzed the questionnaire data by using computer software programs as follows: (i) The general information of the respondents was analyzed by means of descriptive statistics to find frequencies and percentages, (ii) The exploratory factors analysis was examined to determine the number of factors and indicators, and (iii) The confirmatory factor analysis was performed to determine the construct validity by using Mplus 6.11.

RESULTS AND DISCUSSION

I. Analysis of school administrator technology leadership in Thailand Royal Awarded school that overall average in the “high” level, which can show the mean, standard deviation, minimum score, and maximum score in table 1

Table 1 : Descriptive data analysis of school administrators technology leadership

Technology leadership	mean	S.D.	Minimum	Maximum
Technological vision	4.441	.444	1.000	5.000
Technological support	4.423	.386	1.000	5.000
Promoting technology in teaching	4.511	.271	2.000	5.000
Administrative management technology	4.464	.430	1.000	5.000
Assessment and evaluation technology	4.407	.368	1.000	5.000
Ethics technology	4.382	.419	1.000	5.000

II. Exploratory factor analysis of technology leadership

The exploratory factor analysis of technology leadership is analyzed by the Kaiser-Meyer-Olkin index measures of sampling adequacy : KMO is .810, indicating that they are qualified to be analyzed at a good level, and Barlett’s test of sphericity test results showed that the variables were correlated statistically significant ($p < .01$); so indicates that the variables can be analyzed. The principal component analysis found communality value of each variable used in the analysis of technology leadership have 21 factors (ranged .551 - .712). The results of the rotation element angle (oblique rotation) with Promax method composition of 6 elements, each element has a eigenvalue than 1. Percentage of of 72.395, which results factor technology leadership by Malcolm questions in table 2.

Table 2 : Factor loading of technology leadership

Item	Factors of technology leadership	Factor loading
Factor 1 Technological Vision (TV) Eigenvalue = 14.112, % of variance = 16.506		
1	Focus on the use of technology in education	.711
2	Technology has contributed significantly to the development and enhance the quality of education	.709
3	Policy and planning technology rationality	.678
4	Learning and development of information technology in management	.559
Factor 2 Technological Support (TS) Eigenvalue = 14.001, % of variance = 15.007		
5	Procurement and preparation of technology for learning	.704
6	Promoting the use of technology in education development Budget planning for	.667
7	adequate management technology	.609
Factor 3 Promoting Technology in Teaching (PTT) Eigenvalue = 13.404, % of variance = 14.241		
8	Further support for teachers in using technology in teaching	.712
9	Deciding which technology is appropriate for teaching	.677
10	Encourage teachers to develop information technology skills continuously	.605
11	Manage the learning conducive to use of technology	.553
Factor 4 Administrative Management Technology (AMT) Eigenvalue = 10.109, % of variance = 10.453		
12	The technology involved in the administration	.709
13	Development of information technology to management regularly	.694
14	Use of media and technology in the teacher development	.605
Factor 5 Assessment and Evaluation Technology (AET) Eigenvalue = 9.445, % of variance = 9.746		
15	Use technology as a tool in assessing the performance of teachers	.698
16	Evaluation of the use of technology in the teaching and learning of teachers	.669
17	Use technology to evaluate student achievement, and to enhance the quality	.613
18	Use of technology as a tool to develop the school quality assurance system	.588
Factor 6 Ethics Technology (ET) Eigenvalue = 7.172, % of variance = 6.442		
19	An example of using technology in a creativity	.679
20	Used with caution, as necessary	.654
21	Responsibility for the consequences arising from the use of technology	.551

III. Results of confirmatory factor analysis of technology leadership

The relationship between observed variables using Pearson's correlation coefficient, it was found that: the variable that indicates the technology leadership all have significant statistics ($p < .01$). The correlation coefficient were .604 - .788 and the Bartlett's test sphericity, which is the test of the hypothesis that correlated between the correlation matrix and the identity matrix equal to 4,381.564 ($P < .000$). The correlation between matrix shows that the variables differ significant from the identity matrix in accordance with statistical analysis, the value of sampling adequacy measures : KMO is .786. Test results show the two sets of variables. In this data set are related to levels sufficient and appropriate to analyze the factors. The Details are shown in table 3 and the results of confirmatory factor analysis model to measure technology leadership in table 4.

Table 3 : Mean, Standard Deviation, and Pearson correlation product moment of technology leadership factors

Variables	TV	TS	PTT	AMT	AET	ET
TV	1.000					
TS	.767**	1.000				
PTT	.745**	.765**	1.000			
AMT	.755**	.689**	.746**	1.000		
AET	.788**	.645**	.689**	.782**	1.000	
ET	.761**	.763**	.604**	.639**	.674**	1.000
Mean	4.441	4.423	4.511	4.464	4.407	4.382
S.D.	.472	.386	.271	.430	.368	.419
Bartlett's test of sphericity = 4,381.564 df = 19 p = .000 KMO = .784						

Table 4 : Results of confirmatory factor analysis model of technology leadership of the royal awarded school administrators

Variables	Factor Loading		T	R ²	The coefficient factor scores
	b(SE)	B			
Technological vision	.580(.027)	.844	21.334***	.771	.226
Technological support	.497(.023)	.863	21.686***	.762	.356
Promoting technology in teaching	.566(.027)	.881	20.432***	.642	.481
Administrative management technology	.671(.030)	.790	18.116***	.688	.189
Assessment and evaluation technology	.557(.028)	.762	21.665***	.793	.167
Ethics technology	.489(.029)	.740	17.801***	.619	.206
Chi-square = 3.505 df = 5 p = .752					
GFI = .987 AGFI = .998 RMR = .002					

*** p<.001

From table 4, considering the weight of each component in the standard observed variables in the model, measurement technology leadership found : All factors are positive weights ranging from .740 to .833 and all with statistical significance level .001. The variable weight from high to low of loading score are promoting technology in teaching, technological support, technological vision, administrative management technology, assessment and evaluation technology, and ethics technology respectively. The 6 variables are Indicates of technology leadership significance statistical. Indicators of technology leadership shown in the equation :

$$\text{Technological Leadership} = .226^{***}(\text{TV}) + .356^{***}(\text{TS}) + .481^{***}(\text{PTT}) + .189^{***}(\text{AMT}) + .167^{***}(\text{AET}) + .206^{***}(\text{ET})$$

Shows the validity of the model measuring technology leadership in Figure 1

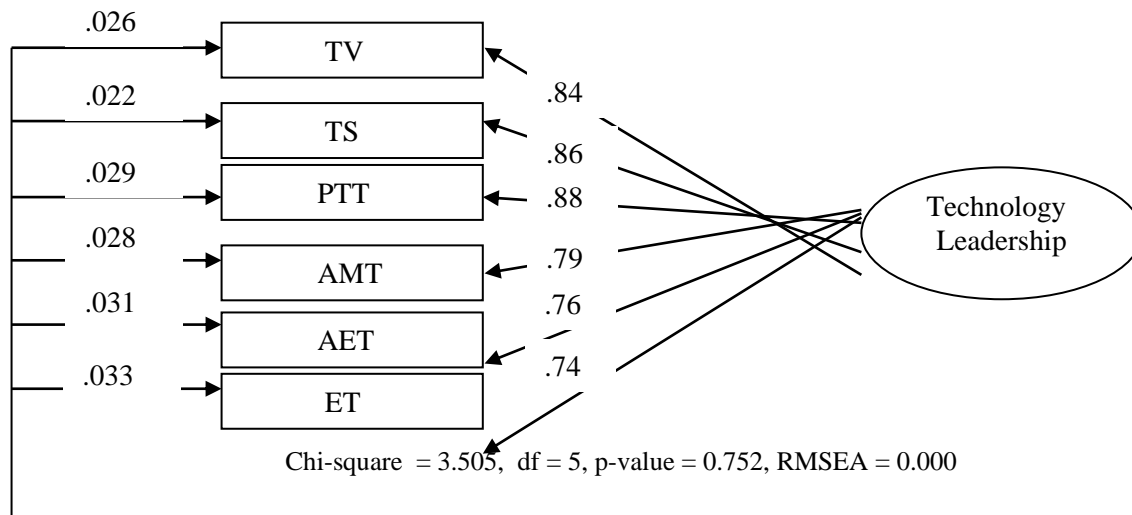


Figure 1 : The Validity of The Model Measurement Technology Leadership

CONCLUSION

The administrator in the 21st century need to catch up with present technologies. They need to improve their skill in using technology due to technology plays important role in education. To be technological leaders of the administrators or principles or teachers in schools would be more effective in both studying inside and outside classrooms, it affects to a school's permanent excellence. Piceiano (2005) has indicated that technology plays an important role that may affect to education in school. Also, technological staffs have to perform many duties in school too, especially in 1) teaching 2) technique 3) analysis 4) leadership. The result from Technological Leadership analysis in this study, it is found in 6 elements, that is; Technological vision, Technological support, Promoting technology in teaching, Administrative management technology, Assessment and evaluation technology, and Ethics technology. Which conforms with the research study of Bunjob Boonjan (2011), who studied about elements of technological leadership of the administrators or principles, and it was found that there are elements of technological leadership, that is 1) using technology in teaching 2) using technology in administration 3) using technology in evaluation 4) moral in using technology, and also it conforms to the regulation of teacher's council in the issue of professional moralities 2013 in 5 aspects; 1) self morality 2) professional morality 3) customer morality 4) colleague morality 5) social morality. Moreover, it conforms to American Institute for Research: AIR (2009) which identified National Educational Technology Standard for Administrators: NETS-A about Digital-Age Learning Cultural, which covered that the administrators must have knowledge and confidence in using technology in education development to be a role model and support using technology in education continuously and effectively, to provide vary sources of technologies which suit for each student's desires, to apply technology in teaching effectively and conform well with the curriculums. Besides, it encourages the communities to join in education by using innovation. As well as Kozloski (2006) who studied element of technological leadership of the administrators of principles in many schools in 45 states of the United State of America and the result of the study, it is found that each state has identified technological standard which affect the movement in present. It is; there is an encouragement to encourage every of the administrators in schools to have technological leadership of the administrator follow the identified standard responsibly. Meanwhile, business section now need the graduates who has proficiency in technology to work in their companies. Those expectation and desires would be successful if the administrators emphasize on the importance of using technology and encourage students to use technology effectively in schools and in communities. Those are important to education and economic in 21st century. Element of technological leadership of the administrators includes 6 aspects; 1) Leadership and Vision 2) Digital-Age Learning 3) Excellence In Professional Practice 4) support management and performance 5) evaluation 6) social, laws, and morality issue.

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Fluorescence of Edible Oils in Teaching the Course Forensic Science

Michaela MIKULÍČOVÁ

*Faculty of Applied Informatics
Tomas Bata University in Zlin
Czech Republic
mikulicova@fai.utb.cz*

Vojtěch KŘESÁLEK

*Faculty of Applied Informatics
Tomas Bata University in Zlin
Czech Republic
kresalek@fai.utb.cz*

ABSTRACT

The aim is to acquaint students with the principles of fluorescence spectroscopy. Edible oils are used as test substances for laboratory task. As a result, students are able to determine the authenticity of extra virgin olive oil. Fluorescence spectroscopy is taught as a part of the course Forensic Science. During the course, the students learn about the basic principles of fluorescence. Then in the laboratory exercises, the students measure 3D maps and emission spectra of selected oils. Particular attention is paid to the adulteration of extra virgin olive oil. The cause of this adulteration is the high price of this oil and the effort to increase profits from its sale. In the laboratory exercises, the students measure several mixtures of extra virgin olive oil with sunflower oil. These mixtures differ from each other by the amount of sunflower oil added. The students process and evaluate the measured results in the laboratory protocol.

Keywords: fluorescence spectroscopy, edible oils, adulteration, forensic science

INTRODUCTION

Fluorescence spectroscopy is a simple, fast and sensitive method for analysing organic and inorganic substances. This method is widely used in many scientific disciplines such as chemistry, biochemistry, environmental chemistry and forensic analysis. In recent years, there has been a rapid increase in the use of fluorescence in food analysis. This increase has been due to the fact that fluorescence spectroscopy is cheaper and more sensitive than commonly used methods such as gas and liquid chromatography. Moreover, it does not require time-consuming sample preparation.

In the course Forensic science at the Faculty of Applied Informatics at Tomas Bata University in Zlin, fluorescence spectroscopy is taught together with dactyloscopy, forensic ballistics and others. During the course, students learn basic principles of fluorescence. In laboratory exercises, fluorescence is demonstrated on edible oils which have been chosen to be most suitable due to their significant fluorescence properties. These oils consist of 95-98% triglycerides and 2-5% complex mixtures of compounds including fatty alcohols, waxes, esters, hydrocarbons, volatile substances, pigments, phenolic compounds, glyceridic compounds, phospholipids and triterpene acids. (Sikorska et al., 2004).

There have been many publications on the use of fluorescence spectroscopy for characterization of vegetable oils both edible and cosmetic (Kyriakidis and Skarkalis, 2000; Zandomenighi, Carbonaro, and Caffarata, 2005; Kongbonga et al., 2011; Sikorska et al., 2004), and for detection of oil adulteration (Guimet, Ferré, and Boqué, 2005; Ge et al., 2014; Sayago, Morales, and Aparicio, 2004-4-1). In this paper, we focus on the use of steady-state fluorescence of edible oils in teaching the laboratory exercises of the course Forensic science. During laboratory exercises, students measure the fluorescence spectra of selected oils and several mixtures of extra virgin olive oil with sunflower oil. Extra virgin olive oil is considered to be the highest quality olive oil due to its high antioxidant content. Moreover, it has a positive effect on human health (prevention of diseases such as diabetes, obesity, high blood pressure, heart disease, cancer) and therefore the demand for it grows. For this reason, and because of the

price of production, this oil is sold at a high price. As a result, dishonest producers can try to increase their profits by adding cheaper oil to extra virgin olive oil. One of these added oils is sunflower oil which is used in our laboratory task.

Using a simple experiment, students learn how to use measuring apparatus and gain practical experience in the field of fluorescence spectroscopy. The described laboratory task allows students to better remember and understand the acquired theoretical knowledge and supports their interest in science. Students learn to solve the given problem, apply acquired knowledge and interpret measured data.

THE STUDY

The described laboratory task shows the difference between the emission spectra of different edible oils to students and allows them to observe the effect of the amount of added sunflower oil to extra virgin olive oil on the resulting emission spectrum of the mixture. Steady-state fluorescence is measured by an ISS PC1 spectrofluorometer (Figure 1) which uses 300 W high-pressure xenon arc lamp as a light source and photomultiplier in photon counting mode as a detector. The spectrofluorometer is connected to the computer on which the measured data is processed.

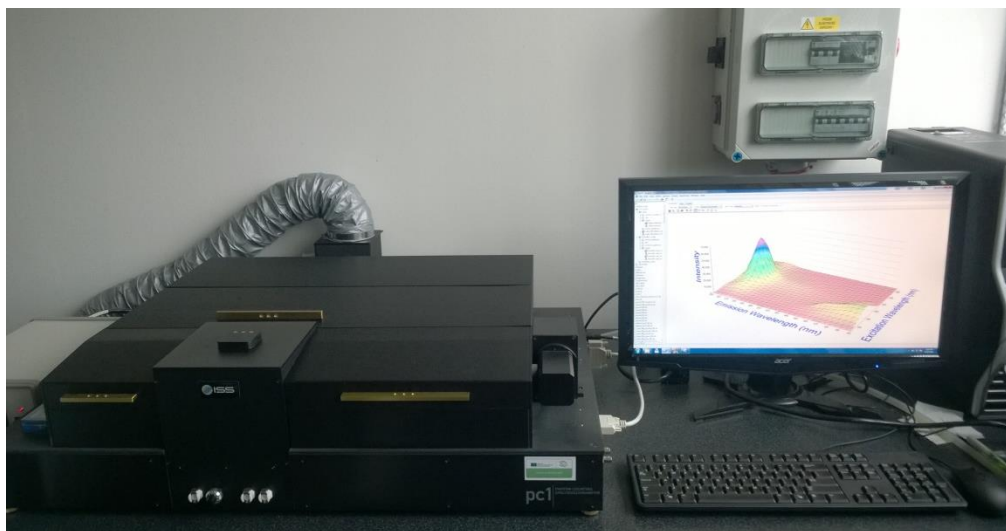


Figure 1. ISS PC1 spectrofluorometer connected to the computer

Five commercially available edible oils are analysed: extra virgin olive oil, olive pomace oil, palm oil, sunflower oil and rapeseed oil. Then, several mixtures of extra virgin olive oil with sunflower oil are measured. These mixtures differ from each other by the amount of sunflower oil added. The concentrations of sunflower oil in the mixtures are 0.5%, 1%, 1.5%, 2% and 2.5% for individual samples. Samples of all oils are measured without dilution, dissolution or other preparation at room temperature.

In the first part of the laboratory task, students compare the emission spectra of different edible oils. Before the measurement, the students prepare an oil sample: they use the pipette to pick up the sample from the container and place it in a quartz cuvette. Then, the students place the cuvette in the measuring device (Figure 2). The students measure three-dimensional spectra (3D maps) of the sample. This procedure is repeated with all samples. Next, the students determine the appropriate excitation wavelength from these maps. This excitation wavelength is used for measuring emission spectra. Finally, the students process the measured emission spectra using the software MS Excel and describe the differences between spectra in the laboratory protocol.



Figure 2. Quartz cuvette and its placement in the measuring device

In the second part of the laboratory task, the students focus on the adulteration of extra virgin olive oil. They measure several mixtures of extra virgin olive oil with sunflower oil. The procedure is similar to the previous part of the task. First, the students use the pipette to take samples for measurement. Using a 3D map, students determine the most appropriate excitation wavelength. Then, they measure and process the emission spectrum of extra virgin olive oil and emission spectrum of sunflower oil and record their findings in the laboratory protocol. Next, the students measure five mixtures that differ in the concentration of added sunflower oil. From these spectra, the students determine the minimum concentration of sunflower oil in a mixture which shows a difference compared to pure extra virgin olive oil. In practice, this minimum concentration is crucial to detecting adulteration of extra virgin olive oil.

FINDINGS

Students measured three-dimensional spectra (3D maps) of samples in the range of excitation wavelength 330-430 nm and in the range of emission wavelength 350-650 nm (Figure 3). The area of emission wavelength 650-700 nm was deliberately omitted because fluorescence of chlorophyll in this area was intense enough to overlap the fluorescence measured in the range of emission wavelength 350-650 nm.

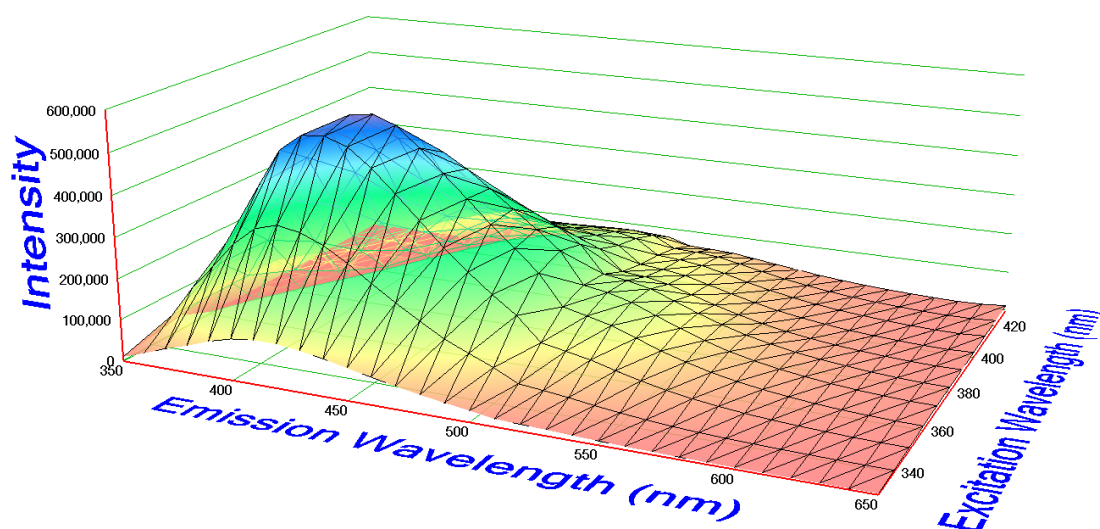


Figure 3. Three-dimensional spectrum of sunflower oil

From the measured 3D maps, the students chose the excitation wavelength $\lambda_{ex} = 355$ nm as the most suitable for comparing different edible oils. Subsequently, the emission spectra of all samples were measured in the range of emission wavelength 360-650 nm. The students processed the emission spectra of oils using MS Excel and determined the differences between them. As can be seen in Figure 4, all samples have a significant peak around

420 nm. The exception is extra virgin olive oil which has the most significant peak around 520 nm. Every oil reaches a different intensity of fluorescence. It is worthwhile to note that the rapeseed oil has the highest intensity in comparison with other oils. On the contrary, the intensity of extra virgin olive oil is the lowest.

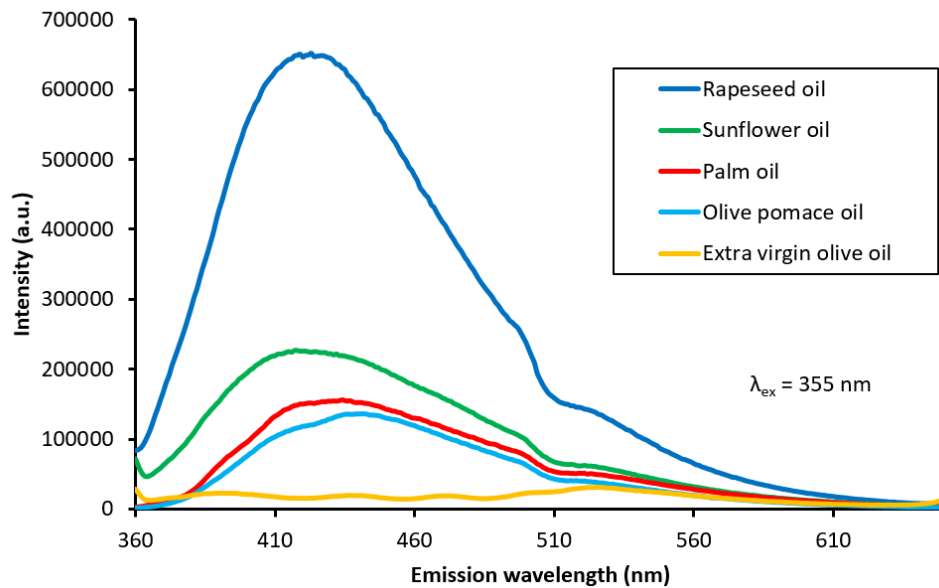


Figure 4. Emission spectra of tested edible oils

To measure the mixtures of extra virgin olive oil with sunflower oil, the students chose the excitation wavelength $\lambda_{ex} = 360$ nm from 3D maps as the most suitable. All emission spectra in this part of the task were measured in the range of emission wavelength 370-650 nm. The students measured emission spectra of extra virgin olive oil and sunflower oil (Figure 5). From these spectra, the students found that sunflower oil has a much higher intensity of fluorescence than extra virgin olive oil. Moreover, sunflower oil has a significant peak around 420 nm whereas extra virgin olive oil exhibits minimal fluorescence in this region. On the contrary, extra virgin olive oil has a significant peak around 520 nm whereas the intensity of sunflower oil decreases in this region. As a result of these observations, the students correctly assumed that adding sunflower oil to extra virgin olive oil was reflected in the emission spectrum of the measured mixture.

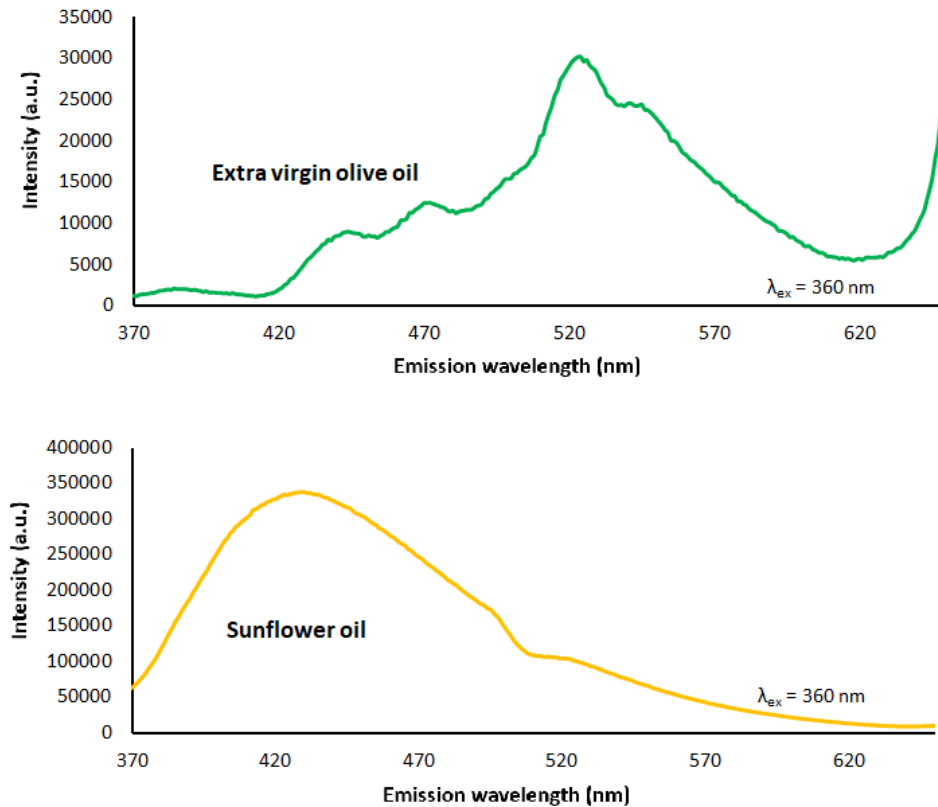


Figure 5. Emission spectra of extra virgin olive oil and sunflower oil

Finally, the students measured five mixtures of extra virgin olive oil with added sunflower oil at concentrations: 0.5% (w/w) in the mixture 1, 1% (w/w) in the mixture 2, 1.5% (w/w) in the mixture 3, 2% (w/w) in the mixture 4 and 2.5% (w/w) in the mixture 5 (Figure 6). The students compared the measured spectra of these mixtures using the chart with the pure extra virgin olive oil. Then, they determined that the minimum concentration of sunflower oil, at which a significant difference compared to pure extra virgin olive oil was observed, is 1.5% (w/w). This difference is even more pronounced for higher concentrations.

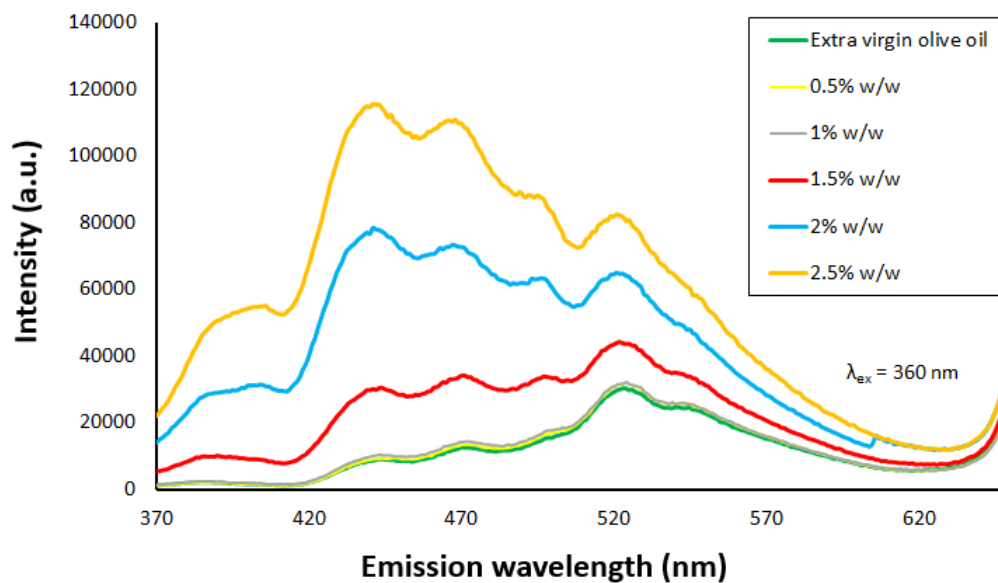


Figure 6. Emission spectra of extra virgin olive oil and its mixtures with sunflower oil

CONCLUSIONS

The aim of this paper was to show the possibility of using steady-state fluorescence in teaching the laboratory exercises of the course Forensic science. The advantage of this method is the ability to measure samples without special preparation and relative simplicity of the measuring process. Our laboratory task has two parts. During the first part, the students measure and compare different edible oils. After an appropriate excitation wavelength was determined using a 3D map, samples of all oils were measured at this excitation wavelength. During the second part of the task, the students analyse the mixtures of extra virgin olive oil with sunflower oil and determine the minimum concentration of sunflower oil at which the adulteration is detectable.

The described laboratory task allows students to better remember and understand the acquired theoretical knowledge and supports their interest in science. The students learn to solve the given problem, apply acquired knowledge and interpret measured data. In practice, sophisticated software solutions and mathematical analysis are used to process data. However, the method described above seem to be most appropriate for the basic introduction to fluorescence spectroscopy, because it does not require a deeper knowledge of spectrum analysis. The students only describe their observations and process them into the laboratory protocol. This method is more fun for students than complex mathematical solutions.

ACKNOWLEDGEMENT

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From Learning to Practice: A Draft of Access to Optimize the Structure of University Studies Taking Into Account Specifics in Arts Oriented Schools

R. ČOČKOVÁ

*Tomas Bata University in Zlin
Czech Republic
cockova@utb.cz*

O. JURÁŠKOVÁ

*Tomas Bata University in Zlin
Czech Republic
ojuraskova@utb.cz*

ABSTRACT

Modern approaches to teaching at universities in the Czech Republic reflect the current situation of higher education and its transition to commercial principles. Studies are more and more focused on practical skills than a mere theoretical knowledge. This paper is a summary of a study based on qualitative research among students of two public universities in the Czech Republic.

Specifically, it was Tomas Bata University in Zlin, Faculty of Multimedia Communications and University of Economics in Prague, the Faculty of Informatics and Statistics. This particular study was financed from the Internal Grant Agency of Tomas Bata University in Zlin. The study reveals the influence of structure of studies and study syllabuses on student's ability to work independently on a real assignment or task, taking into account the specifics of study at art oriented university. The results of the qualitative research are validated by quantitative method of questioning among students. The results of the study can be used to optimize settings and study plans to increase practical skills and competences of students to collaborate with practice and teamwork.

Keywords: team co-operation, student competence, study plan, higher education.

INTRODUCTION

The cooperation of universities with practice is deeply rooted in the past. Abroad it has been booming several decades ago, mainly thanks to the intervention of national government authorities in individual states. The forms of cooperation are very diverse, ranging from consultancy, participation in teaching, internships and part-time jobs in companies to long-term support of a university, either financially, in personnel matters or in the field of education of future graduates. In the Czech Republic the current trend at universities is an effort to reflect the demands of the labor market and to adapt the profile of their graduates to the needs of companies and potential employers.

In the Czech Republic, cooperation between academic sphere and companies is at an early stage of development and is supported by the state, more or less only in the form of strategic documents adopted especially after accession to the EU, such as the White Paper on Education or the Long-term Plan for Educational, Research, Scientific, Development and Innovative and Other Creative Activities for the area of universities for the period of 2016 - 2020 issued by the Ministry of Education, Youth and Sports (MEYS). This document outlines the desirable state of higher education that the ministry intends to achieve by 2020. There are seven priority objectives, one of which states that: "Universities will reflect current societal developments, the latest scientific knowledge, and the needs of their partners in their work. Universities will be in close and mutual open contact with partners on local, national and international level, with graduates, employers, scientific and academic institutions as well as with the non-profit sector and public administration. Account must be taken of the involvement of external actors in the preparation of study programs in the accreditation process. Consultation with employers, local actors and other partners will be considered as a natural part of the process of study programs preparation. At the same time, the organization of the process, evaluation of relevant actors and performance of the synthesis of their requirements, opinions and evaluations, will remain the responsibility of the university. They will include the communication with external partners as one of the key processes of internal quality assurance to standards for institutional accreditation." (H.R. Doc. No. 1 at 23, 2015) From the

above mentioned, a need to deepen cooperation with subjects from practice and to create partner networks arises. Student education and university curriculums setting should match the requirements of the labor market. Competitiveness of graduates is primarily given by the knowledge, skills and competences with which they enter the labor market. The total number of jobs in the Czech economy grew only slightly between 2000 and 2013, by about 4.3 %. On the other hand, the number of university graduates in the labor market has steadily increased after 2000. In 2013, the proportion of college graduates among graduates was 47 % (Ryška, Koucký, Zelenka, 2014). These data clearly state the fact that university graduates face problems in transition from education to working life in terms of labor market applicability.

The need to put emphasis on educating students to enable their good application in the labor market towards the enhancement of so-called soft skills is confirmed by the study "Higher Education in Europe", which states that: "Like the employers, the majority of graduates identified 'hard' core business skills as being an important and integral part of their portfolio. However, whilst many of them felt more than qualified in respect of discipline focused abilities, they perceived themselves as lacking the necessary level of presentation skills. Furthermore, graduates felt they had not been able to gain sufficient expertise or experience in making verbal presentations whilst in higher education." (Andrews, Higson, 2008).

STUDY

The translated study was funded by the Internal Grant Agency of Tomas Bata University in Zlín (TBU). Internal grants are awarded in support of the research activities of TBU in Zlín. Within the framework of the financial support, internal grants are provided to support student projects of scientific and creative orientation. This study was developed in order to conclude a motion for optimizing the structure of a student team as a separate functional unit competent to work on a real assignment or task, taking into account the specifics of the study of art-oriented university. The aim of the study is to identify differences and common features in student behavior and attitudes at different stages of project work. At the same time, the study reveals competences of students at various levels of education, their motivation and attitudes towards working on the assigned task. An important part of the study was a survey of the influence of the study structure (in terms of study plans) on the performance and quality of students' work on creative assignments from practice.

The study included qualitative research using scientific methods of observation and group interviews. The research was carried out on a selected sample of students from two universities in the Czech Republic, namely the University of Economics in Prague, the Faculty of Informatics and Statistics, the study field of Multimedia in Economic Practice and the Tomas Bata University in Zlín, Faculty of Multimedia Communications (FMC), the study field Marketing Communications. The aim of the study at FMC TBU is to equip future graduates with the necessary professional knowledge and skills in the field of marketing communications, economics, marketing and communication theory, enabling them to succeed in marketing departments of commercial and non-commercial companies and institutions, communication agencies, press agencies and in their own businesses. The graduate acquires knowledge of the main forms of marketing communications, including the contexts related to them, with an emphasis on specific areas of media and communication practice. Graduates also gain professional skills in the field of promotion, presentation and advertising, marketing of products and services, promotion of commercial organizations, institutions and organizations of the non-profit sector. On the other hand, students of the Faculty of Informatics and Statistics of the University of Economics in Prague are educated in the field of Multimedia in economic practice. Graduates of the study field acquire a balanced combination of specific creative-multimedia skills with synoptic economic education. Students learn classical economic and related fields such as economics, law, accounting, management, marketing, or business economics. Within the study field profiling, they study the production chains, the purposes and procedures of creating individual multimedia elements such as digital photography, computer graphics, digital video, audio, or webdesign. In particular, the study is focused on creative and productive work in both individual and team work forms. The graduate will become a multimedia specialist with knowledge of the economic and procedural functioning of the organization. They will be able to design and implement optimal tools and use of multimedia in organization communication. In addition to the basics of marketing, they are educated in the field of multimedia i.e. during their studies students undergo subjects as Java Programming, Audiovisual Communication, 3D Graphics Principles and Applications, etc. Their study is therefore more focused on multimedia, communication and

information technology. The selection of students was determined by the similarity of the two fields of study and their artistic focus.

In November 2015, a two-day creative workshop was organized for students of both universities during which the students worked in randomized teams which were created by the random draw method. Each team was composed of five students, two of them, possibly three, from one university, and vice versa. Together they worked on a brief, which aimed to creation of a promotional campaign for the client. During their work and the subsequent presentation of the results on the second day of the workshop, covert participant observation of all teams took place. After the final presentation, interviewers made a group interview with individual student teams according to a predefined scenario. During the workshop, students worked on assignments that were presented to them by the client. During their work, they were able to consult their advancement with the present teachers or directly with the client who also gave feedback to all teams after the final presentations. The workshop included work on creative brief and presentation of team results too. As part of the group interviews, students were asked, inter alia, about this question: Did you use the knowledge and skills you acquired during your studies for the purposes of the project? If so, which specifically? Which subject (s) helped you the most? Their answers gave an overview of the most useful subjects from the perspective of the students of both universities, Tab. 1 and Tab. 2. The results ascertained by qualitative survey were subsequently verified by quantitative survey by the questioning method. The questionnaire survey was focused on students in their final year, 3rd and 5th year of study field Marketing Communications at the Faculty of Multimedia Communications of TBU in Zlín. As part of the validation of the results, only one question was interpreted from the questionnaire and it read: "What do you think is the greatest advantage of studying at FMC? Which knowledge and skills (from which subjects) have you most used in practice?" Qualitative data is only validated by quantitative survey of students at FMC TBU in Zlín. The survey was preceded by creation of scenarios for group interviews, instructing of observers and interviewers and determination of a target group. The target group was students of the 2nd and 3rd year of the study field of Multimedia in the Economic Practice of the Faculty of Informatics and Statistics of the University of Economics in Prague and students of the 2nd - 4th year of Marketing Communications at the Faculty of Multimedia Communications of TBU in Zlín. The total number of students participating in the qualitative survey was 21.

Qualitative research took the form of a pretest. To achieve the set out objectives qualitative research methods were used:

- covert participant observation during the workshop, including the acquisition of an AV record for the purpose of analyzing and verification
- group interview - interviews with individual student teams participating in workshops, including audio recording for the purpose of analyzing and verification

Qualitative research delves into causes. Its purpose is to find out motives, opinions and attitudes of respondents (Hendl, 2005). Quantitative research, on the other hand, obtains data on frequency of occurrence, its purpose being to collect measurable numerical data (Kozel, 2006). Research through group interviewing is very useful, especially during the pre-research phase or in the final stage of the final interpretation, where we mainly want to answer the question "why?" (Foret, Stávková, 2003)

In order to verify the findings from qualitative survey quantitative survey was used in the form of a written questionnaire - questionnaire survey for students of the final years, namely 3rd and 5th year of FMC TBU in Zlín.

RESULTS

Qualitative Survey Results

Within the qualitative survey - group interviews, the students listed the subjects they had completed during their studies, which they considered to be the most beneficial for the assignment of the client from the practice. These subjects, according to their observations, have brought the competences needed to work on a real task from practice. The study subjects mentioned by the students of both universities are listed below in the tables Tab. 1 and Tab. 2. In addition, the students of both universities have in most cases stated that in the first year of university studies they lacked the ability to create a coherent and constructive concept without leaving out

important details. During the bachelor study, i.e. in the 1st to 3rd year, they expanded the knowledge of processes and procedures or usage of multimedia in practice.

Subjects of the University of Economics in Prague:

Subject	Subject Objectives	Subject Results/Outcomes	Year
Multimedia Project Management	The subject acquaints students with the issues of management and project management in creative areas of economic practice specializing in communication (promotional) and cultural content. The subject focuses on the specifics of individual areas where different variations of managerial roles with distinctive powers and style of management exist.	Upon successful completion of this subject, students will be able to define and describe the production cycles of production of multimedia products, to define and describe their practical applications in the field of economic and material management. Students will be able to plan, implement, evaluate and assign creative content projects in the changing market conditions.	2nd
Rhetoric	The subject introduces rhetoric that is understood both as a theoretical reflection and as a practical skill. Students learn the place and role of rhetoric in the history of Western culture. It begins with the place of rhetoric in ancient knowledge and its relation to epistemology. It shows rhetoric as one of three free arts (trivium) besides grammar and dialectics in medieval universities. It will introduce rhetoric from the Renaissance to the present. Students will meet some of the famous speakers and their speeches. In the area of practical exercises, the subject focuses mainly on the preparation and presentation of a professional text, as well as on the analysis and	Upon successful completion of this subject, students will be able to argue for the importance and meaning of rhetoric in contemporary Western culture. They will also be able to prepare a comprehensible and convincing presentation of the professional speech. They will also be competent to critically listen, analyse and evaluate professional speech.	2nd

	evaluation of a professional oral presentation.		
Presentation Skills	The subject is focused on the development of communication and presentation skills of students. It is oriented very practically and its essential part is the practical preparation and training of all theoretically discussed areas.	Upon successful completion of the subject, students will have the ability to present themselves confidently and professionally, to cope with verbal and non-verbal components of speech, to be able to cope with stage fright and to work with the audience - to get attention and interest.	3rd
Advertising Agency	The field of advertising agencies has been experiencing total chaos over the last few years, large brick-and-mortar agencies are perishing, new agencies fighting for their clients - and often winning. If you've ever had an ambition to make an ad in your life (beware, you cannot read upon it, you have to learn it, as you do not learn to lift the barbell by reading the Bodybuilding Guide), come and try it. It does not mean to invent ingenious and pointless ideas without borders. It means thinking creatively, getting inspired by industry leaders - and learning to present them in different ways. The subject introduces the students to the principles and applications of multimedia communication, means of expression, elements and previous relevant communication theories. Students are acquainted with the industry and practice of the creative and communication industry in	Getting out of the subject will give you a clear idea of what it takes to succeed in the agency - and what it takes to get a client. Upon successful completion of this subject, students will be able to acquire the basic principles of communication theory and they will be able to apply them in practice. They will acquire knowledge of concepts of communication and the preparatory stage of multimedia communication, a goal of which is to prepare documentation for production specialists in the area of multimedia. Students will have an overview of creation of a communication campaign as a whole and its realization through the agency processes that are used in practice. The subject is a faithful simulation of an advertising tender - a tender for a large client contract where the randomly formed groups -	3rd

	<p>its content level. The theory is confronted with the practice, creating a coherent idea of the initial creative processes that are the essence of multimedia creation.</p>	<p>fictitious agencies compete against each other. Randomly created groups have leaders whom they choose, or appoint with the group's approval. The leader is responsible for the group's work and may be replaced if the group repeats misleading or vague results. If the leader completes the subject with the group, he/she gets 90 points. During the course of the subject, the groups will face a very authentic assignment to fictitious tenders that will increase both the difficulty and the score - approximately doubling each time. One of the groups or none may succeed in the tender in reality. Points can be rewarded in lesser amounts as well as significant moments in the work of other groups. The guests will be top personalities of Czech advertising and one lesson is devoted to the Czech media. (Foret, M., & Stávková, J. 2003)</p>	
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Table 1: List of the most Conducive Subjects of Students of the University of Economics in Prague, Study Field Multimedia in Economic Practice

Subjects of the Faculty of Multimedia Communications:

Subject	Subject Objectives	Subject Results/Outcomes	Year
Advertising	Obtaining knowledge from the field of advertising as a fundamental basis of marketing communication. Students acquire knowledge about the nature, character, functions, types and importance of advertising. Based on the communication models, the characteristics of advertising and its individual phases are characterized. Due to the dynamically developing trends, attention is paid to new forms of advertising and their use.	Students are knowledgeable in advertising, can assess the suitability of particular types of advertising for specific purposes, and understand the role of advertising in the marketing communications system.	2nd and 3rd
Public Relations	Aim is to acquaint students with crisis communication, sponsorship and fundraising. These topics are also discussed in the broader context of marketing communications. The subject presents public relations as part of corporate and organization management. It clarifies the importance of the right preparation and timing of PR activities and the possibility of linking different forms of PR. It brings case studies, develops student creativity, and finds new ways to resolve PR campaigns.	Students will understand the importance of communication in the general level, will be able to analyse the needs of target groups, will know the rules of Czech orthography.	2nd
Communication Agency	The subject develops theoretical knowledge of students acquired in other subjects in practice. Students learn the methodology of project management in a variety of	Students are capable of teamwork, have experience in project management and can solve standard problems of production character. They understand better the time and physical demands	from 1st to 5th

	real situations and develop their organizational and communication skills (soft skills). Emphasis is placed on communication and teamwork.	of creative and production tasks.	
Marketing	Students are acquainted with the importance of strategic marketing management of an organization in the conditions of a developed market economy. They will understand the importance of marketing strategic planning and its individual steps. The goal is to apply analytical methods of strategic planning in the form of case studies.	By solving case studies, students will be able to apply basic marketing strategic analyses - SWOT, portfolio analyses etc. Students will also gain insight into the importance of marketing in the non-profit sphere and in the services. At the end of the course, students will get an overview of current progressive marketing approaches around the world.	1st
Digital Communication	The aim of the subject is to broaden students' knowledge in digital communication environment, to practically master the basic tools of advertising in digital communication with an emphasis on online communication. Emphasis is also placed on understanding of functionalities and the real mastery of the application of acquired knowledge into practice.	The student will gain advanced knowledge in the field of digital communication and related fields. Knowledge can be applied in both theoretical and practical work.	from 1st to 3rd
Teamwork	The subject focuses on understanding the importance of teamwork, training and developing basic communication and presentation skills. The goal is to realize the process of team development, the importance of correct	Students gain knowledge of the basic rules of communication, can use them in practice in various communication situations. They gain knowledge of team work, individual team roles and are competent to work effectively in a team.	1st

	<p>argumentation and to find out which team roles are their own. Students learn to understand their communication partner and his/her preferred style of communication, adapt to it, and make it easier to accept other student's arguments. Goal is to manage the preparation of effective public appearances, to implement them, to gain certainty and to get rid of possible troubles. Emphasis is placed on the verbal and non-verbal component of speech.</p> <p>An important part is to practice these skills.</p>		
Direct Marketing	<p>Aim is to provide students with theoretical knowledge of direct marketing as well as practical tips for their successful application in practice. Emphasis is placed on the most effective use of individual direct marketing activities in communication with the target group (customer). The structure of the subject takes into account the reasons for the increase in the importance of using direct marketing as a specific market approach and the individual target segment of the market. However, it also notes the relative importance of specific direct marketing tools and problems in their implementation and, above all, the importance of creating and maintaining databases and their use as a marketing tool.</p>	<p>Students will acquire the required range of knowledge through their participation in the lessons within each of the areas of the subject. Students will be ready to apply the theoretical and practical experience gained in the field of direct marketing as part of the process of creating individualized marketing strategies geared to specific market segments with an emphasis on database marketing and CRM.</p>	3rd

Communication and presentation skills	Goal is to acquire and consolidate presentation skills that will be trained and refined based on feedback.	The student will acquire the professional presentation skills.	1st
Expert Block - Social Media	Students will be acquainted with current trends and practices in social media marketing in the Czech Republic and abroad. Thanks to the lecturers, currentness and diversity of topics, diversity of opinions and views on the given topic are ensured.	Students will get the latest information from practice, they will be able to take a different view of the topic and increase their competencies in social media marketing. (Portál UTB - Prohlížení. (n.d.). Retrieved August 22, 2016)	from 1st to 3rd

Table 2: List of the most Conducive Subjects of Students of the Faculty of Multimedia Communications of TBU, Study Field Marketing Communications

Quantitative Survey Results

The results of the qualitative survey were verified by the students of the Faculty of Multimedia Communications of TBU. Respondents of the survey were 3rd and 5th year students who finished their studies in the academic year 2015/2016 and 2014/2015. All final-year students attended the questionnaire survey. Thus, the total number of respondents was 215. Figure 1 shows the number of study subjects rated by students as the most conducive in practice.

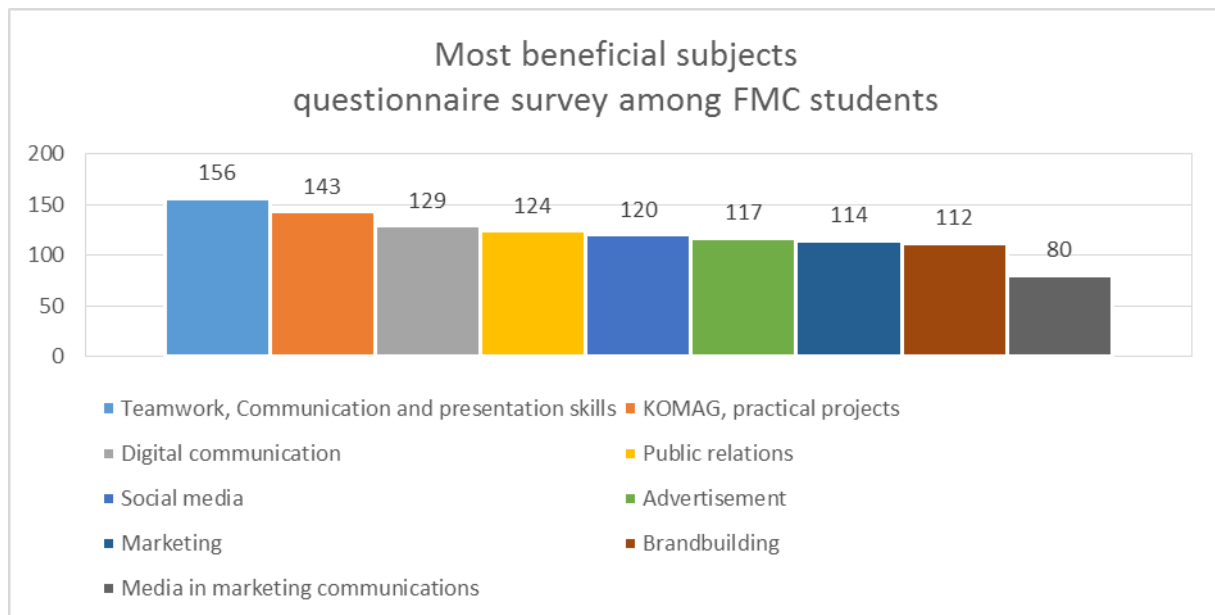


Figure 1: Results of the Questionnaire Survey of Students of the Faculty of Multimedia Communications of TBU, Study Field Marketing Communications

CONCLUSION

A qualitative study has shown that students of Marketing Communications of Faculty of Multimedia Communications of TBU have appreciated the most the knowledge and skills gained in subjects Communication and Presentation Skills, Teamwork, Communication Agency. These subjects teach students practical skills and their transfer to practice as well as interpersonal skills, so called soft skills.

Theoretical subjects were Public Relations, Advertising, Digital Communication, Marketing, Direct Marketing, which provide students with basic theoretical training in the field of study, and, lastly, the subject of the Expert Block - Social Media, which provides students with current information from practice and trends in the field. Among the courses marked by students in the study field of Multimedia in Economic Practice of the University of Economics in Prague they mentioned Multimedia Projects Management and Advertising Agency, which contain communication theories, basics of project management in practice and simulation of advertising tenders. In addition, the students mentioned the most beneficial subjects focused on soft skills, namely Presentation Skills and Rhetoric, which are similar to the subjects taught at the Faculty of Multimedia Communications - Presentation and Communication Skills and Team Work.

The questionnaire survey of third and fifth year students of the Faculty of Multimedia Communications verified the results of the qualitative survey. The structure of the most beneficial subjects in the results of the two surveys is more or less the same. The most beneficial students evaluate the subjects Teamwork, Communication and Presentation Skills, and Digital Marketing. Eight students from the total sample 215 marked the subject of Theory of Argumentation, Media in Marketing Communications and New Trends in Marketing Communications. Given that it is about 3 % of the total sample of students, we can consider it to be marginal. There are no data on the quantitative verification of interview results at students of the University of Economics in Prague, but they are expected to be verified in the future.

From the above mentioned results it can be concluded that university students, especially those with artistic focus, need for their practice and independent creative work on real assignments study plans to be set up in the way for them to get the basics of presentation and communication skills optimally at the beginning of their studies. They will need these skills throughout their studies and, of course, primarily in their professional lives. At the same time they will acquire basic theoretical knowledge about the field, which is further developed in the second and third year of bachelor study. Masters studies should provide them with a deepening of knowledge and skills in the field studied and extend this knowledge of related fields that will create a comprehensive professional framework of the field and will lead to an interest in deeper exploration of the development of the studied area. The education of students leading to their high competitiveness in the labor market is best supported by the possibility of practice and gaining practical experience, with as many real assignments and clients as possible, throughout the whole study. This is offered by the Faculty of Multimedia Communications within the subject of the Communication Agency where the students carry out projects or events for the general or professional public or a competition Talent of Marketing Communications where students work on a creative brief from the company within 24 hours, or the exit workshops with experts from Advertising Agencies.

The result of this study is a design of an optimal structure of a course of studies at an arts oriented university which promotes the education of students to competence for practice and their employment on the labor market. This structure is shown in Figure 2 below.

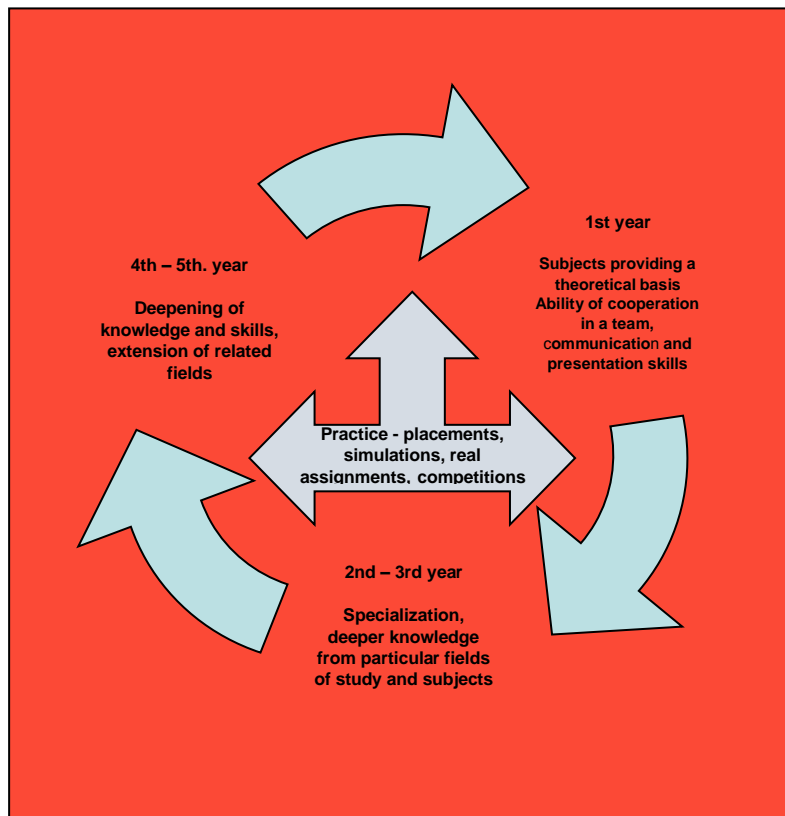


Figure 2: Draft of an Optimal Structure of Study at Arts Oriented University

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General Principles of Shaping Teaching Content For Informatics As A Teaching Subject

Jiří DOSTÁL

Faculty of Education, Palacký University Olomouc

Czech Republic

j.dostal@upol.cz

Jiří KROPÁČ

Faculty of Education, Palacký University Olomouc

Czech Republic

ABSTRACT

The rapid development of informatics and its importance for society has already increased the significant educational demands at the ISCED 1 and ISCED 2 level. However, considerable attention is already paid to the use of information-technological resources at the ISCED 0 level. Through its incorporation into the school curricula, respect is expressed for the impact of the development of informatics both on society and the life of individuals.

Although other disciplines and sciences have also undergone dramatic developments recently, not all of them are comparable with informatics or information and communication technologies in terms of the impact of their development on life experience. The speed of this development makes the issue of didactic transformation important, yet complicated for the teaching of informatics. For these reasons the paper focuses on detecting the general principles associated with the development of a curriculum and defining the learning objectives.

INTRODUCTION

Activities related to the selection and modification of the teaching content can be referred to by terms such as curriculum development, designing or building of educational programmes, educational facilitation of the educational contents, didactic reconstruction, didactic transformation and others. The meaning of these terms is similar but not identical.

The notion of the development or designing of the curriculum or educational programme has a broader meaning than the term didactic transformation; the curriculum covers issues relating to the purpose, values and objectives of education, along with the specification and characteristics of the schooled population, definition of the content and its time sequence, learning strategies and procedures, conditions for the teaching processes and identification of learning results etc. (the meaning of the term curriculum is not yet understood in a uniform way). The issues of the curriculum and its development are traditionally presented in the Czech Republic in publications by E. Walterová (1993), (1994), (2006) J. Průcha (1997), J. Skalková (1999) and others, with M. Pasche's contribution still being regarded as valuable (1998). The curriculum design is determined not only by the stakeholders and their immediate conditions, but also by a number of circumstances, referred to as part of the curriculum context. These are the level of knowledge, development of science and scientific disciplines, model of man and his position in society, cultural traditions and the level of human experience, socio-political and economic development and its demands along with the concept of education, derived from philosophy and culture and possibly other social science disciplines, for more details see (Walterová, 1994, p. 21).

Didactic transformation is an important activity of curriculum development. The statements presented above suggest the complexity of the didactic transformation issues for the teaching of informatics. In general, didactic transformation is a difficult topic both in theory and practice, let alone in rapid and substantial changes of external and internal conditions, approaches, learning objectives, etc.; as we can witness in teaching informatics.

ABOUT THE DIDACTIC TRANSFORMATION

The teaching content planning / designing / innovating, referred to by us as didactic transformation, is a complex issue which is hard to grasp on both a theoretical and practical basis. Therefore, it is also not easy to express the meaning of this term, as it has not yet been unified. According to J. Skalková, the subject matter presented to pupils "emerges from the modification of the contents representing various fields of culture (science and technology, art, activities and values) and their integration into school education, i.e. into curricula, syllabi, textbooks, into the teaching process. In this sense, we speak about the didactic transformation." (Skalková, 1999, p. 63). Thus, the subject matter represents the teaching content modified for teaching purposes enabling its presentation to pupils. During and after lessons, pupils learn the teaching content presented to them in the form of the subject matter. This is accomplished through the thought process of pupils and therefore depending on their previous experience or knowledge (preconceptions), teacher's activities and

other teaching conditions (e.g. material resources and information availability), the teaching content is further transformed.

Consequently, the concept of didactic transformation relates to the content of education and its transformations through the processing for teaching purposes and the actual learning by pupils. For these reasons several authors also refer to a pre-interactive phase of didactic transformation, followed by the interactive and post-interactive phases. In many cases, it is not obvious without the context, how widely the term of didactic transformation is understood by the author; it is most frequently presented in the description of the pre-interactive phase with no further specifications. Thus, in its course the teaching content with the aspect of its learning by pupils is selected, simplified, structured and "publicized" for presentation to the pupils. It concerns learning in an optimal way and via the best possible means in terms of their cognitive abilities and in terms of the use of the educational potentials of the content. With the pre-interactive phase of didactic transformation, the desired progress of the procedural aspect of pupils' learning and achievement of optimal learning effects are respected.

In the text above, we have particularly mentioned the basic activities carried out in the didactic transformation and generally outlined the "blurred" scope of this concept; the above does not only apply to the subject matter didactics of informatics, but our focus is of a wider nature and the requirements and conditions of didactics of informatics are subsequently also taken into account. In their study, observing the communication approach of the subject matter didactics, see also (Brockmayerová-Fenclová, Čapek and Kotásek, 2000), J. Slavík and T. Janík (2005, p. 339) defined two poles in the field of the didactic transformation: *"On one extreme pole there are 'real activities of an expert' inside the given discipline, and on the other 'real activities of a pupil' inside the relevant teaching subject."* The perception development of the theoretical reflection of the activities referred to as didactic transformation, together with the theoretical description of some of the significant activities of this transformation, is presented in P. Knecht's article (2007). A profound analysis of didactic transformation issues can also be found in a study by J. Slavík et al. (2014). Methods of didactic transformation depend on the nature of the discipline and its corresponding teaching. Methods of teaching aimed at more academic subjects differ from those concentrating on a practical nature, where the didactic transformation is particularly directed towards the creation of learning situations typical of the activity in the given field (Janík, 2013). In teaching informatics, it is necessary to interconnect the transformation of the content of both of these methodologies. In the text below it will be demonstrated that the didactic transformation process is somewhat differently described depending on the nature of the content.

Below we are going to present the definitions and express the meaning of the didactic transformation concept matching the requirements and conditions of didactics of informatics. We will show them in the order they were formulated. More of these can be found in the quoted studies, or possibly also in (Kropáč, Kropáčová, 2006).

Based on his important work, often quoted by domestic authors, R. Möhlenbrock (1982, p. 78, 79) considers the *didactic transformation* to be a reshaping of selected scientific contents (transformandum) into a simplified teaching content comprehensible for pupils (transformat), while taking into account pupils' receptive and cognitive moments (rezeptiver und kognitiver Momente) as well as teaching objectives associated with the content. In connection with the work of the above named author it is necessary to note that the basis of the transformation - transformandum - might be either the original - the reality (an object, an actually performed activity, etc.), or a model of the original. The "model of the original" is often a scientific theory (note: the content of a theory or model reflects the substantial links and relationships, in teaching it is then applied to a typical situation or object). We believe this aspect to be important, as it is in fact to a certain degree analogical to K. Popper's "concept of three worlds" used in the educational processes; see (Hejný, Kuřina, 2000). However, the application of this approach in the didactics of informatics has not been sufficiently developed to date, although this factor predetermines the nature of the teaching of informatics as well as the didactic transformation methods, as will be mentioned below.

In our opinion the wording of the meaning of the didactic transformation concept of R. Möhlenbrock (1982) is well-suited for the subject matter didactics of informatics. In addition to the wording above defining the didactic transformation concept, J. Skalková (1999, p. 64) introduces a diagram describing the pre-interactive phase of the didactic transformation. In line with the author and proceeding from the diagram, it can be noted with respect to the teaching of informatics that within the relations in the pedagogical field the factual and operative knowledge, which the discipline of informatics possesses, is reshaped, as are the related social activities, the value orientations and attitudes. According to J. Skalková, relations in the pedagogical field are connected particularly with the categories of objectives as well as the pupil and teacher's personalities. The explicit definition of the value and relationship areas seems to us to be very useful. D. Nezvalová (2000, p. 7,

8) states that the development of the ability to make correct decisions in a specific situation is related to intellectual responsibility and moral consequences. As to the world of informatics and information technologies, it is more important than in most other fields for an individual to be able to reflect on situations and behaviour through the prism of moral values and be able to apply them.

The wording of the meaning of the didactic transformation concept and related contemplations have already partly answered the question of what content enters the didactic transformation process. Here we do not aim to specify the content from the factual point of view, but are going to keep to a level of general categories suitable for expressing the content. Therefore, we shall follow up, among other things, also the above ideas of J. Skalková. Similarly, as in the case of technical teaching subjects, J. Malach's approach (2002, p. 121) appears to be suitable for teaching informatics, as he professes that the content of the education consists of: *information or findings* (concepts of objects and phenomena, facts, notions, definitions, relationships between the notions, laws, theories, hypotheses, methodological approaches to scientific research), *activities* (of an intellectual, sensory and psychomotor nature), *abilities* (to learn, think, observe phenomena, create, experience emotional feelings and put forth arguments), *value judgements* (about the world, other people, ideas), *attitudes* (to oneself, to other people, to the world and its values, to knowledge). All these components are presented to the pupils modified for teaching purposes in the form of the subject matter.

We consider the enumeration list above to be necessary, although it lacks the explicitly and adequately differentiated categories suitable for identifying the content when entering the transformation process and the categories indicating the results or outputs of the didactic transformation, i.e. categories denoting what the pupils have mastered. Let us give an example - the categories of findings, activity, morality are suited more for the description of factual and operative perception, social activities, value orientations that "mankind possesses" (based on the diagram by J. Skalková, 1999, p. 64), the categories of knowledge or awareness, skills, competencies and attitudes are categories more suitable for expressing learning objectives or results. Consequently – the findings that society possesses become the knowledge of the pupils through teaching.

In our opinion teachers of informatics are forced more often than teachers of other subjects to carry out wide-ranging innovations in their lessons due to constant changes. This activity can be adequately referred to as the didactic transformation, because it does not only concern an analysis of the given subject matter, aimed at the maximization of its educational potentials. Teachers of informatics often find themselves in a situation where to a large degree they develop both the subject matter as well as the concept of teaching.

PROCEDURE, BASIC CONNECTIONS AND REQUIREMENTS APPLIED IN DIDACTIC TRANSFORMATION

As we have mentioned above, the didactic transformation aimed at teaching informatics results in the adaptation of the informatics content to the psychological level, needs (viewed also from the social aspect), interests and experience of pupils as well as the efficient progress of their cognitive activities. One may assume that theories and findings of didactics, including didactic principles, are complied with. In particular, it concerns mainly those which various systems of didactic principles usually refer to as principles of systematicity, scientificity, adequacy, constancy and clarity, along with the principles of simple to complex, combining theory and practice and having educational value. These principles aim at the subject matter presented to the pupils fulfilling not only the learning requirement but also the set functions such as informative, formative (developing cognitive skills, thinking), instrumental (mastering the subject matter allowing follow-up or related activities) and educational functions. Before specifying a didactic transformation process in greater detail, we need to point out at least two facts. First, there is the above mentioned "division" into the pre-interactive, interactive and post-interactive phases and the "problems" in defining the scope of the concept of didactic transformation. And secondly, it is the understandable diversity of the description of the didactic transformation process depending on the author and "language area". Here we target primarily the pre-interactive phase of the didactic transformation.

Our subject matter of didactics draws inspiration from the studies by J. Fenclová, which "mainly at first" were aimed especially at the didactics of physics, among others (1982). Many of her papers enjoy a wider application, see for example (Brockmayerová-Fenclová, Čapek and Kotásek, 2000), as she and the team of authors proceed from the communication concept of the subject matter didactics, where in this concept the structure of the subject matter didactics is at the very least close to the didactic transformation process. However, it needs to be noted that the following names of the didactic transformation levels are considered by us to be adequate mainly for teaching aimed at more academic subjects, see above.

Elaborated in co-operation with prominent co-authors, the study (Brockmayerová-Fenclová, Čapek and Kotásek, 2000) applies a more consistent communication concept of the subject matter didactics. The levels of the didactic transformation are named similarly, but have a broader meaning. These are:

- I. Educational dimension of the discipline, its study from the point of view of communication and communicability
- II. Didactic system of the discipline,
- III. Project of teaching the given discipline.

We do not consider it necessary to further characterize the mentioned activities of the content transformation in individual levels. In accordance with the studies by J. Fenclová listed above, these levels are followed by additional levels or problem areas of the subject matter didactics, namely the teaching process and teaching results in the discipline; in this instance it already concerns the interactive and in a certain sense also the post-interactive phase of the didactic transformation.

In our opinion, the above described process of the didactic transformation can be adequately applied in the teaching of informatics. However, if one speaks about the content representing the object of transformation (transformandum) only in terms of science, or possibly findings, etc., it is hardly conceivable to incorporate the content if there is a prevalence of practical activities and the educational objective focuses predominantly on skills or competences for their performance or types of behaviour. Strictly adhering to this description of transformation, these categories could represent not the primary objective but merely secondary targets. Nonetheless, in teaching informatics, it is possible to express the primary objective with these categories, e.g. competency to something. Even in this case the pupil's knowledge is necessary, specifically such knowledge that conditions the mastery or application of competencies. To sum up – the process of the didactic transformation of the content, aimed "predominantly at competencies", is not aptly expressed by the description above (the necessary knowledge and the set of attitudes, and relationships depend on the competences).

In the monograph (Kropáč, Kropáčová, 2006), while focusing on the teaching of technical subjects, we compared the said processes of didactic transformation presented in the preceding paragraphs, associated with the names of J. Fenclová, as well as A. Riedl. We have noted that there were no deeper differences in the general procedure and that "both of the methods of transformation" include levels relatively close in their meaning, perhaps even analogical. The names of individual levels of didactic transformation for teaching "more academic subjects" as well as "practical" teaching, not invoking confusing or restrictive ideas, can be as follows:

- I. Scientific or specialist system of the content,
- II. Didactic system of the content – findings, activities, value orientations, attitudes
- III. Teaching programme, subject matter, its medial presentation, or possibly concepts of different presentations to pupils.

Before producing a brief description of the activities carried out on individual levels of didactic transformation it is necessary to state a few facts. With regards to didactics of informatics we consider as useful the method of presenting the progress of didactic transformation, which is "apt" for the content of academic subject teaching as well as the content of practical teaching and also the same for both codes of the content presentation according to S. Štech (XX2009), i.e. for the serial as well as the integrated code. The teaching content of informatics is indisputably so diverse.

There are a number of ways to describe the complex activity, which the didactic transformation undoubtedly is. It is described in a different manner by the above-mentioned W. Sesing (2006), and after entering the key words - "Didactic Transformation" or "Didaktische Transformation" in the internet search engine one can find several other descriptions. However, if the entered key words read "didaktická transformace" or "didaktická transformácia", the displayed descriptions, as we have discovered, will vary less from that presented by us; and this is what we strive to achieve - to keep to the terminology and practices of our subject matter didactics.

Therefore, one may note that the didactic transformation described herein aims at intentional, organized learning and the preparation of the subject matter for teaching. It can involve mainly formal and informal education. For unintended, informal learning the above cannot be applied. The fact that the didactic transformation as well as the actual teaching takes into account and uses the results of unintentional learning (pupils' experience, pre-conceptions) is another matter. The content-related activity of the teacher and the pupil depends on what experience pupils have acquired in relation to this content "out of school" or from different, previous education.

The dynamically developing discipline, changes in the teaching of informatics and the need for a more sophisticated development of the didactic transformation progress with respect to the optimization of the educational potentials of the content are the reason for the only "brief and practical description" of activities in

the individual levels of the pre-interactive phase of the didactic transformation, intended more for illustration of the issue. In particular, we shall build on the monograph (Kropáč, Kropáčová, 2006).

I - Activities at the level of scientific or specialist system of the content

To start with, this concerns an analysis of the discipline of informatics in terms of its contribution to the learning objectives necessary for pupils. The object of the search is the suitable starting structure of the informatics and the presentation of the content areas in specialist information sources, which ensures the accuracy of the findings as well as their system. "Some sources" most certainly offer a more appropriate starting point for the follow-up progress of didactic transformation for specific teaching of informatics in "the given circumstances" than others. Therefore, it is frequently possible to choose from more options of organization and expression of the content in the scientific or specialist system of informatics. The result of this choice by the transformer is predetermined by the possibilities of communicating the derived system of the content of the subject matter for the anticipated teaching of informatics (derived from the given starting system structured to meet the needs of science or scientific discipline), including the creation of prerequisites for the development of individual and creative thinking. Consequently, it concerns the systems (on the level of science or scientific discipline) that after the transformation offer possibilities of analytic and synthetic methods, as well as generalization and concretization which will be used in the lessons.

At this level the selection of scientific or specialist findings, processes and methods of informatics starts along with the selection of related attitudes, approaches and values appropriate for the achievement of the set objectives of teaching informatics (but not yet the transformation).

II - Activities at the level of the didactic system of the content – findings, activities, value orientations and attitudes

In dealing with the didactic system, one witnesses a deeper clarification of the concept of the specific teaching of informatics, objectives and the teaching content as well as relationships with other educational contents and requirements for the teaching content, along with contemplations about teaching methods, the context of pupil personality development and upbringing and the onset of contemplations about the method of the evaluation of the results of teaching, etc. Activities at the level of the didactic system bring changes to the chosen and further selected necessary contents and suitable systems of informatics as well as the related value orientations and attitudes via the "transformation process". Therefore, the selection of the informatics content is implemented along with the adaptation of the selected content to the cognitive abilities and interests of the pupils and its organization into the logically structured system suitable for the learning process of pupils and its objectives. The content is adapted to the potentials and abilities of the pupils, the continuity to the previously acquired knowledge of pupils is searched for even in connection with other subjects, and furthermore possibilities for the development of pupils' cognitive abilities and educational options are explored, along with contemplating, but not yet developing, the ways of presenting the content to the pupils. These activities are directed towards the use of the optimal educational and formative values of the content. The requirement of pedagogical constructivism lying in the didactic system and subsequently the subject matter taking into account pupils' pre-conceptions is currently needed.

Therefore, the focus of the activities of the transformer in this level leads to the creation of a model of the teaching of the given whole (e.g. by making a list of terms, names of activities carried out, defining the framework objectives, etc.) and the determination of its context, importance, nature of the cognitive activities of pupils in it, demandingness and the resolution of the issues of learning continuity. Here the priority is not yet about the development of a teaching or study documentation, a detailed programme of teaching or didactic texts. The transformer performs in-depth quantitative and qualitative content reduction. At this stage the future concept of teaching, e.g. the application of the user interpretation of teaching (Stoffa, Procházková, 1997), and similar approaches manifest themselves significantly.

III - Activities at the level of the development of the teaching programme, subject matter and its presentation to pupils

The teaching programme already represents a more specific way of implementing the didactic system for the given teaching subject in the syllabi and curricula, textbooks and other didactic texts, aids, etc. The teaching content transformed into the subject matter is presented during lessons to pupils who are to learn it through their own efforts. In employing this level of transformation, the conceptual and knowledge aspects of teaching are already fully developed and thanks to the organization of the subject matter the conditions for inducing activities optimal for acquiring the intended knowledge, skills, relationships and attitudes also for the development of the pupils have been created.

For designing units of the subject matter L. Mojžíšek (1989) recommended that while applying the didactic principle of systematicity the psychological activities of pupils were to be directed from an overall non-analytic view of the whole to an analysis of the subject matter, then to the gradual explanation of the subject matter and finally to the completion of the part of the teaching with an overall view of the whole, already knowing the elements, where the essential characteristics, properties and relationships will start to be distinguished. To what extent this opinion, which today is regarded as representing an older viewpoint, is suitable for teaching informatics has not yet been sufficiently proven.

At this stage the transformer also contemplates the method of the most effective presentation of the content or the subject matter and possible approaches to teaching for different groups of pupils, (individualisation of teaching), including issues such as - what activities are optimal, how the cooperation of pupils can be facilitated, how potential problems in lessons can be avoided, how the students can be presented with the desired objectives of teaching and how their achievements can be checked, how the consistency or systematicity of pupil's knowledge can be achieved. Let us add that the important moment of the application of the learned matter in teaching informatics should be appreciated not only on the third level of didactic transformation.

CONCLUSION

Finally, we shall present the two theses resulting from our broader knowledge. The first follows the different character of the teaching of varied contents or teaching subjects, as highlighted for example in the study (Janík, 2013). Teaching of informatics ranks among those subjects where learning results can be optimally expressed as competences as they best reflect which extensive and meaningful spheres of activities a pupil is to learn, a different form is problematic here. The necessity of knowledge, sub-skills, etc. is then based on the competences. Therefore, the competences to be learned are an important factor affecting or predetermining the content structure along with the selection of specific elements of the content.

The second note relates to the dependence of the teaching of informatics (and also didactic transformation based on it) on the opinion (conviction, subjective theory) of the creator of a specific educational concept. This may apply both to his opinion on the teaching style, which according to Fenstermacher and Soltis (2008) can be executive, facilitative or liberal. However, above all, it concerns the creator's opinion on the method of selection of the subject matter (the subjective "theory of subject matter selection"). An expert in didactics for teaching technical subjects G. Duismann (2008) lists here: exemplarism (the selection of a typical content, allowing for the transfer and application of the learned matter in comparable cases), orientation on science and its system (hindered by limits set by the capabilities of pupils), focus on the essential global issues (transportation-disciplinarity, cross curricular relations, key issues) and on orientation of pupil's competences. It is not necessary to specifically demonstrate that there have been several of these subjective theories formulated, however, even this enumeration can be regarded as inspiring for expressing the possible "qualities or benefits" of teaching informatics.

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Global Competencies of Undergraduate Students in Dentistry, Nursing and Engineering Programs

Unchalee SANRATTANA

Faculty of Education

Suwadee AERARUNCHOT

Faculty of Dentistry

Pavee SIRIRUK

Faculty of Engineering

Khon Kaen University

40002 Khon Kaen

Somsamorn RUEANGWORABOON

Nakhon Phanom University

Thailand

Correspondence should be directed to unesar@kku.ac.th

ABSTRACT

Global education is important and global competencies are crucial for higher education students to stay sustainable. This study aimed to determine the global competencies of students in faculties of dentistry, nursing, and engineering hence integrate these identified global competencies into the national framework of higher education qualifications for dentistry, nursing, and engineering curriculum. The research procedure of the developmental process was comprised of two phases. The first phase was a documentary study which focusing on characterize general and professional global competencies. This is followed by the second phase to create future scenarios to develop global competencies of university graduates in the field of dentistry, nursing, and engineering. A multiple case study design was employed covering documentary analysis and focus group interviews methods to collect data. The results revealed that the identified global competencies will be utilized for developing future university graduates. The final future outlooks consist of opportunity and challenge, optimistic, possibility, and pessimistic outlooks.

Keywords: Dentistry; engineering; global competencies; nursing.

INTRODUCTION

Global competencies are defined as the knowledge, skills, and characters necessary to steer and succeed in today's interconnected world. Global competent individuals are life-long learners, have an appreciation for cultural differences, an ability to understand and consider multiple perspectives, critical and comparative thinking skills, problem-solving abilities, and comfort with ambiguity and change, and understand globally significant issues (An NEA policy brief, n.d.). Reimers (September, 2009) defined global competencies as the knowledge and skills that student need to understand and to integrate across disciplines so that they can comprehend global events and create possibilities to address them. Reimers further indicates that global competencies are also the attitudinal and ethical dispositions that make it possible to interact peacefully, respectfully, and productively with fellow human beings from diverse geographies.

The National Education Association (NEA) believes public higher education, being the cornerstone of the nation and is the only avenue through which today's students for tomorrow's workers to attain global competence. According to Ron Moffatt, Director of the San Diego State University International Student Center, "A global-ready graduate is a person with a grasp of global systems, global issues, the dynamics of how things are interrelated and interconnected in the world, and how society can best address global issues." In the United States, a number of groups have produced compelling studies and policy statements explaining the importance of developing global skills. The Partnership for 21st Century Skills (2007), an advocacy coalition of educators and

business, community, and government leaders has identified global awareness as one of the six core skills that all levels of students need to acquire. The identified global skills are information and communication skills, thinking and problem solving skills, interpersonal and self-direction skills; financial, economic, and business literacy, and entrepreneurial and civic literacy. The partnership further defines global awareness as the ability to understand global issues, learn from and work with people from diverse cultures, and understand the cultures of other nations, including the use of non-English languages.

Thai government prioritized the readiness of the country for the co-driving to establish the Association of South East Asian Nations (ASEAN) Community in 2015. Furthermore, the results from the 9th ASEAN Summit in Bali, Indonesia established Mutual Recognition Arrangements (MRAs) on the qualifications of the professional services; and regarding the MRAs, the professionals, who can freely move within the 10 ASEAN countries, are found to be in these seven fields: engineering, nursing, architecture, surveying, accountancy, dentistry, and medicine. Thus, the university with these seven profession curriculum should consider for improvements its curricula in order to provide students with universal competencies thus increasing career opportunities and the readiness for competitions to other countries. On the other hand, Office of the Higher Education Commission (OHEC) has reviewed about the higher education standards since the year 2002 with the following objectives: i) to improve the quality of graduates in order for them to get knowledge, to have abilities, skills, and desirable characteristics as stated in laws of educational reform; ii) to underlie the changes in global society, and iii) to stimulate the higher education institutes to improve the quality of their curriculum and instructions; as well as to improve the education to reach the standards compared with the universal standards.

PROBLEM STATEMENTS

Reimers (September, 2009) stated that good educators should know that the real world is ever more interconnected and interdependent. Therefore, we all share in facing such universal challenges such as climate change, health epidemics, global poverty, global economic recessions and trade imbalances, assaults on human rights, terrorism, political instability, and international conflicts. Although we all share opportunities for global collaboration in such areas like scientific and artistic creation, trade, and international cooperation, these challenges and opportunities define the delineations of our lives, even in their most local dimensions. In spite of growing awareness of the importance of developing global skills, a small number of higher education students around the world have the opportunity to become globally competent.

Thailand higher education institutions are called to prepare their university students are qualitatively different from the industrial world in which public higher education systems were created. Over the last decades numerous reports and policy statements have emphasized the need for new skills for the 21st century. This developed curricular framework for global competence responds to the demands of a changing world differently, recognizing the central role that global interdependence will play in the lives of our university students. Subsequently, the nature of higher education and the practice of certain professions such as engineering, dentistry, and nursing have affected dramatically throughout history. A classical education worked well because clergymen primarily controlled the curriculum and focused on educating engineers, dentists, nurses, and lawyers. The higher education curriculum served to identify members of the educated class. However, the industrial and professional era created a need for new technology and professional fields with a focus on human development and practical training. The emphasis shifted from a cultural education to a curriculum focused on useful knowledge and employment. The change in emphasis created the need for specialization and ultimately increased curricular offerings (Warnick, 2010).

Increasing, the nurses, dentists, and engineers in society carry out civic participation, self-expression, social life, and health unfold in a global scenario. So while Mansilla and Jackson (2011) welcome public commitment to teaching skills such as problem-solving to all the university students, they pointed out that the problems that students can learn about vary in significance, and they emphasized university students' substantive understanding of global import. Thus the approach focuses squarely on nurturing university students' substantive understanding of, and action in, the increasingly complex, diverse, and interdependent world in which they live. Global competent university students will be prepared to further such understanding through inquiry, by recognizing perspectives, communicating with diverse audiences, and acting in competent ways.

Several prominent organizations such as the National Research Council (2007), the Committee for Economic Development (2006), and the Asia Society (2008) have made the case of global education. Concurrently, some teachers and education entrepreneurs have developed a wide range of practices that foster global competency, such as improved foreign language curriculums, programs that promote intercultural competency, and internationally themed faculties, and curriculums. The challenge is not simply figuring out which specific activities contribute to fostering aspects of global competency, but also finding out how to integrate those activities into the regular work of faculties and how to align them with existing curriculum, assessment, and opportunities for lecturer profession development.

LITERATURE REVIEWS

Reimers (September, 2009) had administered a survey to a group of 150 school principals in a seminar ‘The art of leadership’ at the Harvard Graduate School of Education on July 7, 2009 confirmed the limited opportunities in schools for promoting global learning. Reimers revealed that less than one-half of school principals reported that their schools offer opportunities to develop global competencies, with comparable percentages reporting opportunities to infuse global competencies throughout the curriculum or participate in project-based learning. Although there was a slightly higher percentage reported that their schools provide opportunities for foreign language learning to students and teachers, only one in four principals reported opportunities for students and teachers to travel abroad. On top of that, only one in four principals reported adequate opportunities for teacher professional development in global competency, and only one in five reported partnerships with universities or other organizations to support the development of global skills and competencies in their schools. In Reimers’ survey finding shows that the constraints to develop global competency in the respondents’ schools include a lack of agreement on the definition of global competency among teachers. For example, 68 percent reported insufficient agreement, 75 percent stated the fact that this purpose is not a priority for teachers, and 65 percent mentioned insufficient opportunities for students to develop global competency.

Allan and Chisholm (2008) highlighted the importance of global competencies as it applies to engineers and prove that global competence or a strong interest in becoming globally competent has become a clear differentiation in an engineering graduate’s ability to obtain employment, to progress in a career, and to remain viable in the future. Lozano, Sanchez, and Mucino (2001) further supported the above statement by stating that globalization has created challenges for academia to produce graduates who can perform effectively and comfortably in different international career scenarios.

RESEARCH OBJECTIVES

The main aim of this study was to examine the global competencies of the students from the identified three faculties namely Faculty of dentistry, nursing, and engineering of a public university, in Khon Kaen province, Thailand. In addition, researchers sought to develop the future outlooks of developing university graduates with the identified global competencies.

METHOD

Population and samples

Three different expertise and positions of experts that related to dentistry, nursing, and engineering students’ needs of global competencies in Thailand were selected to involve in this study. The three faculties were Faculty of Dentistry, Faculty of Nursing, and Faculty of Engineering.

The Faculty of Dentistry was founded in 1979 as the dental center and is dedicated to the training of competent dentists with research-oriented minds. The training is based on a wide range of contemporary patient care programs with holistic approaches. The most important goal of the faculty is to produce high quality dentists, who will mostly working in the Northeastern regional hospitals. The dental curriculum is specifically designed in order to give the students the most practical settings. The dental academic program allows the students the flexibility to pursue their goals while achieving high standards. Graduate students also have the opportunity to combine their degrees in the basic science and dental specialties to meet their needs.

The Faculty of Nursing was founded in 1971 and was established as the fourth among several faculties in the university. This faculty is recognized as the first Faculty of Nursing in Thailand. It has been ranked one of the top five nursing schools in Thailand for more than three decades. Students in nursing programs can experience quality of nursing education, rich cultures, languages, social lives, and the historic city of Khon Kaen. This faculty has had clear and definite goals as listed: (i) A faculty that produces graduates at different levels in the area of nursing with a standard of quality demanded by society; (ii) The center of professional nursing education at all levels in the Northeastern region of Thailand; (iii) A network of nursing knowledge and innovation in response to the health care needs of individuals and communities at the local, regional, national, and international levels; (iv) The center of knowledge in nursing implementation, development, and in solving health problems in the Northeast.

The Faculty of Engineering is the first engineering faculty to be established outside Bangkok, the capital of Thailand. This faculty has a strong record of achievement. The faculty has successfully produced more than 12,000 graduates with Bachelor and Post-graduate degree. Most of these graduates who have assumed top posts in government and industrial organizations. More than 85% of their graduates find employment within six months after completing their degrees. All their degree programs have been accredited with professional bodies such as the Council of Engineers and other governmental and industrial organizations. This provides their graduates with opportunities and professional memberships. At present, the total number of students stands at 3,661 which is approximately 10 percent of the student body of the entire university.

Research procedure and data analysis

Since the aim of this study was to capture the context of global competencies development in rich detail, the multiple case study design seemed highly appropriate. When the researchers cannot manipulate the relevant behavior and contemporary events are examined, both conditions in this research, case study is the preferred research design (Yin, 1981). Yin (1984) stated that though a multiple case design is complex, it permits induction of rich and reliable models. Qualitative research plays an important role in the investigation of curriculum framework development with integration of global competencies irrespective of the stage of study as the competencies development phenomenon is complex (Conger, 1998). Denzin and Lincoln (2000) claim that qualitative research involves an interpretive and naturalistic approach. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of meanings people bring to them. Morgan and Smircich (1980) have highlighted the suitability of qualitative methods to interpretive contexts, such as those in which global competencies are defined and experienced.

The research procedure was used as a guideline for the study and conducted in two phases. The first phase was mainly organized a document analysis as a form of qualitative research in which documents are interpreted by the researchers to give voice and meaning around an assessment topic as global competencies needed from the related documents. The following are the five steps taken to identify the global competencies:

Step 1: Making a record form for collecting data on global competencies from persons whose jobs are in dentistry, nursing, and engineering. The form is in the forms of paper and electronic media

Step 2: Assessing the record form by having experts and the researchers check for practicability

Step 3: Collecting and recording data, the assessed record form was used to collect data

Step 4: Synthesizing the data, the collected data were processed and categorized in accordance with the issues stipulated in the record form

Step 5: Editing and publishing the data, the synthesized data were edited, published, and sent to the experts for reading, analyzing, and specifying the competencies for persons whose jobs are in dentistry, nursing, and engineering

Data was analyzed by incorporating coding content into themes. A rubric was used to grade or score a document. Only public records were investigated. The public records include official, ongoing records of an organization's

activities. Examples include student transcripts, mission statements, annual reports, policy manuals, student handbooks, strategic plans, and syllabus.

The focus group interviews were conducted at Phase 2 with informants who have experience and expertise in these three professions. This qualitative method of assessment was chosen because it encourages a free flow of ideas. It is typically led by one moderator but can sometimes be assisted by a scribe or other team members. For assessment purposes, there were four focus groups consisted of not less than 21 experts who had distributed into four different positions: (i) deans or former deans of the three respective faculties; (ii) professors or heads of departments of the three respective faculties; (iii) experts in the three respective profession associations, and (iv) practitioners from the three respective expertise such as dentists, nurses, and engineers who are currently being employed by potential employers of the university graduates from the three respective fields.

There were three cycles of focus group interviews conducted which consisted of 8 to 12 pre-screened informants and can last anywhere from 1 to 2 hours. Rather than simply analyzing numbers and statistics, a focus group allow researchers to observe and take note of visual aspects such as respondents' body language and facial expressions as they are given topics to discuss (Administration methods, 2010). An interview summary technique called 'cumulative summarize' was applied to conclude those important issues obtained from the focus group interview sessions. The collected data was analyzed and indexed in accordance with the conceptual framework. Researchers then examined this information independently of the initial job role it pertained to, to determine the shared competencies such as tasks, skills, and knowledge required to support the research endeavor as a whole. Therefore, the research process and the team undertaking it can be envisioned as a continuum for the definition of cross-cutting 'competency areas'. The data-driven, evidence-based framework resulting from the focus group findings was then appraised by a panel of 21 experts, followed by refined accordingly.

RESULTS

Results are presented according to the aim as mentioned above. The results demonstrate in two parts and organized according to qualitative methods. The initial results highlight the identified global competencies derived from the documentary study. This is followed by the results of feedback and validation from the experts' comments and suggestions. Finally, four future outlooks of developing the identified global competencies was created with specific features.

Identifying global competencies needed from documentary study and experts' validations

The following findings were interpreted from the documentary data. The identified global competencies are categorized into three different professions namely dentistry, nursing, and engineering.

(i) Global competencies for dentistry students:

Majority of the experts agreed that global competencies of a dentist should have these nine elements:

- Moral and ethical competency
- Personal efficiency competency
- Teamwork competency
- Technology competency
- Language and communication competency
- Personality competency
- Leadership and management competency
- Knowledge competency, and
- Public awareness competency

(ii) Global competencies for nursing students:

Informants agreed that global competencies of a nurse must have these 10 elements. Element 1 to 3 is as important as one to the other:

- Communication competency
- Thai identity competency
- Management competency

- Initiative learner competency
 - Knowledge competency
 - Technology competency
 - Service-minded competency
 - Moral, ethical, and public awareness competency
 - Cultural competency, and
 - Teamwork and leadership competency.
- (iii) Global competencies for engineering students

Most of the informants agreed that global competencies of an engineer should have these nine elements:

- Personality competency
- Teamwork competency
- Public awareness competency
- Personal efficiency competency
- Moral and ethical competency
- Leadership and management competency
- Knowledge competency
- Technology competency, and
- Language and communication competency

Each identified global competency elements were analyzed according to the set theme, researchers concluded the following themes as the global competencies needed by dentistry, nursing, and engineering students:

- i. Exhibit a global mindset
Exhibit a global mindset competency is defined by the informants as the ability of individuals to establish self-awareness, understand cultural norms and expectations, and realize that they are part of a global world. Generally, students should have an ability to exhibit a global mindset includes an understanding and avoidance of ethnocentrism, the idea that one's own culture is superior to all other cultures.
- ii. Appreciate and understand different cultures
Appreciate and understand different cultures is identified as a developed awareness, appreciation, and understanding of, as well as adaptability to diverse cultures, perceptions, and approaches with an ability to interact with people from other cultures and countries. It is essential to new and different cultures as described by some informants as *"...the system of shared beliefs, values, customs, behaviors, and artifacts that the members of society use to cope with their world and with one to another, and that are transmitted from generation to generation through learning."*
- iii. Demonstrate world and local knowledge
Demonstrate world and local knowledge refers as an ability to understand the major currents of global change and its implications and demonstrate knowledge within a global and comparative context. A broad knowledge of the world and local areas can improve each dentist or nurse or engineer's ability to better understand the implications of their work.
- iv. Communicate cross-culturally
Communicate cross-culturally competency is an ability to interact with and understand people from different cultures and recognize the importance of both appropriate verbal and nonverbal communication including the ability to communicate and interact in a globally interdependent world, according to the informants. Informants agreed that communication in general is difficult when communicating across cultures, miscommunication may occur that could lead to conflict. For example, in some cultures like Thai just because someone says yes does not mean they agree with what you are saying; but it only indicates that they are listening to you. The same as nonverbal behavior arises from our common culture and interpretation of these behaviors is also often misunderstood across cultures. What is considered normal or effective in one culture may be considered inappropriate in another.
- v. Competitive skills
According to the informants, competitive skills element is the ability to compete globally entails the acquisition of extensive knowledge of international issues. To be able to compete, students need high-level thinking skills that enhance creativity and innovation. Students who gain a thorough understanding of the economic, social, and

technological changes taking place across the globe enhance their ability to compete in the worldwide marketplace.

Development of higher education curricular future outlooks with integration global competencies

The developed global competencies curricular future outlooks distinguishes between the following three types of competencies: (i) the theory, or knowledge-based competency, which reflects a level of theoretical understanding of a particular knowledge-based task, and which can be acquired through learning about a field; (ii) the capability, or task-based competency, which necessitates the application of technical or practical knowledge to the performance of a specific task, and which is better learnt by doing, and (iii) the trait, or skill-based competency, which corresponds to the demonstration of appropriate behaviors in various situations, and which is better developed by experiencing and reflecting on the experience.

The developed global competencies curricular future outlooks further assessed with triangulation. The concept of global competence may consider a quality of the practitioner. To embrace aspects of performance and professionalism, the assessment of which is only vaguely valid and reliable. This overall lack of clarity in validity and reliability in the assessment of skill has led several commentators to discuss the importance of making these assessment in more than one way (Wilkinson, 2007; Redfern, Norman, Calman, Watson, and Murrells, 2002), and Stuart, 2003). This process of assessment of the global competencies of the higher education students from more than one position has been considered equivalent to the process of triangulation in social science research.

Triangulation for assessment the developed curricular framework is needed to give confidence in the result if different methods are being used to examine the same phenomenon. Therefore, if the process of triangulation is to be useful in global competencies assessment, it requires the correct combination of assessment methods. These methods are clearly measuring the same quality and, therefore, have a high degree of construct, predictive, and content validity (Campbell & Fiske, 1959). This concept is neither new nor controversial, the employment of multiple modes of assessment is fundamental to good curriculum design and it is this that will lead authority and confidence to assessment methodologies. After researchers conducted a triangulation questionnaire using 5-points Likert scale, ranged from 'least important or least likely to occur' to 'most important or most likely to occur'.

The synthesized scenarios based on the above findings are four perspectives namely the opportunity and challenge, optimistic scenario, most possible scenario, and pessimistic realistic scenario.

The synthesized scenarios were presented in four perspectives based on the above findings namely the opportunity and challenge, optimistic scenario, most possible scenario, and pessimistic realistic scenario.

(i) The opportunity and challenge

The aggregation of countries in the world would lead to movements of workforce and students for trades, investments, reduction of production costs, education, and occupations. Therefore, qualifications need to be defined for comparison and exchange. In addition to the movements, English language is the most frequently used language in global interaction. This makes humans the 'center of development' and also makes 'balance of development' in every dimension in order to prepare people, society, and economic system of the country for being able to adjust itself in order to be able to face changes appropriately in the world society. In Thailand statistical data in year 2015 showed that a total of 41,219 elementary school Year 1 to 6 students studying in international schools. The number of those students is rising around 10 percent each year. When these students enroll in a university, they will enroll in an international program or a standard curriculum which provides instructions in English; or go to study in foreign countries. Universities should be prepared for international programs or standard curricula to cater for those international students.

(ii) Optimistic scenario

From the opportunity and challenge mentioned above, universities have to be ready to assist those students who have international and professional competencies by applying talent management principles thus develop future quality human capital. In addition, a professional curricula has to create in which graduates will receive the professional license after they attend the provided programs using English as the medium of instruction, and with standards in accordance with international professional standards. Moreover, they should provide instructions

and evaluations in English in order to enable those graduates to further their studies in foreign countries as well as to be accepted and qualified to get an international professional license.

(iii) Most possible scenario

The potentiality of universities to conduct international curriculum is necessary to have collaborations with other countries. Instructor must possess good command of English and must have the earnestness to improve students' capabilities. Those research universities in Thailand have to speed up in developing international curricular program to enable their graduates obtain sufficient global competencies.

(iv) Pessimistic realistic scenario

Lack of support in creating collaboration with foreign educational institutions including alien and domestic companies or network hospitals are able to provide learning sources for students since 'learning by doing' with the atmosphere in which discussions and learning with problem-solving method have to implement to meet the authentic occurrence of professions. This is to provide students with meaningful learning, learning with inspiration, quality value, and also provide timely feedback to provide sufficient opportunities for students to develop.

DISCUSSION

Finding indicates that one of the identified global competencies of dentistry, nursing, and engineering students is exhibit global mindset. This implies as an ability to exhibit a global mindset is a state of mind that provides a positive disposition to be successful in a global environment and found to be in line with the past findings namely Caligiuri and Santo (2001), Georgia Institute of Technology (2005), Hunter (2004), Parkinson, Magleby and Harb (2009) and Reimers' (2008) findings. Besides, the second identified global competency element is appreciate and understand different cultures was found to be in accordance with Brustein (2007), Galloway (2008), Mariasingam, Smith, and Courter (2008), Parkinson et al. (2009), and Renganathan et al.'s (2008) findings. The third identified global competency element as demonstrate world and local knowledge was found in parallel with the past research findings (Galloway, 2008; Renganathan et al., 2008). The fourth identified global competency is communicate cross-culturally also includes the ability to communicate across time and space since we live in a technological world where it is common for individuals to interact across many different time zones. Thus this global competency was supported by the past researcher like Allan and Chisholm (2008), Brustein (2007), Doerry, Doerry, and Bero (2003), and Mariasingam et al. (2008). The competitive skills as abilities of a professional (dentist, nurse or engineer) to collaborate and contribute professionally in multicultural work environments either in person or in geographically distributed teams with persons of different cultures and linguistic background where diverse ways of thinking, being, and doing are the basis of practice. This finding is found to be in line with the research results of Allan and Chisholm (2008), Mariasingam et al. (2008), and Parkinson et al. (2009).

The developed global competencies higher education curricular future outlooks have been successfully be a unifying framework which makes use of pre-existing, more role-specific or setting-specific framework, as well as of real-life data. These future outlooks can be applicable to higher education institutions in Thailand as it has been successfully appraised by multiple experts. In addition, stakeholders have particularly emphasized the need for such a global competencies scheme. In light of this support, these future outlooks are suggested for future researchers to align along its tools to enable refining this resource in the future, based on users' experience of applying it in context. The ultimate finding of this study is laying the ground for future work in the field of global competency capacity to strengthening the nation human capital.

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Google Slide As a Tool to Promote Active Learning Strategies

Dawood Al HAMDANI

Sohar University

dalhamdani@gmail.com

ABSTRACT

The study aimed to design a technology-rich learning environment where the Google Slides application was a tool to promote active learning skills (higher ordered thinking skills) and to explore the students' practice of using these skills during the study. The sample of the study was 64 teacher-preparation students and 37 postgraduate students from Sohar University registered in 2016-2017. The researcher designed a three-Likert scale questionnaire to measure the participants' experience in the technology-rich learning environment on three categories: active learning skills, cooperative skills and using Google Slides skills. Cronbach's alpha was used to test the internal consistency of each category as follows: 0.7735 • 0.7751 • 0.7546. The result of the study showed that the participants had a good practice of using active learning skills, cooperative skills and gained skills of using Google Slide application. Also, the result showed there was not a significant difference between the participants' studying levels ($p=0.278$) in active learning category, but there were significant differences in using cooperative learning skills ($p=0.009$) and using Google Slide for master students ($p=0.028$). The proposed technology-rich learning environment in this study can be used as a model for integrating educational technologies in students' learning in the Basic Education schools in Oman.

Key words: Active learning, Google slide, Learning strategies

INTRODUCTION

For several authors, the educational potential of the new technology is best realised in the context of a constructivist approach. Strommen and Lincoln (1992) state, "The key to success lies in finding the appropriate points for integrating technology into a new pedagogical practice (constructivism) so that it supports the deeper, more reflective self-directed activity children must use if they are to be competent adults in the future." Ehrich, McCreary, Ramsey, Reaux, & Rowland (1998) contend that technology integration can effectively support constructivism. Studies such as Baker, Gearhart and Herman (1994) and Sivin-Kachala (1998) showed the effectiveness of technology in promoting problem-solving and high-order and critical thinking when used in constructivist context.

Active learning Model with Technology:

Social constructivism stands somewhere between cognitive constructivism and radical constructivism; it embraces the view that knowledge is the result of social interaction and language usage, and thus is a shared, rather than an individual, experience. Therefore, learning is viewed as a result of social interaction. This can be explained by the notion of the Zone of Proximal Development (ZPD) which is promoted by scaffolding. Vygotsky (1987) maintains that "what the child is able to do in collaboration today he will be able to do independently tomorrow". The Zone of Proximal Development is a means that potentially maximizes the potential for enriching intellectual performance.

According to this view, an individual gains understanding by constructing new knowledge or transforming old knowledge into new, and this process is facilitated through peer interaction during which differing individual perceptions arise and are reconciled (King, 1990).

For the process of active knowledge construction, as discussed above, to take place, it requires a learning setting or environment that supports it. Adey and Shayer (1994) outline some principles that can be applied in designing instruction to help learners gain and develop knowledge: the learning environment should support learners' activities, social interaction which permits learners' interaction with their peers and with teachers and if possible with others, and encouragement of cognitive conflict through, for example, critical exploration.

For effective constructivist instruction, there must be an appropriate learning setting that promotes constructivism-inspired activities and learning tasks. Constructivism is learner-centred. It "proposes that learning environments should support multiple perspectives or interpretations of reality, knowledge construction, context-rich, experience-based

activities" (Jonassen, 1991, p.28). Bruner (1990), for example, suggested the importance of developing a learning environment where students authentically engage in knowledge construction.

According to Wilson (1995), at minimum, a learning environment contains: the learner, and a setting or "space" wherein the learner acts, using tools and devices, collecting and interpreting information, perhaps interacting with others (ibid: p.26). Therefore, the learning environment is not to be confined within one place such as the classroom; it should go beyond that, to include all places where learners are given opportunities to acquire knowledge from various resources in their world. According to Hill and Hannafin (2001) resources are media, people, places or ideas that have the potential to support learning.

Moreover, Wilson (1995) argues that compared with a traditional classroom, a constructivist learning environment places more responsibility on students for their own learning. This type of responsibility can cause some children to feel frustrated and uncomfortable, particularly if they are accustomed to having a teacher who "transmits" information to them.

Unlike traditional "top-down" teaching, Vygotsky (1978) would advocate a bottom-up teaching approach where the teacher facilitates, as opposed to directs, what and how students learn concepts both in and out of the classroom. In the learning setting, teachers should contribute a major role in establishing the learning environment for their students.

Collaborative learning

Collaboration is an important tenet of constructivist teaching, and the value, and the importance of collaboration in students' learning have been appraised in many studies. The past two decades have witnessed hundreds of studies investigating the effectiveness of collaborative learning compared with traditional teaching methods. Most of these studies reveal the positive impact of collaborative learning on students' achievement, motivation, social behaviour and attitudes toward school, toward learning and toward their group-mates (Johnson and Johnson, 1995).

As an individual gains experience in a social situation, this experience may prove an individual's knowledge structures or it may challenge those structures. If there is contradiction or confusion, then the individual must accommodate this contradiction in order to maintain either an accurate model of reality or a coherent personal or social model of reality (Wadsworth, 1989, p.157). Moreover, learners are supposed to acquire a newer and better insight by confrontations of insights via a cognitive conflict. Accordingly, the acquisition of knowledge is regarded as a confrontation of opinions, as well as a process of cooperation and co-construction of knowledge.

Cooperative learning may be seen as a unique setting that allows and encourages learners to construct "correct" knowledge and understanding. When learners construct their knowledge individually, they might have incorrect interpretations or understanding of this knowledge. According to Whipple (1987), learning occurs as individuals exercise, verify, solidify, and improve their models through discussion and sharing of information. This emphasises the value of group work since, in a small group, they can share their own constructed knowledge and as they do this, they correct and guide their knowledge construction.

Bruner views the cooperative learning methods improve problem-solving strategies because learners are confronted with different interpretations of the given situation. The idea of shared meanings can be elicited from Bruner's (1990, p.13) statement that "Our culturally adapted way of life is dependent upon shared meanings and shared modes of discourse for negotiating differences in meaning and interpretation." Thus, learning in a constructivist context is collaborative and necessarily depends on sharing of knowledge and understanding among learners.

Technology as a tool

Jonassen and Reeves (1996) state that technologies as tools are essential components of a learning environment in which learners are required to think harder about the subject matter domain being studied and to activate their thoughts about it than would be impossible without these tools.

Technology use in a constructivist learning environment can take two forms: as a resource of information through which students use technology to find and research for information and as a learning tool through which students think about their learning and engage in higher order thinking.

Google slides (Why):

Google Slides is free web- based software offered by Google Company with its drive services; the software is also available for free for Android and iOS handsets. The software allows users to create, edit and share presentations asynchronously and synchronously. That is to say, it promotes document collaboration which refers to more than one person co-authoring a document.

STUDY DESIGN AND INSTRUMENTATION

The purpose of the Study

The study evaluates the participants' involvement in small groups, in sharing ideas and thought, in correcting mistakes through the use of Google Slide application accessed via students' mobiles. Also it compares postgraduate and Teacher-preparation students' learning experience in this technology-rich active learning environment.

Research Questions:

As mentioned elsewhere the purpose the study is to measure students' learning experience in this technology-rich active learning environment. Therefore, the study aimed to answer the following question:

1. How do the students in the study see the learning environments using Google slide as a tool?
2. Is there any difference in the experience between the teacher preparation students and master students in the study?

Eight students voluntarily participated in drafting items describing the learning environment that they experience during the course. They came up with 28 items which shortlisted into 21 related items. Then the students categorized these items into three categories: (1) thinking skills (of active learning) with 7 items, (2) cooperative work with 7 items and (3) experience with Slides application with 7 items. The following table shows the alpha for each category:

Table 1
Alpha Test

	Category	Alpha Test
1	Active learning	0.7735
2	Cooperative work	0.7751
3	Experience with Slides application	0.7546

The questionnaire is to evaluate the students' experience in the learning environment consisted of the twenty one items, and was put online through Google Form service with the following link: <http://goo.gl/forms/IXNB7R376c>. The questionnaire link was sent to students on last day of the course via WhatsApp Messenger. Of 121 students, 101 students: 64students preparation and 37 master students completed the questionnaire online.

Participants

The study involved the teacher preparation students registered in the Instruction Technology course EDUC099 in the semester one of the academic year 2016-2017 and the master students registered in Reading for English course in the semester one of the academic year 2016-2017, at Sohar University.

Procedures

The students were divided into groups of four students to five students. The students were instructed to install Google Slides application on their devices/mobiles.

In each session, after introducing the topic of the session, the researcher:

1. Gave task for each group
2. Created a Slides application file for the topic on Google Drive.
3. Sent the file link to the students via WhatsApp.
4. Allowed students discussion and knowledge production using Google Slide.
5. The students continued with their after class.

While the students engaged in knowledge construction and preparing the presentation, the researcher guided them and provided with some feedback on the learning materials, synchronously.

Towards the end of each session, the instructor presented the topic final presentation, produced collectively, to the class and the students were allowed to comment on the presentation, and the instructor sent the link to the students to download the presentation so each has his/her own copy of the presentation.

Results, Discussion and Conclusion

Students' experience with the learning environment

The result shows the experienced students were more enjoyment in the learning activities which supporting active and cooperative learning using Google Slide application.

Active learning practices

This section surveyed the students' experience of higher order thinking skills. Overall, respondents were overwhelmingly used higher order thinking skills (means: 2.8). For example, table shows that the learning environment allowed them add information/thought and skills is (the average mean score is 2.91 and SD: 0.35) and promoted thoughts and correct information (the average mean score is 2.85 and SD: 0.38).

Table 2

Active learning practices

N	Items	No.	Mean	SD
1	Allows adding information/thoughts and new skills via the use of learning technologies	101	2.91	0.35
2	Promotes thoughts and correct information.	101	2.85	0.38
3	Advanced, innovative and active environment to promote mental processes	101	2.82	0.41
4	Allows involving learner with multiple skills for better performance.	101	2.79	0.48
5	Provides an opportunity for all to participate in decision-making and to take responsibility for own learning.	101	2.78	0.46
6	Increases the learner productivity and escaping the usual teaching routine.	101	2.78	0.5
7	Involves students in selecting and preparing course materials and not a recipient.	101	2.7	0.52
Total			2.8	

Cooperative Work/activities

Table shows that shows the means of cooperative work which gives an indication of a good practice and use cooperative learning strategy during students' learning is (the average mean score is 2.76). The students' realization of the new learning environment is diffident than the traditional classroom; the average mean score is 2.92, and it highly supports exchange of ideas (the average mean score means: 2.89).

Table 3

The learning Environment supports Cooperative Work

No	Items	No.	Mean	SD
1	It is out of the traditional system to the collaborative work system.	101	2.92	0.31
2	Supports exchange of ideas among colleagues.	101	2.89	0.34
3	Develops students' collaborative skills such negation, asking for help and encourage each other.	101	2.84	0.44
4	It is an environment for freedom of stating opinion and thinking.	101	2.78	0.46
5	It is an environment freedom in exchange of ideas with each other.	101	2.77	0.47
6	Allows discussion the information with others and critical thinking.	101	2.75	0.52
7	There was a collaborative environment during working on tasks.	101	2.69	0.54
Total means			2.80	

Students' experience with Google Slide

Table shows student's experience with Google Slide. It is a good experience with the application the average mean score is 2.64. The students evaluated the application as flexible (the average mean score is 2.79 and made the learning efficient (the average mean score is 2.71)

Table 4

Experience with Slides Application

No	Items	No.	Mean	SD
1	There is flexibility in time and effort.	101	2.79	0.454
2	Raising the efficiency of the learner.	101	2.71	0.497
3	The program does not cause concern to users is automatically saves any circumstances work centre and advanced renewable and active process in the upgrade process mental	101	2.68	0.528
4	There is good communication and fast convergence between the members of the groups to improve performance.	101	2.65	0.607
5	Achieved a balance between student's needs and student's productivity	101	2.6	0.584
6	Helped to resolve some of the problems faced the student	101	2.56	0.59
7	Quickness in the construction of knowledge.	101	2.52	0.558
Total			2.64	

Postgraduate and Teacher-preparation students' learning experience

Table 5 compares graduate and Teacher-preparation experience with the three categories of the learning environment. It seems that graduate students enjoyed more the acting learning involvement and use of Google Slide more than Teacher-preparation students.

Table 5

Postgraduate and Teacher-preparation students' learning experience

Categories	Level	No	Means
Active learning Environment	Teacher-preparation	64	2.80
	Graduate	37	2.83
Cooperative Work	Teacher-preparation	64	2.76
	Graduate	37	2.90
Experience with Google Slide	Teacher-preparation	64	2.60
	Graduate	37	2.80

Table 6 shows T. test for the three categories and students (graduate and Teacher-preparation) experience. P value is less than 0.05 for cooperative category and experience with Google slide for graduate students (see the average mean scores in Table 5).

Table 6

Independent Samples Test

Categories	F	Sig
Active learning Environment	1.191	0.278
Cooperative Work	7.097	0.009
Experience with Google Slide	4.968	0.028

The overall goal of this study was to design a technology-rich learning environment and evaluate the participants' learning experience in this environment.

It seems that the participants in the study had a good experience and practices of using active learning skills such as constructing new knowledge and thoughts, correcting their own understanding and being responsible for their learning by selecting appropriate learning materials for their tasks. Also, the participants had good practices of cooperative learning skills such as exchanging information, negotiating understanding and stating opinions and thinking. In addition, the participants found that Google Slides allowed them good communication with each other, flexibility in time and efforts and helped them to construct knowledge fast.

The survey questionnaires showed that there was no a significant difference in between the participants' level of study in practicing active learning skills; whereas, there was a significant difference in cooperative skills and use of Google Slides for the master students.

The researcher argues that the master students are teachers doing their master program in education at Sohar University; those teachers are familiar with practicing cooperative learning strategies and enthusiastic in using technologies in their teaching at Basic Education schools.

The design of integrating technology into active learning strategies in this study can be used as a model to using technologies in supporting students' learning to promote higher-order thinking skills.

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Graphical Solution of Linear Programming Problems in MS Excel

Anna NEBESOVÁ

University of Economics in Prague, Czech Republic
anna.nebesova@seznam.cz

Jana SEKNIČKOVÁ

University of Economics in Prague, Czech Republic
jana.seknickova@vse.cz

ABSTRACT

When students begin to study linear programming or mathematical modelling in general, graphical methods are often used for illustration and better understanding. The expansion of computer technology enables to use specialized software to easily verify the correctness of results or to better understand the principles. Unfortunately, most of the software is beyond students' financial possibilities which is one of the main reasons for choosing Microsoft Excel for creating an application for graphical solution of linear programming problems. Most universities allow students to use special student's licence for Microsoft Office which includes Microsoft Excel as well. This paper introduces newly created application for graphical solution of linear programming problems. The software was made in Visual Basic for Application (VBA) and should help students to better understand the basis of linear programming. The application is easy to manipulate and the outputs are very straightforward. It shows not only the graphical solution, but also computes the optimal solution with its objective function value, set of feasible solutions and can be used for simple post-optimal analysis.

INTRODUCTION

Linear programming is one of the most used and theoretically most elaborated branches of operational research (Lagova, Jablonsky, 2009). If the problem does not have more than three variables the solution can be found graphically. In reality this method is not very useful because usually the problem can have thousands of variables and constraints. But in education it can be used as a helpful tool for understanding the basis of linear programming.

With the recent expansion of computer technology students and teachers all around the world create software to make teaching easier. Technical subjects with its complexity and abstraction are for students the most difficult subjects, therefore it is not surprising most of the newly created educational software is in mathematics, physics and other technical fields. How useful and effective the software can be, describes a study of Güven and Kosa (2008) where the effect of dynamic geometry software (DGS) Cabri 3D on student mathematics teachers' spatial skills was examined. The findings demonstrated that computer supported activities contributed to development student mathematics teachers' spatial skills. Another similar study (Cataloglu, 2006) focused on teaching vector algebra using free open source software (FOSS). Visualization of vector and related concepts by FOSS simulations helped students to understand them well and contributed to shorten the time needed to learn these concepts. An interesting multicriteria decision support system called IZAR was developed also at University of Economics in Prague in 2006 (Kalcevova, Fiala, 2006). IZAR is non-commercial software set for students of decision theory that helps the user with choosing the method most suitable for available information about the problem. Furthermore, the uniqueness of this program lies in its compatibility with the Linux operating system as described in (Boksteflova, Kalcevova, 2010). Not every software brings only advantages and makes teaching and learning easier as shown in the study by Baz and Tekdal (2014). They evaluated Computer Based Foreign Language Learning software called Dynamic Education (DYNED) by teachers and students. The findings showed that the software had partly sufficient qualities from the point of teachers; but students had indecisive views about the software.

This paper introduces an application for graphical solution of linear programming problems implemented in Microsoft Excel environment. It is developed using Visual Basic for Application (VBA). The program is made as a bachelor thesis and therefore it contains flaws and imperfections. They will be fixed and the program will be extended in pursuance of dissertation thesis. MS Excel was chosen for its wide use among students and availability since the students' licenses are for free. In the Czech Republic, another software for graphical

solution and post-optimal analysis was made in Matlab (Komzik, 2015) but this software does not provide free students' licenses and its handling is also quite complicated.

Linear programming problems (LPs) search for optimal solution (structure of production, number of products) with maximal or minimal value of objective function (for example minimal costs or maximal profit) with respect to a set of conditions (for example constraints of resources and materials).

The application helps students to better understand the basis of linear programming using graphical method. It enables to easily and quickly show the graphical solution with all the important information such as the optimal solution, objective function and its optimal value, set of feasible solutions and constraints. It also computes feasible solutions with their objective function value and all intersections. This program also informs the user if the solution is not found or is more than one. In the following sections, the principles and functionality will be described and simple example will be used to show the straight-forward and user-friendly interface.

HANDLING OF THE APPLICATION

The best way to show the handling is via a simple example. Let this be a resource allocation problem (Lagova, Jablonsky, 2009): A company XY produces two types of teas: *Golden tea* and *Garnet*. For producing them the company uses three different ingredients: Chinese tea, Indian tea and Ceylon tea. In the current period, the company possesses of 5 tons of Chinese, 8 tons of Indian and 3.6 tons of Ceylon tea. When producing the mixtures, the technological processes must be observed which determine the proportion of components in the teas. Table 1 contains the composition of both mixtures (in percentage):

Component	Composition of mixtures (%)		Capacity (kg)
	<i>Golden tea</i>	<i>Garnet</i>	
Chinese tea	50	20	5 000
Indian tea	50	50	8 000
Ceylon tea	-	30	3 600

Table 1: Composition of mixtures

The profit for a ton of *Golden tea* is 30 000 CZK and for a ton of *Garnet* 24 000 CZK. The goal is to maximize the total profit.

The mathematical model of this problem is following:

Maximize

$$z = 30x_1 + 24x_2,$$

subject to

$$0.5x_1 + 0.2x_2 \leq 5000,$$

$$0.5x_1 + 0.5x_2 \leq 8000,$$

$$0.3x_2 \leq 3600,$$

$$x_1, x_2 \geq 0,$$

where x_1 stands for amount of *Golden tea* (in kg) and x_2 for amount of *Garnet* (also in kg). Prices in the objective function z were transformed so that they correspond with the variables x_1 and x_2 .

Since the application is in MS Excel, there is no need to install anything. What is needed, however, is to enable macros otherwise the application will not work. After it opens, the "Welcome Page" sheet appears containing several buttons like "About", "Exit", etc. To start modelling a new model pressing "Model" button is required which will send the user to another sheet as shown in Figure 1.

Figure 1: Sheet "Model"

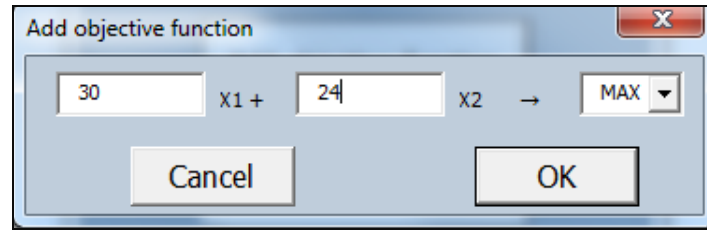
For inserting the data, the user has two options. He can use the “Menu” which will not allow him/her to incorrectly enter the data, or to insert the data directly in the table highlighted in Figure 6. The “Menu” (Figure 2) offers the user to start a new model by pressing “New model” button, to add new constraints or to edit the objective function in the actual model by pressing “Proceed with the model” or to see examples by pressing “Examples” button.

Figure 2: Menu

Figure 3: New model menu

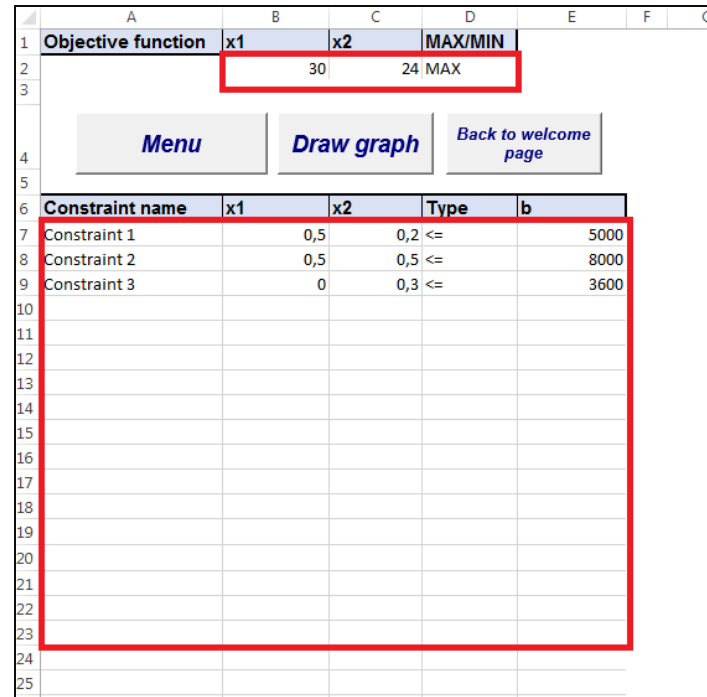
After pressing the “New model” button, the user is notified that the actual model will be deleted. Pressing “OK” will display another menu as in Figure 3. The user can choose whether to start with constraints or with objective function. Adding objective function is shown in Figure 5, example of the first constraint from the model above is in Figure 4. If the user wants to change already inputted data (for a mistake etc.), he can simply close all windows opened or to press “Edit the model” button (which will close the opened windows automatically). This will enable to change data in the table, highlighted in Figure 6.

Figure 4: Adding new constraint



A dialog box titled "Add objective function" with a close button (X) in the top right corner. It contains three input fields: the first has "30", the second has "24", and the third has "MAX" with a dropdown arrow. Between the first and second fields is "x1 +", and between the second and third is "x2 →". Below the input fields are two buttons: "Cancel" and "OK".

Figure 5: Adding objective function



A spreadsheet interface for editing a linear programming model. The top section shows the objective function: "Objective function" with columns for "x1", "x2", and "MAX/MIN". The values "30" and "24" are entered under "x1" and "x2" respectively, and "MAX" is in the "MAX/MIN" column. Below this are three buttons: "Menu", "Draw graph", and "Back to welcome page". The bottom section is a table for constraints:

Constraint name	x1	x2	Type	b
Constraint 1	0,5	0,2	<=	5000
Constraint 2	0,5	0,5	<=	8000
Constraint 3	0	0,3	<=	3600

Figure 6: Editing the model

While editing model user can change values, type of constraints or objective function and delete constraints. There the user should be cautious because the program will stop reading the input data when it reaches an empty line. When a constraint in the middle is deleted, constraints under will not be loaded. A quick solution can be deleting the empty cells or simply moving the bottom constraints upwards. The editing mode can be used as another way how to insert data, as mentioned above. However, it is very important to preserve the right syntax otherwise the data will not be loaded and the error statement will show up.

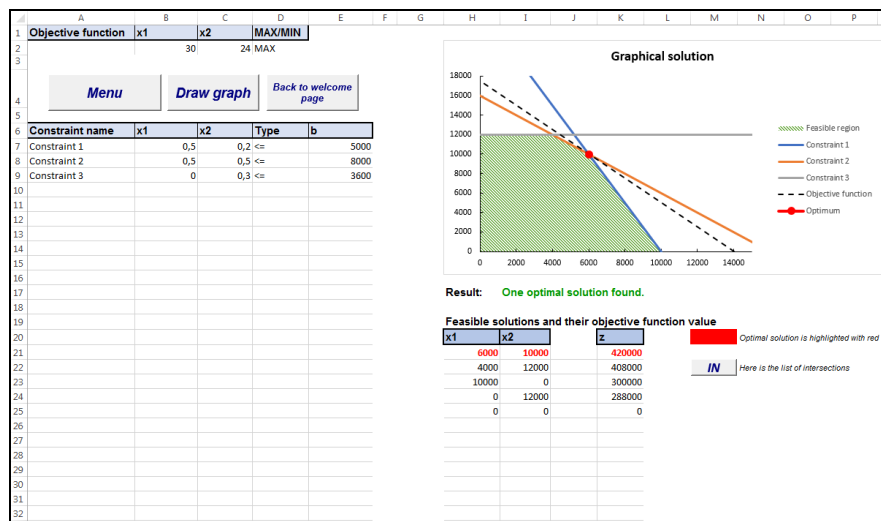


Figure 7: Program output

After inserting the data, “Draw graph” button in the “New model menu” or right in the sheet can be pressed. The output is shown in the Figure 7 and will show up in the same sheet. In the upper right corner, the graph will appear. It contains all the necessary information needed. The feasible region is the hatched green area as labelled in the legend. With the red the optimal solution is highlighted. Also, the objective function is distinguished from the constraints. Under the graph the result quote is displayed so that the type of solution is clear (for above-mentioned example green quote One optimal solution found). In the list of basic feasible solutions underneath it the optimal solution is highlighted with red and always on the top. Basic feasible solutions are sorted by their objective function value – in ascending order (for minimization LP) or in descending order (maximization LP). Next to the basic feasible solutions the “IN” button is positioned which would display another sheet as shown in Figure 8 where all the intersections (i.e. basic solutions) are listed. Their different position is intentional, not always is the user interested in the intersections. This enables to display them only when needed.

A

B

C

D

E

F

G

H

I

J

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

List of intersections

Back

x1	x2
0	0
0	12000
0	16000
0	25000
4000	12000
5200	12000
6000	10000
10000	0
16000	0

Feasible solutions are highlighted with red

Figure 8: List of intersections

The application also works for simple post-optimal analysis. After the user changes values in the model in the editing mode, he can again press “Draw graph” and a new graph will show up on the same place as the previous one. In the future, there may be implemented other sophisticated functions right for the post-optimal analysis, but for now it was not the priority.

PRINCIPLES AND FUNCTIONALITY

The key problem when developing the application was to construct the graph so that it would content all the necessary information but primary the feasible region. Whole solution is quite complex but the principle was inspired by Jon Peltier who explains on his website (Peltier, 2017) how to draw an area between two lines or underneath one in MS Excel charts. He uses a combination of *Stacked Areas* on the secondary axes to fill the space between lines which are put on the primary axes. In the application, a similar principle is used. To achieve all possible shapes of feasible region one of the *Stacked Areas* is drawn on the bottom and the other one above it. Therefore values of the upper *Area* are add to values of the bottom *Area*. The bottom *Area* is then made invisible. For better understanding, Figure 9 shows the final graph – the bottom *Area* is invisible. Figure 10 displays the bottom *Area* highlighted with blue.

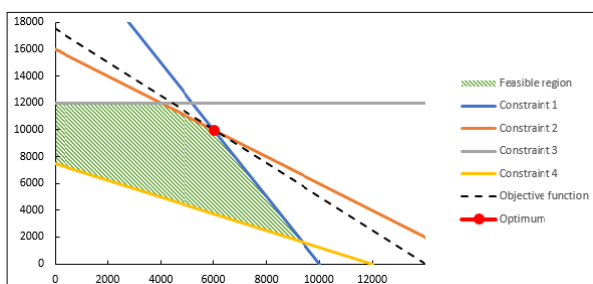


Figure 9: Invisible bottom Stacked Area

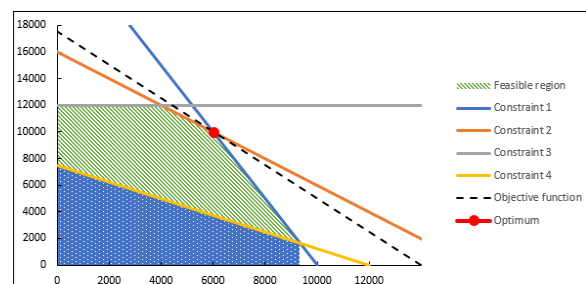


Figure 10: Visible bottom Stacked Area

Optimal solution is found in several steps: at first all the basic solutions are computed from intersections of all pairs of constraints. In the second phase only the intersections that comply all the constraints in the model are chosen to be feasible solutions (specifically basic feasible solutions). From them the optimal solution is computed according to the *Fundamental theorem of linear programming*. That means that the objective function value for all feasible solutions is computed and the one (or more) with the maximal/minimal value becomes the optimal solution. The simplex algorithm was considered but since the amount of feasible solutions is not so big and because they need to be computed for the graph anyway, using of brute force was intuitive.

As mentioned above, the application was developed in VBA. It was essential to write an algorithm that would solve every possible linear programming problem, no matter what type of solution the problem has or how shaped the feasible region is. Therefore the whole program consists of several modules, classes and UserForms.

The program solves linear programming problems with two variables and one objective function (multicriteria programming is not considered in this version of application). There is no limitation for the number of constraints, however, the bigger the model is the longer it takes for the calculations to be made and for the graph to be drawn. On the other hand, a model with 20 constraints was tested and the calculation did not take more than 5 seconds. But the graph loses its transparency when it contains a large amount of lines, so the program is not made for large models. The application cannot solve integer problems for now – that is to be add in the dissertation thesis. Only non-negative variables are considered. The program can recognize all the possible results of a linear problem: one optimal solution (in the example above), alternative optimal solution (see Figure 11), unbounded feasible region (see Figure 12) and infeasible linear problem (see Figure 13). Which type of solution the program found is written under the graph.

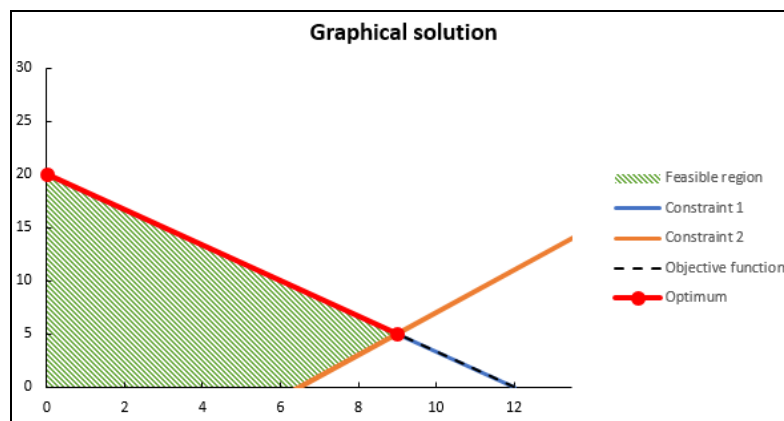


Figure 11: Alternative optimal solution

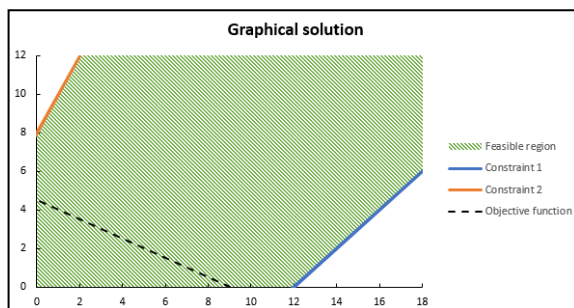


Figure 12: Unbounded solution

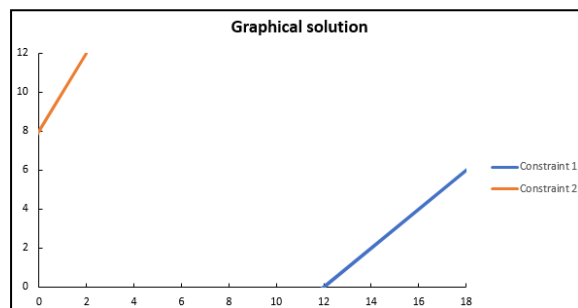


Figure 13: Infeasible linear problem

The application contains several imperfections, for example in Figures 12 and 13 the interpretation can be quite difficult because it is not obvious which direction the objective function or constraints are heading. The solution could be to add special arrows that would indicate the direction of the lines. This together with other details will be implemented in the dissertation thesis.

CONCLUSION

The application for graphical solution of linear programming problems is now in development stage. Imperfections and flaws are being detected and removed. The trial version of the program will be released in 2018 at the University of Economics in Prague.

The program can solve linear programming problems with all types of solutions, with two variables and unlimited number of constraints. It computes not only the optimal solution(s) but also feasible and basic solutions. The graph displays the feasible region, all constraints, objective function and optimal solution(s). The application also offers different types of data input so that the user can choose the method that suits him/her the best. The handling is very intuitive and simple.

A big advantage of this application is its accessibility among students. Microsoft Excel is a well-known software that allows free student licences. Students are used to work with it at schools on every day basis, therefore this application is very easy and straightforward to use. There is no need to install anything, the whole application consists of only one small file. For advanced users is also very easy to adjust the application.

In future, the application can be widened with integer linear programming, simplex algorithm and a simple database where could user save his/her own models. Other add-ins could be parametric or multicriterial programming, models with three variables, objective function with a constant or models with negative variables.

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Happiness of Students' Suan Sunandha Rajabhat University

Pimporn THONGMUANG

*Department of Aesthetic Health Science and Health Science,
Suan Sunandha Rajabhat University,
1 U- Thongnok, Dusit, Bangkok, Thailand 10300
phamaice@hotmail.com
pimporn.th@ssru.ac.th*

ABSTRACT

The objective of this research was studying of happiness of students' Suan Sunandha Rajabhat University. Samples of this research were 1,600 students of Suan Sunandha Rajabhat University. The structured questionnaire, which contains questions on personal information, and happiness assessment form. Data was then analyzed by using descriptive statistics, and by One Way ANOVA and t-test. This research revealed that students' average happiness score was 29.38 points. This means, in general, students were happy as normal people. Comparison of happiness scores revealed that majority of students were equally happy as normal people, which were accounted for 49.0 percents. This was followed by students who were less happy than normal people, which were accounted for 24.5 percents; and those who were happier than normal people, which were accounted for 24.5 percents, respectively. Noteworthy findings were those students who were satisfied by their current appearance had higher average happiness score than those who weren't satisfy with their current appearance; with statistical significance of 0.01. This research also revealed that students who expected that receiving spa service will lead to happiness also had higher happiness score than those who didn't expect that receiving spa service will lead to happiness; with statistical significance of 0.05. Therefore, university should consider constructing spa service center for health, in order to take care of, and to provide consulting service on, student's appearance and health; which will alleviate students' happiness in the long term.

Keywords: Happiness, Undergraduate Student

INTRODUCTION

The 12th National Economic and Social Development plan, issue 2017-2021, focuses on promoting factors that reduce health-related risk factors and promoting every sector to recognize the effects toward people's health; by improving people's knowledge on taking care of their health, cultivating sense of good health, educating them on self-screening of healthy behavior via various available learning channels, providing easy to access consultation service for mental health, and supervising the distribution of correct health information, in accordance with academic principle. (Royal Thai Government Gazette, 2016, p.78) This plan is conformed to Thailand's National Health Development Plan during the 11th National Economic and Social Development Plan, issue 2012-2016; in term of specifying the strategy that focuses on health promotion, disease prevention and control, and protecting of people's health, so that Thai people may have strong physical health, mental health, strong society and strong intelligence. As well as developing and promoting a guideline of healthy behavior among the people, creating social measurement against significant risky behaviors toward health, and promoting exercising and having good mentality health. (Bureau of Sanatorium and Art of Healing, 2017, p. 25)

Also, developing the people to have good and strong health, physically and mentally, and making them free of disease, which will allow them to become a vital underlying force for efficient development of the country, is necessary. As well as development high quality people and society, by promoting the people's happiness, completely and with high quality of standard; and by strategy that promote sport playing, which habit of exercising and using spare time productively, while focus sport as a tool to improve quality of life, in accordance with National Sport Development Plan No. 5, issue 2012-2016. (Ministry of Tourism and Sports, 2017, p.7) A survey of behavior for sport playing or exercising of population of over 11 years old, that surveyed over 57.7 million people, by National Statistical Office in 2011, has revealed that during 1 month before the interview, 26.1 percents of interviewees had been playing sports or exercising. Meanwhile, male samples had higher rate of sport playing or exercising than female, which were 27.4 and 25.0 percents, respectively. However, comparison of sport playing or exercising data against results of previous surveys revealed that sport playing or exercising had increased by 3 percents, compared to 2004 and 2007. Another survey on relationship between patient's sport playing or exercising and illness during the last 1 month, from 17.1 million samples, has revealed that over 73.1 percents of samples were those who never play any sport or exercise for the last 1 month. Also, over 3.1 million samples had been hospitalized during the previous 12 months prior to the interviewing; among them, over 76.0 percents had never play any sport or exercise during the last 1 month. (National Statistical Office, 2016)

Happiness of higher education student can be increased from activity that promotes public mind (Chueatong et al, 2012); it was also found that forgiveness was major toward happiness of Thai student (Thisaphak, 2005). Moreover, self-confidence was also another factor that created happiness (Yaratan and

Yucesoylu, 2010), as well. Social network, which was comprised of friend and family, was also another major factor toward human's happiness. (Argyle and Furnham, 1983; Campbell, 1976) The last finding shown that 19.4% of students in Thai traditional medicine program was stress and insomnia (Thongmuang and Suwannahong, 2015). Suan Sunandha Rajabhat University arranged learning management of higher education for the subject of Science and Technology and Quality of life; where one of the learning objectives concerns studying of health, in order to educate students on how to maintain their physical and mental health. This was the research topic that has been given to researcher from the university, along with the responsibility to educate students on that matter. Therefore, learning about happiness of students who have exercising behavior, their attitude toward exercising, and other concerns on that matters can be useful as a guideline for the instruction, in order to improve instruction's efficiency, to show current circumstance among students, and to provide knowledge and stimulate change of health behavior, correctly and appropriately. Doing so will be directly profitable to students, as a young generation, to be ready, physically and mentally, as a major underlying force for development of the country.

METHODOLOGY

This research - studying of happiness of Suan Sunandha Rajabhat University's students – was a descriptive research. Population of this research was comprised of 20,839 undergraduate students, who enrolled in the academic year 2559. (Suan Sunandha Rajabhat University, 2016) Samples of this researcher were 1,600 students from Faculty of Humanities and Social Sciences, Faculty of Management Science, Faculty of Science and Technology, and Faculty of Education.

INSTRUMENT

The instrument we used for this research was questionnaire that author had created from studying of document, idea, theory and literature review. Such questionnaire was comprised of 2 parts, namely.

Part 1: sample's personal data, such as, age, gender, monthly income, history of illness during the last 1 month, exercising during the last 1 month, main reason for exercising; main method to deal with distress; spa usage, such as, massage, sauna, and scrubbing that create happiness; current state of their love life, and satisfaction of their current appearance. Items of part 1 were check list.

Part 2: mental health assessment form from Department of Mental Health, Ministry of Public Health (Ministry of Public Health, Department of Mental Health, 2015), which was an assessment form with Likert Scale, and contained 2 sets of questions. The 1st set were items number 1, 2,4,5,6,7,9,10,11,13,14 and 15; where the 'highest' granted 3 points, 'high' granted 2 points, 'slightly' granted 1 point, and 'none' granted 0 point. The 2nd set were items number 3, 8 and 12; where the 'highest' granted '0' point, 'high' granted 1 point, 'slightly' granted 2 points, and 'none' granted 3 points. Interpretation of scores was categorized into 3 levels, namely:

26 points or lower meant lower happiness compare to normal people (poor)

27-32 points or lower meant equal happiness compare to normal people (fair)

33-45 points or lower meant more happiness compare to normal people (good)

DATA GATHERING

This research gathered data from samples at Suan Sunandha Rajabhat University, between November and December of 2016; who voluntarily answered research's questionnaire. In order to safeguard participants' confidentiality, they answered research's questionnaire anonymously.

DATA ANALYSIS

This research used descriptive statistics to assess the level of happiness, as well as t-test and One Way ANOVA; then compare statistical different between each pair by using LSD.

RESULTS

Part 1: general characteristic of samples

Demographical, economical and social characteristics

Majority of samples were female, which was accounted for 63.4 percents, and male, which was accounted for 36.6 percents. Most of them were between 18-20 years old, which were accounted for 64.3 percents; follow by samples of over 20 years old, which were accounted for 34.7 percents; and samples of younger than 18 years old, which were accounted for 1.0 percents. Majority of students earned less than 5,000 Baht a month, which were accounted for 51.6 percents; follow by earning of between 5,001 – 10,000 Baht a month, which were accounted for 41.5 percents, and over 10,001 Baht a month, which were accounted for 6.9 percents. [Table 1]

Table 1: Samples, as categorized by their demographic characteristics and income

Personal Data	Samples N = 1,600	Percentages (Total = 100%)
Gender		
Male	586	36.6
Female	1014	63.4
Age		
1. Under 18 years old	16	1.0
2. Between 18-20 years old	1029	64.3
3. Over 20 years old	555	34.7
Monthly income		
1. Under or equal to 5,000 Baht	825	51.6
2. 5,001 – 10,000 Baht	664	41.5
3. Over 10,001 Baht	111	6.9

Health's data

In term of most frequently found illnesses during the last 1 month, [Table 2] it was revealed that 73.2 percents of samples had experience illnesses during the last 1 month, where as the most frequently found illness was common cold, where 302 samples had been ill, which were accounted for 19.9 percent. This was followed by headache, allergy, muscle strain, insomnia, diarrhea, stomach inflammation, and asthma; where 287, 173, 148, 92, 83, 77, and 10 samples had been ill, which were accounted for 17.9, 10.8, 9.3, 5.8, 5.2, 4.8, and 0.6 percents, respectively.

Table 2: Most frequently found illnesses during the last 1 month

Illnesses	Samples N = 1,600	Percentages (Total = 100%)
common cold	302	18.9
headache	287	17.9
allergy	173	10.8
muscle strain	148	9.3
insomnia	92	5.8
diarrhea	83	5.2
stomach inflammation	77	4.8
asthma	10	0.6

Exercising

The result of this research, in term of samples' exercising [Table 3], has revealed that 842 samples, which were accounted for 52.6 percents, had been exercise during the last 1 month; while 758 samples, which were accounted for 47.4 percents, had not been exercising during the last 1 month.

Table 3: Main reason of exercise

Main reason	Samples N = 1,600	Percentages (Total = 100%)
Weight control	519	32.4
To have strong body	475	29.7
Relaxation	207	12.9
Toning muscle	175	10.9
Follow other's invitation	130	8.1
To help with sleep's problem	66	4.1
To help with health problem	28	1.8

The most common reason for exercising was weight control, from 519 samples, which were accounted for 32.4 percents. This was followed by to have strong body, relaxation, toning muscle, follow other's invitation, to help with sleep's problem, and to help with health problem, from 475, 207, 175, 130, 66, and 28 samples; which were accounted for 29.7, 12.9, 10.9, 8.1, 4.1, and 1.8 percents, respectively.

Main method to deal with distress

When there was any incident that caused distress [Table 4], majority of samples had main method to deal with such distress, namely, to accept the fact and that anything that might happen will happen; such method was found among 461 samples, which were accounted for 28.8 percents. This was followed by positive thinking and belief that there is solution for every problem, which was found in 456 samples or 28.5 percents; consulting with trustworthy person, which was found in 399 people or 24.9 percents; and looking for hobby, which was found in 284 people or 17.8 percents, respectively.

Table 4: Main method to deal with distress

Main method to deal with distress	Samples N = 1,600	Percentages (Total = 100%)
to accept the fact and that anything that might happen will happen	461	28.8
positive thinking and belief that there is solution for every problem	456	28.5
consulting with trustworthy person	399	24.9
looking for hobby	284	17.8

Satisfaction toward various aspects

There was findings on belief of majority of samples that receiving spa services [Table 5], such as, message, sauna, scrubbing for relaxation will induce happiness; which were found in 691 samples, or 35.2 percents. This was followed by uncertainty that spa services will induce happiness, from 563 samples or 35.2 percents, and that receiving spa service will not create any happiness, from 346 samples or 21.6 percents, respectively. For the aspect of samples' current sexual relationship, this research found that majority of samples was single, from 700 samples or 43.8 percents. This was followed by being in a relationship, from 686 samples or 42.9 percents; and had been in relationship but not anymore, from 214 samples or 13.4 percents, respectively.

Table 5: Current sexual relationship

Current sexual relationship	Samples N = 1,600	Percentages (Total = 100%)
Single	700	43.8
Being in a relationship	686	42.9
Had been in relationship but not anymore	214	13.4

Satisfaction toward current appearance

In term of samples' satisfaction toward current appearance, this research found that majority of samples was satisfied, from 1,201 samples or 75.1 percents, and that 399 samples, or 24.9 percents, were unsatisfied.

Part 2: Level of students' happiness

From average happiness score, it was revealed that majority of students was equally being happy as normal people, from 784 samples or 49.0 percents [Table 6]. This was followed by students who were less happy than normal people and those who were happier than normal people, which were equal at number, that is, 392 samples or 24.5 percents. Total average score of students' happiness was 29.38 percents, that is, they were equally happy as normal people (fair)

Table 6: Level of students' happiness

Current sexual relationship	Samples N = 1,600	Percentages (Total = 100%)
Being happier than normal people	392	24.5
Equally happy as normal people	784	29.0
Less happy than normal people	392	24.5

Comparison of average happiness scores of students

Average happiness scores of students and their exercising behavior during the last 1 month

Analysis result of relationship between average happiness scores of students and their exercising behavior during the last 1 month has revealed that different exercising behavior caused different score of happiness [Table 7]. That is, samples who had been exercising during the last 1 month had higher average happiness score than those who had not exercising during the last 1 month; with statistical significance of 0.01.

Table 7: Average happiness scores of students and their exercising behavior during the last 1 month

Behavior	Samples	Average happiness score	S.D.	t	Sig
Had been exercising	842	29.66	5.20	-2.312	0.010**
Had not exercise	758	29.07	4.90		

**p < .01

Average happiness scores of students and their satisfaction toward their current appearance

Considering the difference of average happiness scores of students and their satisfaction toward their current appearance, [Table 8] this research found that different level of satisfaction toward current appearance caused different average happiness score. That is, those samples who were satisfied with their current appearance had higher average happiness score than those who weren't satisfied with their current appearance, with statistical significance of 0.01.

Table 8: Average happiness scores of students and their satisfaction toward their current appearance

Satisfaction	Samples	Average happiness score	S.D.	t	Sig
Being satisfied with current appearance	399	26.88	4.99	11.849	0.000**
Being unsatisfied with current appearance	1201	30.21	4.82		

**p < .01

Consideration of difference between average happiness score of students and their gender, this research revealed that gender caused no difference in average happiness score, with statistical significance of 0.05. [Table 9]

Table 9: Average happiness score of students and gender

Satisfaction	Samples	Average happiness score	S.D.	t	Sig
Male	586	29.27	5.29	-0.656	0.256
Female	1014	29.45	4.94		

**p < .05

Comparison of average happiness score of students

Analysis result on difference of average happiness score of students by their ages, which used One Way ANOVA method, has revealed that relative average happiness score to age had no difference, with statistical significance of 0.05. [Table 10] (F = 0.600, df * 2, p = 0.549, R²=30.88)

Table 10: Average happiness score of students by their ages

Average happiness score	Sum of Squares	df	Mean Squares	F	Sig
Between groups	30.88	2	15.44	0.600	.549
Within groups	41117.03	1597	25.74		
Total	41174.91	1599			

*p<.05

Analysis result on difference of average happiness score of students by their incomes has revealed no difference, with statistical significance of 0.05. [Table 11] (F= 2.898, df= 2 ,p= 0.055, R²= 148.78)

Table 11: Average happiness score of students by their incomes

Average happiness score	Sum of Squares	df	Mean Squares	F	Sig
Between groups	148.78	2	74.39	2.898	.055
Within groups	40999.12	1597	25.67		
Total	41147.91	1599			

*p<.05

Analysis result on difference of average happiness score of students by their current sexual relationship; whether they were single, had been in a relationship but not anymore, or in a relationship; have revealed no difference, with statistical significance of 0.05. [Table 12] ($F = .964$, $df = 2$, $p = 0.382$, $R^2 = 49.61$)

Table 12: Average happiness score of students and their current sexual relationship

Average happiness score	Sum of Squares	df	Mean Squares	F	Sig
Between groups	49.61	2	24.81	.964	.382
Within groups	41098.29	1597	25.73		
Total	41147.91	1599			

* $p < .05$

DISCUSSION

Average happiness score of Suan Sunandha Rajabhat University's students from this research was 29.38 points. This means students were, in general, as happy as normal people. Comparison of average happiness score has revealed that majority of students were as happy as normal people, which were accounted for 49.0 percent; this was followed by those who were less happy than normal people, which were account for 24.5 percents, and those that were happier than normal people, which were accounted for 24.5 percents, respectively. This research's result was different from previous studied, which found that most students were happier than normal people, or in general, had high level of happiness. (Voraharn and Senarak, 2011; Kawsaard, Arpanantikul and Putwatana, 2013)

Comparison of difference between average happiness score of students and their exercising behavior has revealed that students who had been exercising during the last 1 month had higher average happiness score that student who had not been exercise during the last 1 month; with statistical significance of 0.01. From this finding, there should be further promotion so that students will exercise more regularly, in order to increase their owned happiness. Comparison the difference of average happiness score of students and their illness has revealed that students who had not been ill during the last 1 month also had higher average happiness score than students who had been ill during the last 1 month; with statistical significance of 0.01. This was different from results of previous studies, which found that student's physical condition has no relationship with their happiness, with statistical significance of 0.05. (Kawsaard, Arpanantikul and Putwatana, 2013) This research also found that students who satisfied with their current appearance also had higher average happiness score that those who weren't satisfied with their current appearance, with statistical significance of 0.01. Therefore, instruction on the aspect of health, in the subject of Science and Technology and Quality of Life, will be really important; in order to educate student on how to prevent against illness, how to maintain their health and to stimulate them to do more exercise, to promote both their physical and mental health, as well as to maintain toning body regularly.

On the contrary, comparison of difference between average happiness score of students and their gender revealed that male and female had indifferent average happiness scores, with statistical significance of 0.05. This was different from previous study by Goodarzi et al, which found that male and female students, who were also university's athlete, had different level of happiness. (Goodarzi, Rajabi, Yousefi and Nansoor, 2008) This is possible due to different in hormones of both genders in foreigner; however, it had no effect on students of Suan Sunandha Rajabhat University.

This research has also found that there was no difference between average happiness score of students and their income, with statistical significance of 0.05. That is, no matter how much a student made per month, whether under 5,000 Baht or more than 10,000 Baht, there is no different in level of happiness. Therefore, happiness of Suan Sunandha Rajabhat University's students wasn't dependent on their income. This research also found that there was no difference between average happiness score of student and their ages, with statistical significance of 0.05. This mean no matter at what age, there will be no relationship of students' ages and their happiness. However, one significant finding was students' belief that receiving spa services will create happiness; where samples with such belief had higher average happiness score that samples who didn't believe that receiving spa services will create happiness; with statistical significance of 0.05. Therefore, student should consider erecting health spa center, in order to take care of, and to provide advice on, shape and health to student. So that Suan Sunandha Rajabhat University's students may have good health and strong body, with good shape; under appropriate method, which will alleviate the level of their happiness in the long term.

SUGGESTION

Learning management for the subject of Science and Technology and Quality of Life, especially on the issue of health, should include every student who enrolled in that subject. As this issue will increase their recognition, make them more careful, and increase their knowledge on the subject directly. This is because current learning management of such subject doesn't require student's class participation, but allows learning via web site.

Therefore, student may somewhat lack the attention that this subject deserve. Furthermore, there should be happiness promoting project for Suan Sunandha Rajabhat University's students, for every faculty and campus; there should also be social work activity, in order to cultivate public mind among student, which will be profitable to both the students themselves and to the society. Moreover, learning management of any subjects that concern health issue should also include method on maintaining physical and mental health. So that students may grow stronger, and be capable of giving the right health suggestion to other person in the future.

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How the Cipp Model Assesses the Entrepreneurial Education Program: From the Micro Entrepreneurs' Perspective

Tengku Maaidah Tengku A RAZAK

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia,
43600 Bangi, MALAYSIA*

Muhammad Sabri HARON

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia,
43600 Bangi, MALAYSIA*

Nor Aishah BUANG

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia,
43600 Bangi, MALAYSIA
openmindresources@yahoo.com*

ABSTRACT

The entrepreneurial education program is very important in forming an entrepreneurial culture in the society, and further provides knowledge in business management and personal finance management systematically. Thus, the assessment on the entrepreneurial education program serves to be an action process which resolves and improves the issue of management involving two parties namely the organiser and the participant. Thus, this conceptual paper seeks to analyse how the CIPP Model assessment CIPP approach is apt to be used to give feedback to the organiser to enable the program to make decision whether to continue, to improve or to end a program. The outcome of the assessment process involves the steps of planning, designing, implementing also evaluating the effectiveness. The CIPP Model assessment approach is chosen because it is a comprehensive model covering the context, input, Process and Product. The output evaluation in the CIPP Model Assessment development was created in 1971 (Stufflebeam 1971), and it was even used widely by various parties (Stufflebeam 2002). Thus, Daniel (CIPP) 2007 explains that this model is often used to assess the evocativeness of the training program. This study intends to identify the method of use of the CIPP model to help organisers and participants to reach the objectives of the entrepreneurial education program which is to generate skilled entrepreneurs and to apply a good business practice that they can become successful in their own entrepreneurial fields. The CIPP model is able to show the outcome of the implementation of the entrepreneurial education program and its effectiveness comprehensively.

Keywords: entrepreneurial education, entrepreneurial program, entrepreneurial education curriculum, CIPP model and the Model assessments.

INTRODUCTION

The entrepreneurial education program carried out in all of the training institutes under the Ministry of Rural Development and Territory seeks to generate potential and innovative, competitive traders in enhancing the national economy. Trained traders are known as entrepreneurs who have skills in carrying out businesses. Other than that, several public and private higher learning institutes also open entrepreneurial courses and subjects to give early exposure to students about the importance of entrepreneurial theoretical and practical. Since the year 1971 -2014 there were 621,800 trained entrepreneurs, and from the number 496,458 were Bumiputeras who did micro business only in Mara training institutes (source: census of Establishment and Enterprises 2005). The statistics above prove that in the period of 43 years, entrepreneurs in Malaysia are very much abundant at the micro level. Thus, the entrepreneurial education program plays an important role in enhancing entrepreneurs' business and capability to expand their businesses. The CIPP model is the format assessment approach to get the whole information about a program. According to (Najib 2016) the CIPP model

is easy and flexible in giving an understanding about a program based on the context and work process. Meanwhile for (Azizi 2001) the use of the CIPP is very effective to obtain the formative and summative outcomes in deciding upon the decision and capability in resolving problems. The CIPP Model assessment is able to assess before, during and after the program is continued.

Micro entrepreneurs have a yearly income of RM300,000.00 per year or less than 5 workers (source: National PKS Development council 2014), comprising of several types of businesses based on one's skills and capability like food and drinks, cosmetics, fruits and souvenirs businesses. Micro entrepreneurs is the first stage in the entrepreneurial hierarchy. Their role and responsibility are great in boosting the national economy. For example, in the aspect of paying for business license and goods taxes, the commitment lies in the responsibility of the micro entrepreneurs to continue business. Micro entrepreneurs need to have enough skills and training through the courses in the fields related to their businesses as shown below:

Table I: Types of Business, Types of Training, Skills (the analysis of the list of speakers and facilitators of MARA 2015)

Type of business	Training	Skill
Food and beverages	Food management, cooking class, healthcare, account management, business management, personal financial management	1-skilled in managing food hygienically, efficiently and deliciously. 2-skilled in managing company's and personal finances 3- skilled in managing business
cosmetic	make-up class, salon, SPA, healthcare, account management, business management, personal financial management	1-skilled in managing cosmetic hygienically, efficiently and safely. 2-Skilled in managing company's and personal finances 3- skilled in managing business
Fruits	Handling the fruits, fertilizer-making class, planting trees, healthcare, account management, business management, personal financial management.	1-skilled in handling fruits hygienically, efficiently and the fruits are in fresh condition 2- Skilled in managing company's and personal finances 3- skilled in managing business
souvenirs	Handling souvenirs, online business class, souvenir-creating class, account management, business management, personal financial management	1-skilled in handling souvenirs hygienically, efficiently 2- Skilled in managing company's and personal finances 3- skilled in managing business

Historically, training in the entrepreneurial education in the training institutes began in 1971, although Majlis Amanah Rakyat (MARA) was founded in 1966. However, in the period of five years of its establishment, most of the training are only on basic business. Thus in 1971, the entrepreneurial training curriculum in MARA was always improved until the year 2005 when the assessment guideline of the development program was issued. Thus, the curriculum system has undergone transformation where the training given to entrepreneurs was equipped with the guidance and mentoring system. (Entrepreneurial Development Department, 2006).

THE CURRICULUM ASSESSMENT OF THE ENTREPRENEURIAL EDUCATION PROGRAM

Assessment is a final step in a program or curriculum, where all the information and data were gathered comprehensively. Thus, this assessment process prioritises the right ethics and procedure without any elements of biasness of personal interests. The main goal is to ensure that the aims and objectives of the curriculum are met. For Mak soon sang 2008 the assessment process is a big step and it requires strategies, so that the decision made and accepted can be advantageous.

Nonetheless, according to alias 2013 curriculum assessment has to be evaluated throughout the curriculum development and the implementation of the curriculum activity. This is where every outcome and change that happens serves as significant pieces of information that need to be proven. Thus, according to several academicians and professionals in the assessment field like (stake 1967, Scriven 1974, Ornstein and Hunkins 2009, azizi 2008,) stated that the assessment is divided into two namely formative and summative. The formative assessment means that an assessment is done during the curriculum development process, whereas the summative assessment is to ensure that all the programs done have quality to them. The summative assessment also looks into the objective achievement.

The curriculum of the entrepreneurial education program in Malaysia differs by training institute. However, for institutions like MARA every sector like education, entrepreneurial and management services have to have a curriculum that focuses on entrepreneurial development (RPHK/BJA-KKLW:2/2010). The entrepreneurial education program aims to develop a community that is interested in going into business, through the process of teaching and learning training/practicum also guidance. The implementation method of the entrepreneurial education program has to be assessed and measured to ensure that the program carried out will benefit and become effective to the entrepreneurs.

The evaluation of the entrepreneurial education program concerns with assessing the syllabus, module, activities and processes done and also to know just how far the program can reach the objectives intended. The practice formed earlier on can give a positive input in entrepreneurs, because the main focus in this study is to know the extent of the curriculum implementation. The entrepreneurial education program is able to increase the society's awareness to become entrepreneurs and to have the skills on the effort, so the outcome of the entrepreneurial education can boost their business performance. Thus in assessing the curriculum, the entrepreneurial education program is vital, to obtain the information comprehensively and accurately from various participants' perspectives (Tomlinson 2004)

Therefore, in the assessment of the entrepreneurial education program there are various models or approaches used to evaluate a program. According to (Ibrahim 2001) the model is the symbol of the actual situation where it is depicted briefly and comprehensively, and even the model is represented as a road that prevents a driver from getting lost (Nadler 1983).

THE USE OF THE CIPP MODEL IN THE ENTREPRENEURIAL EDUCATION PROGRAM ASSESSMENT

The assessment of a program or curriculum needs to adopt the Model assessment because the method of assessment used will tell the extent to which the program is to be continued, improved or terminated, where this determination will look into the issues, select the information required, gather and analyse the information to report the conclusion deemed useful to the decision makers. Thus, the assessment process has to be done carefully, and citing (Jamil 2002, Norasmah 2002, Patton 1990 and Suchman 1967) the assessment is the most difficult aspect in the assessment Model.

The issue in this conceptual paper is why this study adopts the Model Assessment by Daniel L.stufflebeam (CIPP) 2007. It was created at the end of 1960 and its findings in 1966 were related to the design and objectives, tests and testing. Meanwhile in (Stufflebeam's Model assessment 2003) it asserts the role of the researcher in collecting the data and information from main resources directly in the program. According to (Daniel L.stufflebeam 200) the most important thing in the program assessment is not to change but to improve, and even to know the responsibilities of a leader and staff in an institution systematically. As the effectiveness of a

program is seen from the formative and summative assessments, such an assessment is able to solve the issue of program implementation in the future.

However, this model is also used to perform an assessment before, during and after the program is carried out. Meanwhile all other models can only be assessed at a certain time, for instance the stake model which only applicable when the program is being held, the Tyler model which only measures the difference in the participants' behavior through the changes they exhibit before and after the program, and Kirkpatrick Model assessment that only assesses whether the program's objectives are fulfilled or not, and will measure the change in the attitude, added knowledge and skills after the program (Kirkpatrick 1994).

However, when assessing programs, there could not be one perfect or the best, because every Model assessment has its own strength and weakness. According to Patton (1990) there is not one of the Model assessments that proves to be the most complete and absolute in an assessment, and (Norasmah 2002) proposes that when assessing a program, one needs to know the purpose, design, characteristics of suitability, past studies, strengths and weaknesses before the most suitable Model assessment is selected.

THE ANALYSES OF MULTIPLE MODEL ASSESSMENTS

In determining a suitable model with every study, an assessor needs to understand all the Model assessments related to the programs that will, are and have been implemented, because every model has its own method, rules and strategies that are at par with the objectives of the assessment.

Therefore, there are 9 Model assessments that have been analysed to know and understand every model to be adapted with the assessment that is to be carried out. After the analysis, the evaluator is able to know why the CIPP Model assessment approach is very suitable with the studies related to the evaluation of effectiveness of the program with achievement. Among the models that have been analysed are as follows:

1. Tyler (1942) Model assessment
2. Hammond (1973) Model assessment
3. Scriven (1972) Free-Aim Model assessment
4. CIRO (1970) Model assessment
5. CIPP (1973-2007) Model assessment
6. Bell (1979) Model assessment
7. Kirkpatrick (1959) Model assessment
8. Responsive (1967) Model assessment
9. Illuminative (1972) Model assessment

Table 2: A Brief Analysis of the Comparison between the Model Assessment and the CIPP Model

Assessment Component	Cipp 1971	Tyler 1942	Hammond (1973)	Scriven (1972)	CIRO (1970)	Bell (1979)	Kirkpatrick (1959)	Responsive(1967)	Illuminative (1972)
Method	*Context *Input *Process *Product	Context	Process	output	*Context *Input *Reaction *outcome	*Reaction *Efficiency *Use *Value	*Reaction *Learning *Behaviour *Outcome	*Report outcome	*Process *Outcome
Use	*Formative *Summative	Summative	Formative	Summative	Summative	Formative	*Formative *Summative	Summative	*Formative *Summative
Focus	Getting the whole information	Progress	Achievement	Program's strength and weakness	Program's implementation	Personality Enhancement @ Change	The result of change	Stakeholder's information	Strategic
Process	*before *during *after	*Before *During	After	After	*early *implementation *outcome	*During *After	*Before *After	During	*During *After

In the summary of these Model assessments, it can be seen that the assessment component in terms of the method, use, focus and assessment process do share similarities and differences, but in terms of the aims and objectives, they differ according to the purpose and requirement of the programs during the time that the models are constructed.

Therefore, if we look at it as a whole, these Model assessments have their own strengths and weaknesses. However, if we are to look at the nine models, it is found that the CIPP Model assessment is the model that assesses thoroughly and systematically and it follows the situation of the assessment. Even a lot of scholars are interested in it and stated that the CIPP model assessment is easy and accurate in assessing a program that is management-oriented, such as agricultural, entrepreneurial, fishery programs so and so forth.

If we look at the eight types of the models at random, they only assess one of the levels. This is because the process is long and purposeful. However, the CIPP Model Assessment is the only model that is universal through time and it assesses the program as a whole and look into the outcome of a program, and there is also a model similar to the CIPP, namely the CIRO model, where this model only looks at the initial stage, the implementation and the outcome.

Thus, the summary of the model assessment can be used to identify the requirement and the significance, also the suitability of the parties that are going to assess, by fulfilling the aims of the organisers when assessing a program.

HOW THE CIPP ASSESSES THE ENTREPRENEURIAL EDUCATION PROGRAM

Stufflebem Model assessment is chosen to assess the effectiveness of the entrepreneurial education program, because the Model assessment (CIPP) assesses the journey before, during and after the program compared to other Model assessments. Although the model has its own strength, it is also known to have some weaknesses. However, one important thing about the program evaluation is its suitability with the use of assessors and the purpose of the assessment in determining the extent of the effectiveness of a program (Kirkpatrick 1994)

The use of the CIPP model to identify as a whole the entrepreneurial program can leave an impact to the entrepreneurial development. The model is able to gather information at any given time and this facilitates the decision-making. One of the simple models of the CIPP component position is as shown below:

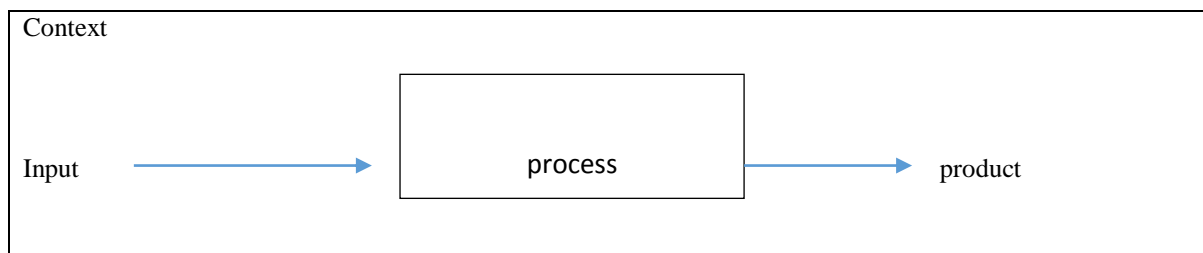


Diagram 1: CIPP Simple Model (Najib 2016)

According to (Najib 2016) the basic of the CIPP approach is to look into the process from start to finish. Every CIPP component namely the Context, Input, Process and Product requires the reference of information from the

program carried out, so that the assessment done can obtain precise information. Among the components and references in the entrepreneurial education program are as follows:

<i>Component</i>	<i>Reference</i>
<i>context</i>	Mission, vision, aim, objective by the context and the environment of the entrepreneurial education program
<i>input</i>	The planning of activities covering the structure, activity and standard, physical and human resources, cost and duration of the entrepreneurial education program
<i>process</i>	The implementation of the entrepreneurial education program based on planning
<i>product</i>	Decisions acting for all the aspects stated which are use ability, ease of use, suitability and technical robustness in the entrepreneurial education program.

Diagram 2: The use of the CIPP components referring to the entrepreneurial education program

THE USE OF THE CIPP MODEL ASSESSMENT IN THE ENTREPRENEURIAL EDUCATION PROGRAM

The CIPP Model assessment is a much favoured model among industrial, commercial, agricultural and educational program evaluators or assessors (Yahya Buntat 2006), because it is systematic and is able to give precise information that facilitate decision makers to understand and conclude accurately. If analyses are done between Stake and Scriven's models, both are contained in the CIPP model, so clearly the approach encompasses all management-oriented models.

1-Context assessment assesses the aim of the entrepreneurial education program

The assessment of "context" is one that concentrates on change and environmental issues (Azizi Yahya 1998) as it is a method to know if the aim and objective of the program can be fulfilled by looking into the effectiveness of the entrepreneurial education program. The formation of the objective is substantial in determining the enhancement of motivation and skills in an entrepreneur. Among the objectives of the program is that the success of an entrepreneur depends a great deal on his or her attitude, personality, idiosyncrasy (Abdallah 2013), based on the following characteristics, bold, trustworthy, loyal, committed, highly energetic, taking the opportunity, driven, accountable and displays leadership (Zimmerer & Scarborough 1996), open-minded, consistent, honest, efficacious, creative, funny, empathetic, explorative, motivated, positive, optimistic, inspired, and inspirational, interested (Mahashim 1985), respectful, fit, hardworking, innovative, educated and knowledgeable (Nor Aishah buang 2013), other than being respected, loved and admired. Thus, in the planning of the entrepreneurial education program, to determine a program's success, an entrepreneur has to be willing to respond to change and issues, at the same time develop his or her own confidence and attitude. Thus, it has become very important in the implementation of the program, that program management and the speaker understand beforehand the aims of the program in question (Abdul Raof Dalip 1989)

2- Input assessment in assessing the planning of the program

Input assessment covers activities related to the program input and the resources (Stufflebeam2007). Thus, in determining this type of assessment, it is crucial to plan the program in order to help the organiser to make decisions with regard to the program structuring. Thus, the program's input assessment involves the assessment on human resources and non-human resources, for the former it covers the level of skills and the attitude of the speaker and the entrepreneur, whereas for the latter it is concerned with the level of infrastructure, the teaching materials and the learning materials, financial allocations also the use of the funding. Thus, in assessing the entrepreneurial education program (Stufflebeam 2007) stresses on the quality of the module and the systematic program planning, as such a program according to the objectives will generate quality entrepreneurs. (Stufflebeam1971, 2003) explains that the main objective is to help determine the changes required in a program, whereas the assessment component is to identify and determine the suitable approach in the execution and

completion of a program. Therefore, the concept of the assessment outline is to gather the data, and the next steps are to plan, analyse and report them.

3- Process Assessment in the entrepreneurial education program action

It is an ongoing checklist to determine the practice in the program planning (Stufflebeam & Shinkfield 2007) where it encompasses the process of checking on every program, conducting a monitoring system on the program and auditing the program to ensure that the entrepreneurial education program follows by the rules and the book, the laws and ethics and identify the flaws in the procedure's design or program implementation (Stufflebeam 2003, 2007). Even in the assessment process, it is the responsibility of the assessor to give a report on what actually happens inside or throughout a program. However, for (Ghazali Darussalam 2010) normally, the assessor will prepare various forms of feedback to the organiser and the implementer, as it can help the organiser to make formative assessment decisions, or specifically on how the program can be modified or improved. Thus, the assessment requires the assessment towards the action of every activity such as planning, implementation, teaching and learning evaluation, monitoring and acknowledgment.

4-Product Assessment in assessing the program outcome of the entrepreneurial education program

This seeks to measure, interpret and consider the achievement of a program (Najib 2016) while according to (Stufflebeam 2003, 2007) product assessment is all about determining and checking general outcome and specific outcome of the program by deciding on the approach to measure and identify the expected outcome, assess the program merit, conduct retrospective benefit to give the actual value of the program or carry out cost effectiveness assessment as to determine the cost-effective programs compared to other similar ones. The main objective of product assessment is to determine the extent to which the entrepreneurial development training achieves the requirement and need of the aim of the program with entrepreneurial recognition, and product assessment has to oversee the positive and negative impacts of a program. Thus, product assessment is very important in helping the organisers to make the summative evaluation decision when assessing program's effectiveness (Orlich 2004). The assessment product will involve the assessment towards the cognitive, affective and psychomotor aspects produced by program participants (Mertler 2005).

CONCLUSION

The use of the CIPP Model assessment in assessing the effectiveness of entrepreneurial education program is an approach that suits the program outcome. Meanwhile the decision makers require that the outcome is able to tend to several issues, like the significance of the program, the planning that needs to be done and so on. However, according to (Stufflebeam 2003) the approach of the CIPP Model assessment sees the collaboration between the assessor and the decision maker. However, it is important to prove the value of the program in improving it. All in all, the CIPP model is suitable to be used to evaluate the effectiveness of the entrepreneurial education program as it helps the organiser to be accountable in making decisions.

The entrepreneurial program involving micro entrepreneurs needs to be enhanced and continued successfully because micro entrepreneurs are the majority at entrepreneurial level. Thus, the entrepreneurial training institutions need to have some added value to enhance micro entrepreneurs' businesses. For Najib 2016 when assessing the module quality, we need systematic effort, whereas the goal and the objective of the program with the CIPP model come from the feedback from the assessors, that planning and implementation towards improving the program leave a positive impact.

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How to Teach Mathematics: Some Suggestions from Herbartian Tradition

Verena ZUDINI

Department of Mathematics and Earth Science

University of Trieste, Italy

vzudini@units.it

ABSTRACT

The German Johann Friedrich Herbart (1776-1841), recognized in mathematical psychology as a forerunner in the measurement of mental phenomena – in a study of psychic events which was not only qualitative but also quantitative, based upon mathematics (specifically, calculus) –, stood out also for his activity in the psycho-pedagogical field and for his theory of education, in which mathematics played a fundamental role. His contribution was, in particular, considerable for mathematics education between 1800 and 1900 in the world of German culture, where important reformist tendencies in the study of teaching problems matured. After a brief sketch of Herbart's life and work, the paper will focus on these aspects, giving methodological suggestions which can be relevant and useful for mathematics education of today.

1. JOHANN FRIEDRICH HERBART (1776-1841), A BRIEF SKETCH OF HIS LIFE AND WORK

Born in Oldenburg, capital of the Grand Duchy of the same name (now in Lower Saxony), Herbart studied philosophy at the University of Jena, where he was a pupil of Fichte (see Raapke, 1976). Employed as a private tutor in Bern, Switzerland, Herbart visited the Burgdorf Institute founded by Johann Heinrich Pestalozzi (1746-1827) and established a friendship with him. Having been “Privatdozent” first of pedagogy and then of philosophy at the University of Göttingen, in 1809 he accepted the call to take up Kant's chair in Königsberg (now Kaliningrad; at that time Eastern Prussia). There, Herbart found a favourable environment for his work and collaborated, with government support, in commissions and school reform projects. In 1833, he went back to Göttingen, where the chair of philosophy was vacant.

1.1 HERBART'S THEORY OF EDUCATION

Besides his philosophy, which he developed in opposition to idealism (at that time dominating the German world of culture) as an elaboration of concepts obtained by experience, Herbart stood out also for his activity in the psycho-pedagogical field and for his theory of education.

In this context, he conceived “pedagogy” as an organic system of concepts concerning the aims and the methods of education (see Benner, 1976; Blaß, 1976; Geißler, 1976; Raapke, 1976). In order to be a science, pedagogy needs a basic philosophical doctrine, specifically “psychology”, able to provide necessary knowledge about nature and development laws of the human soul, and also “ethics”, capable of showing the ideal aims of life to which the process of training the student's personality should be directed.

Education can be accomplished, according to Herbart, only through “instruction”, and “educational instruction”, to be such, must be able to arouse what he calls “interest”. Interest is conceived in this regard not only as an educational tool to ensure that what is taught is more readily understood and learned by the student, but also and above all as an end to which education should be directed. It must be considered as an aptitude to grasp the value of the aspects of life and reality and, consequently, to assume a corresponding practical attitude. Educational instruction must make interest grow in all directions, in a simultaneous, coordinated, and harmonious way. The student must be educated in his entirety, at all times, so as to realize the organic unity and development continuity of his inner life, with the purpose of “multilateral culture”.

2. HERBART AND MATHEMATICS

“Mathematics, a foreground discipline”: So Herbart's position on mathematics can be outlined.

Herbart is well known in mathematical psychology as a forerunner in the measurement of mental phenomena, in a study of psychic events which was not only qualitative but also quantitative, based upon mathematics (specifically, calculus) (see, for more details, Leary, 1980; Romano, 1976; Zudini, 2009a, 2009b). In fact, inspired by Kant's dictum that science was necessarily mathematical and in answer to his famous interdiction – which affirmed the impossibility of a mathematization of psychical facts, since they took place along one dimension, time, and were devoid of spatial extension, being intensive magnitudes – Herbart affirmed not only the possibility but the necessity of applying

mathematics to psychology (Herbart, 1822), conceived as “science, newly founded on experience, metaphysics and mathematics” (Herbart, 1824-1825).

According to Herbart, if psychical magnitudes, considered singly, cannot be measured, nevertheless, we can measure the variation of these magnitudes in a direct way, through calculus (the “mathesis intensorum” of that period). In case of shortage and imprecision of empirical observations, we can follow an indirect way, using the predictive power of the mathematical formulation.

The magnitudes which Herbart put at the basis of his calculation were the force of representations and the grade of contrast between them: The representations, which constitute our mental life, clash and, as a consequence of these interactions with stronger or weaker representations, fuse with or inhibit one another, reach or leave consciousness when they exceed or go below the threshold value (“Schwelle”). Once this value has been reached, representations remain in a sort of state of latency, waiting to return to consciousness. All that takes place in the context of a sort of mental “statics” and “mechanics” (Heidelberger, 1993). So “consciousness threshold” (or “limen”) is a fundamental point of Herbart’s theory: He introduced this concept in psychology and defined it, with calculation methods (concerning the history of the concept and its application in psychology, see Corso, 1963).

In Herbart’s vision, mathematics is therefore fundamental but not only in this respect. It has a basic role also in education, as “gymnastics” of thought, for the formation of the mind, in all its degrees (Herbart, 1804).

In fact, the mind, as well as the body, needs to find a “gym”, to test the “muscles” and renew the “elasticity”. In this context, the importance of mathematics is affirmed for all scientific disciplines; the teaching of mathematics should not be reserved for the last years of formation, but imparted from the earliest years in order to avoid a late, superficial, and hence fruitless learning of it.

Thus, mathematics plays an irreplaceable role in a complete education of young people.

3. FROM MATHEMATICS TO MATHEMATICS EDUCATION

Since mathematics was a foreground discipline, mathematics teaching became a major matter of study for students’ education as a whole.

The trace of Herbart’s influence is clear and recognized in the German cultural world between 1800 and 1900, and, specifically, his contribution was significant for mathematics education of that time, where important reformist tendencies in the study of teaching problems matured. It was a very fruitful period of research and deepening the understanding of these problems, in particular in the Middle-European cultural world, both for the innovation of the teaching methods and for the introduction of new subjects in the secondary school, first of all calculus (see Zuccheri & Zudini, 2014). In Göttingen, where Herbart had been professor, a prominent scholar of didactical problems was the mathematician Felix Klein (1849-1925) (see Corry, 2004).

An opportunity to examine and discuss the situation of mathematics education in various countries, with reference also to psycho-pedagogical considerations, was the Fourth International Congress of Mathematicians held in Rome (April 6-11, 1908). On that occasion, the “Commission Internationale de l’Enseignement Mathématique” (CIEM) or “Internationale Mathematische Unterrichtskommission” (IMUK) – thereafter, “International Commission on Mathematical Instruction” (ICMI) – was established, presided over by Klein, with the aim of promoting and spreading the interest of the mathematicians in school education. Together with this commission, the journal “L’Enseignement Mathématique” played an important role allowing communication and cooperation among scholars at international level (see Schubring, 2003, 2008; Furinghetti, 2003; Furinghetti et al., 2008).

Focusing on these aspects is of interest in so far as suggestions, which were drawn at that time, were destined to have rich developments, still resounding in current research in education and being relevant and useful for mathematics education of today.

3.1 METHODOLOGICAL SUGGESTIONS FOR MATHEMATICS TEACHING

Herbart had a significant influence on elementary school education. Traces of this influence were evident in most geometry textbooks for elementary schools of Klein’s time. In preschools (“Kindergarten”), according to Pestalozzi’s theory of intuition (“Anschauung”), picked up by Herbart, young children learned about the simplest spatial forms by playing with suitable objects.

These pedagogical ideas had been applied also in higher level schools. The school curricula proposed by Franz Serafin Exner (1802-1853) and by Hermann Bonitz (1814-1888) in Austria already around the middle of the nineteenth century adopted the “new” intuitive methods.

The same trends came to the fore, at the beginning of the seventies of the nineteenth century, in Prussia and, in general, in northern Germany. Instead of a rigid theoretical complex, like that of Euclid’s, a natural theoretical path, stimulating

the students' experience, should be preferred. In the specific case of geometry, the starting point was represented by drawing and construction, giving particular value to the formation of space intuition (see, in general, concerning geometry teaching and its history, Barbin & Menghini, 2014).

In Germany, as well as in the other countries, around 1890, new orientations were present, beside these ideas.

Firstly, a strong movement had set up, which wished for a deeper understanding of the applications of mathematics in all branches of natural sciences, particularly in technology, and of its importance for all aspects of human life. With this movement reformative trends were connected, which saw in the teaching of the concept of function, of graphic methods and fundamentals of calculus new stimuli for geometric teaching (see Zuccheri & Zudini, 2007, 2008). Klein himself, on the one hand, stressed the need to adjust the teaching methods and content to contemporary cultural trends and to demonstrate the way mathematics was applied in natural sciences and technology. On the other hand, he was convinced that there should not be too-clear distinctions, in teaching, between the various sections of mathematics, actually citing arithmetic and geometry as examples. He also highlighted the possibility of introducing students fairly early to the concept of function, using analytical geometry (see Klein, 1925, pp. 226ff.).

The mathematicians of Klein's time had, more than in the past, to deal with theories that were the result of "modern" psychological research, particularly in the field of experimental psychology. Beside Herbart's research, for example, the study of memory and of fatigue, conducted at that time by Hermann Ebbinghaus (1850-1909) (see Ebbinghaus, 1895) and by Georg Elias Müller (1850-1934), the director of the laboratory in Göttingen and successor, after Rudolph Hermann Lotze, to the chair of philosophy that Herbart had occupied (see Müller, 1911-1917), should be mentioned.

An important subject, precisely concerning mathematics, was that of individual differences in "talent" and intelligence. After a first period in which people had believed that "mathematical talent" existed – meaning with that expression that only students gifted in mathematics were able to understand mathematics – following the educational plans of Exner and Bonitz, a greater value was given to pedagogy and the opposite opinion developed, affirming that every student with good will and some effort (even by the teacher) should be able to learn mathematics.

In this context, also studies of the different mathematical "species" of mathematical talent were included, that is, for example, the commonly observed fact that a mathematician is more gifted from an arithmetic, abstract point of view than the one more oriented to work with intuitive shapes, from a geometric point of view. Studies had already been done on people who had developed remarkable capabilities in a well-defined field, such as those with significant computational capacity or chess players (see Binet, 1894).

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Impacts of Differentiation of Self on Interpersonal Relationship in Early Adulthood: Mediating Roles of Adult Attachment and Empathy

Dalsaem BAE

Pusan National University, South Korea
twinklebae@pusan.ac.kr

Min-hee KİM

Korea Counseling Graduate University
South Korea
pseudo@kcgu.ac.kr

ABSTRACT

This study investigated not only the relationship between differentiation of self and interpersonal relationship but also the mediation effect of adult attachment and empathy in the relationship between differentiation of self and interpersonal relationship. Structural equation modeling was performed with a sample of 386 Korean males and females in early adulthood. The results indicated that differentiation of self, adult attachment, and empathy were associated with interpersonal relationship. In terms of mediation effects, anxiety attachment, avoidant attachment, and empathy partially mediated between differentiation of self and problematic behaviors in interpersonal relationship. Avoidant attachment partially mediated between differentiation of self and satisfaction with interpersonal relationship. Based on these findings, it is expected that an intervention fostering level of empathy among early adulthood would have a positive impact on Interpersonal relationship. Moreover, knowing the client's attachment helps counselor build rapport with a client and plan a strategy. Also, the implications of the findings were discussed in the context of counseling and counseling programs. Suggestions for future research and practice are discussed with the limitation of this study.

INTRODUCTION

Interpersonal relationship is important through whole life, but the most important period is early adulthood. According to many psychologists, development task during early adulthood is to have an intimate relationship. The quality of the relationship has a decisive effect on individual life(Dreyfus, 1972; Erickson, 1963; Havighurst, 1972). To have an intimate relationship is the development task in early adulthood, but it is hard to adapt in rapidly extended relationship situation, so it cause anxiety of interpersonal relationships and problems about building relationship by themselves(Seokman Kwon, Jiyoung Kim, 2002). Hoffman & Weiss(1987) reported that psychological separation of an adolescent from his parents is important. If He isn't separated from his parents, he will have a lot of interpersonal relationship problems.

Bowen insists that differentiation of self is an important concept for relationship. First, Differentiation of Self is the ability to separate feelings and thoughts(Bowen, 1976). Undifferentiated people cannot separate feelings and thoughts. When they are asked to think, they are flooded with feelings, and have difficulty thinking logically and basing their responses on that. Further, they have difficulty separating their own from other's feelings. They look to family to define how they think about issues, feel about people, and interpret their experiences. Second concept of Differentiation of Self is the process of freeing yourself from your family's processes to define yourself(Bowen, 1976). This means being able to have different opinions and values than your family members, but being able to stay emotionally connected to them. It means being able to calmly reflect on a conflicted interaction afterward, realizing your own role in it, and then choosing a different response for the future.

Hoffman & Weiss(1987) reported that a person who has low level of differentiation of self couldn't build a good relationship because the person is so sensitive from outside reaction and lacks relationship ability.

According to previous study, when a person has high level of differentiation of self, the person also has a great empathy ability(Minsoo Lee, 2000). Bowen(1978) insists that a person who is low level of differentiation of self has problems about adult attachment development. Meanwhile, insecure attachment causes problems in interpersonal relationship(Jisun Park, Namhee Kim, Seongmoon Cheon, 2002). When the level of empathy decreases, it may happens problems in interpersonal relationship(Yeonhee Nam, 2008). Through these studies, this research supposes that the mediation effect of adult attachment and empathy in the relationship between differentiation of self and interpersonal relationship.

The research questions of this study were as follows

1. Does Differentiation of self impacts on Interpersonal relationship?
2. What are the roles of Adult Attachment and Empathy in the relationship between differentiation of self and interpersonal relationship in early adulthood?

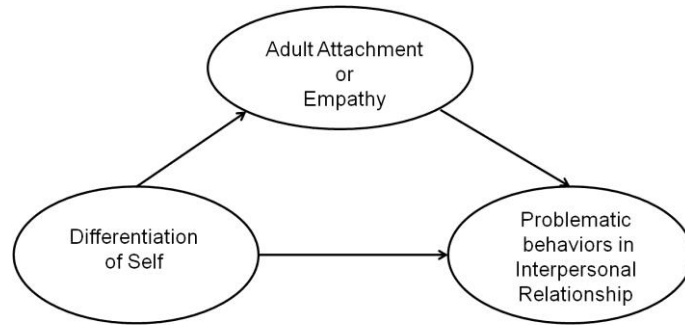


Figure 1. research model 1

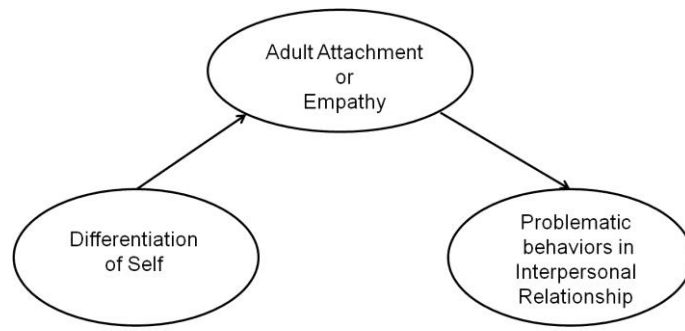


Figure 2. competitive model 1

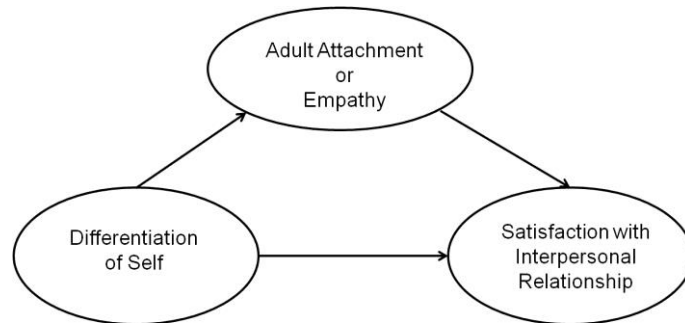


Figure 3. research model 2

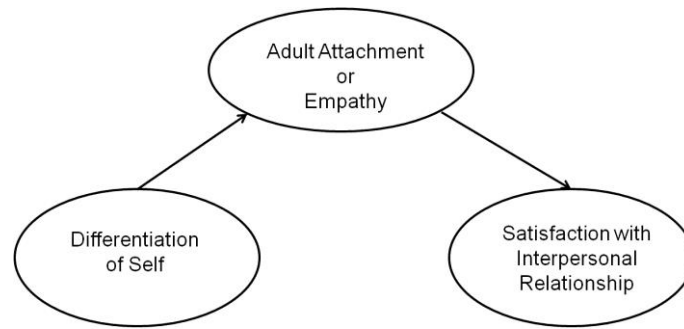


Figure 4. competitive model 2

THE STUDY

1. Participants

Participants were 386 Korean males and females in early adulthood. According to Levinson, Darrow, Klein, Levinson and McKee(1978), the range of early adulthood is from 17 years old to 40 years old.

2. Measure

2. 1. Self-Differentiation Scale for University Students(Seo, 2014)

It was measured with 36 items of 4 sub-factors(self-assertiveness, emotional regulation, others emotional consistency and emotional distance). Participants indicated how much they were like each statement on 5 point Likert scale.

2. 2. Korean version of Experiences in Close Relationships-Revised(ECR-R) Scales(Seong-Hyeon Kim, 2004)

It is Korean version of Experiences in Close Relationships-Revised(Fraley, Waller & Brennan, 2000). It was measured with 36 items of 2 sub-factors(anxiety attachment, avoidant attachment). Participants indicated how much they were like each statement on 7 point Likert scale.

2. 3. Korean Version of the Empathy Quotient-short Form(Yeo, 2012)

It is Korean version of short forms of the Empathy Quotient(Wakabayashi, Baron-Cohen, Wheelwright, Goldenfeld, Delaney, Fine, Richard & Weil, 2006). It was measured with 11 items. Participants indicated how much they were like each statement on 4 point Likert scale.

2. 4. Interpersonal Satisfaction Scales(Eun, 1999)

It reconstituted of Korean version of Relationship change scale(Lee & Mun, 1980). It was measured with 5 items. Participants indicated how much they were like each statement on 5 point Likert scale.

2. 5. Short form of the Korean Inventory of Interpersonal Problems Circumplex Scales(KIIP-SC)(Hong, Park, Kim, Kwon, Cho & Kim, 2002)

It is short version of Korean Inventory of Interpersonal Problems Circumplex Scales(KIIP-C). It was measured with 40 items of 8 sub-factors(domineering, vindictive, cold, socially avoidant, nonassertive, exploitable, overly nurturant, intrusive). Participants indicated how much they were like each statement on 5 point Likert scale.

FINDINGS

1. Correlations, Means, Standard Deviations

Table1 presents the correlations, Means, Standard Deviations. Most correlations are significant.

Table 1. Correlations, Means, Standard Deviations

	1	2	3	4	5	6
1. Differentiation of self	-					
2. Anxiety attachment	-.605**	-				
3. Avoidant attachment	-.468**	.264**	-			
4. Empathy	.273**	-.072	-.278**	-		
5. Satisfaction with interpersonal relationship	.531**	-.368**	-.459**	.221**	-	
6. Problematic behaviors in interpersonal relationship	-.703**	.632**	.488**	-.324**	-.494**	-
M	3.2527	3.0226	3.5310	3.0467	3.6085	2.2378
SD	.46178	.99507	.84527	.53013	.57069	.53128

** $p < .01$

2. Structural Equation Model

The structural model proposed was estimated through AMOS 18. Table 2 contains fit indices of research model and competitive model. These results indicate a good fit of the research model.

Table 2. Structural Equation Model

	Partial mediation research model					Full mediation competitive model				
	χ^2	df	TLI	CFI	RMSEA	χ^2	df	TLI	CFI	RMSEA
1. DS→AXA→PB	90.230	30	.975	.983	.073	203.764	33	.934	.952	.117
2. DS→AVA→PB	105.086	30	.965	.976	.082	289.234	33	.890	.919	.144
3. DS→E→PB	52.644	30	.988	.992	.047	307.855	33	.880	.912	.149
4. DS→AXA→S	51.526	24	.981	.987	.055	118.503	25	.939	.957	.100
5. DS→AVA→S	90.025	24	.947	.964	.086	148.882	25	.904	.933	.115

	B	β	S.E.	C.R.
1) DS \rightarrow AXA	-.658	-.672	.049	-13.286***
2) DS \rightarrow AVA	-.470	-.579	.049	-9.578***
3) DS \rightarrow E	.085	.277	.018	4.821***
4) DS \rightarrow AXA	-.653	-.673	.049	-13.414***
5) DS \rightarrow AVA	-.375	-.523	.043	-8.719***
6) DS \rightarrow E	.078	.269	.016	4.728***
1) DS \rightarrow PB	-.549	-.599	.053	-10.399***
2) DS \rightarrow PB	-.661	-.666	.054	-12.142***
3) DS \rightarrow PB	-.714	-.739	.047	-15.168***
4) DS \rightarrow S	.107	.635	.013	8.032***
5) DS \rightarrow S	.082	.499	.011	7.686***
6) DS \rightarrow S	.106	.626	.010	10.447***

6. DS \rightarrow E \rightarrow S	42.438	24	.985	.990	.045	157.733	25	.894	.927	.119
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3. Standardized Regression Weights

All paths is significant. As you see the β , you can know relative influence. According to Kline(2010), most β absolute value bigger than .10, so most model is effective except research model 4 and 6(anxiety attachment \rightarrow satisfaction, empathy \rightarrow satisfaction).

Table 3. Standardized Regression Weights

1) AXA \rightarrow PB	.237	.254	.051	4.681***
2) AVA \rightarrow PB	.221	.181	.062	3.579***
3) E \rightarrow PB	-.501	-.158	.129	-3.886***
4) AXA \rightarrow S	-.003	-.015	.013	-.197***
5) AVA \rightarrow S	-.064	-.282	.014	-4.559***
6) E \rightarrow S	.044	.075	.032	1.387***

4. Indirect effect

According to the bootstrapping, it is analyzed in 95% confidence interval. As the result, model 4 and model 6 are included in 0, so mediation effect is insignificant. However, other models are significant.

Table 4. Bootstrapping

	Direct effect	Indirect effect (95% confidence interval)	Total effect
1) DS→PB	-.599	-.170*(-.243, -.101)	-.770
2) DS→PB	-.666	-.105**(-.164, -.050)	-.771
3) DS→PB	-.739	-.044**(-.076, -.021)	-.783
4) DS→S	.635	.010**(-.099, .122)	.645
5) DS→S	.499	.148**(.093, .207)	.646
6) DS→S	.626	.020**(-.004, .058)	.646
1) DS→AXA	-.672	.000(.000, .000)	-.672
2) DS→AVA	.181	.000(.000, .000)	.181
3) DS→E	.277	.000(.000, .000)	.277
4) DS→AXA	-.673	.000(.000, .000)	-.673
5) DS→AVA	-.523	.000(.000, .000)	-.523
6) DS→E	.269	.000(.000, .000)	.269
1) AXA→PB	.254	.000(.000, .000)	.254
2) AVA→PB	.181	.000(.000, .000)	.181
3) E→PB	-.158	.000(.000, .000)	-.158
4) AXA→S	-.015	.000(.000, .000)	-.015
5) AVA→S	-.282	.000(.000, .000)	-.282
6) E→S	.075	.000(.000, .000)	.075

$N=376$, * $p<.05$, ** $p<.01$, *** $p<.001$

In terms of mediation effects, anxiety attachment, avoidant attachment, and empathy partially mediated between differentiation of self and problematic behaviors in interpersonal relationship. Avoidant attachment partially mediated between differentiation of self and satisfaction with interpersonal relationship.

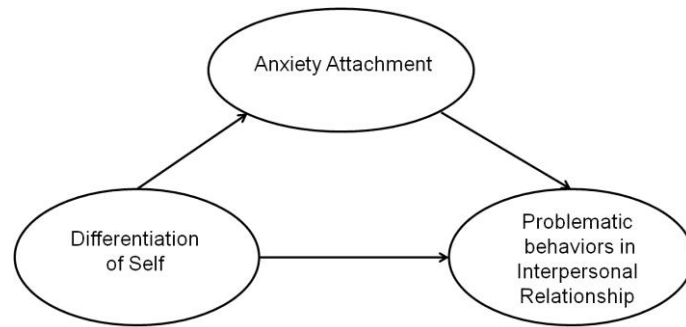


Figure 5. Final model 1

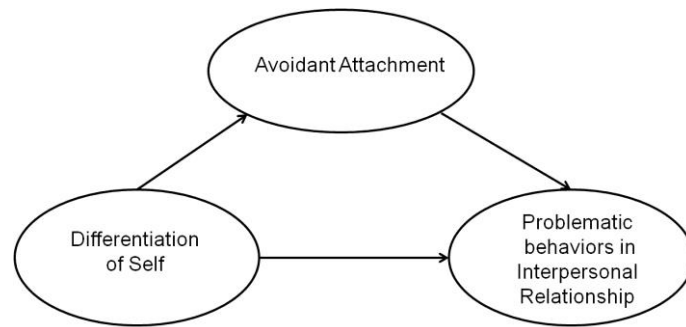


Figure 6. Final model 2

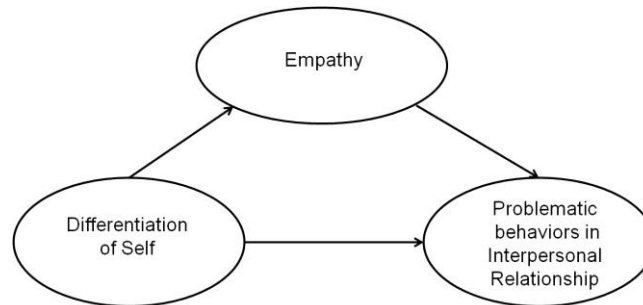


Figure 7. Final model 3

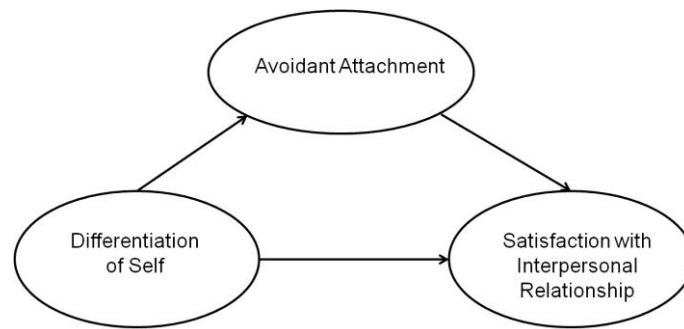


Figure 8. Final model 4

CONCLUSIONS

Based on these findings, it is expected that an intervention fostering level of empathy among early adulthood would have a positive impact on Interpersonal relationship. Moreover, knowing the client's attachment helps counselor build rapport with a client and plan a strategy. Also, the implications of the findings were discussed in the context of counseling and counseling programs.

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Implementation Managing Strategic for Innovation in High Vocational Education Systems (Hves): From Malcolm Baldrige National Quality Award (Mbnqa) for Improving Competitiveness of Graduates

Budhi HARYOTO

*Department of Vocational Education,
Malang State University, Indonesia
Polytechnic of Road Transport Safety,
Minister of Transportation
haryotobudi@yahoo.com*

MARDJI

*Department of Vocational Education,
Malang State University, Indonesia*

DARDIRI

*Department of Vocational Education,
Malang State University, Indonesia*

Eddy SUTADJI

*Department of Vocational Education,
Malang State University, Indonesia*

ABSTRACT

High Vocational Education (HVE) systems increasingly must rely on innovation as they seek creative approaches for improving the competitiveness of graduates while simultaneously dealing with regulatory and cost constraints. The management of innovation is an integral component of HVE systems that are recognized for their excellence by the Malcolm Baldrige National Quality Award (MBNQA). This paper identifies how does the implementation of program standards, objectives, programs, and targets to achieve competitiveness of graduates. The results indicate that HVE systems engage in Innovation Leadership by incorporating innovation into their vision, mission, and values statements and explicitly stating support from senior leadership; strategic planning for innovation by including innovation initiatives in strategic goals and action plans and soliciting stakeholder involvement in innovation; and management of innovation processes by integrating innovation with performance improvement efforts and harnessing human resources. Best practices are summarized to guide leaders in other HVE systems in bringing innovation to the forefront of their initiatives.

INTRODUCTION

The impact of the low quality of Higher Education management contributes to the performance of Higher Education in Indonesia, it can be seen in macro from the human resources product it produces, according to the International Labor Organization (ILO) data, in 2009 Indonesian Human Resources Productivity is ranked 83 out of 124 countries. Meanwhile, based on the research of International Management Development (IMD), which only researches for the Asian region, the position of Indonesia is still above the Philippines. IMD said, Indonesia occupies the position 35 of 57 countries. However, based on the calculation of national productivity in 2010, there is a nominal increase in productivity Rp21, 4 million. The amount increased from the year 2009 in the position of Rp20, 8 million per manpower. Other impacts due to the low quality of Indonesian education can be seen from the Indonesian Human Development Index (HDI) as reported in UNDP 2013, HDI in 2012 from 187 countries published by HDI, Indonesia is ranked 121st, including countries with HDI medium (index 0.629, Is ranked 5th out of ten ASEAN countries under Thailand (103) and Philippines (114) and above Cambodia (138) and Myanmar (149).

Education as a means to educate the life of a nation that is represented in qualified human resources as output products becomes a very important sector to be considered more focused. Recognizing the importance of

education for the excellence of a nation, a qualified and competitive education system is required as a mandate from the 1945 Constitution resulting from the amendment of Article 31 paragraph (3) The Government shall undertake and organize a national education system, which enhances faith and piety and morals Noble in order to educate the life of the nation, which is regulated by law. Higher education management in Indonesia is based on the governance of the government-run Higher Education administered by PP. 60 of 2010 article 58F (2) states that in the field of organizational management, the Rector or Director shall determine 1) Strategic and operational plan 2) Organizational structure and work procedures 3) Internal control and supervision system 4) Internal quality assurance system.

The discrepancy between rhetoric and the reality of the quality of education has become an unpleasant experience and story. It is undeniable that the quality of the higher education system „ tends to favor the institutional aspect rather than the quality student aspect, and tends to lean more on the view of accountability led instead of the improved view of quality assurance ledge (Chung Sea Law, 2010).

The main practice of Total Quality Management (TQM) and Supply Chain Management (SCM) of 50 TQM practices and 40 SCM practices find that management support and commitment from education management, and partnerships have a strong impact on TQM and SCM integration across the organization F Talib, Rahman, and Qureshi, 2011). Quality Management (QM) correlates with the quality performance of management of educational institutions. It was also found that a culture of quality is regarded as a dominant QM practice in performance quality. Other practices such as system quality, training and education, teamwork, and benchmarking show a positive relationship with performance quality (Faisal Talib, Rahman, and Qureshi, 2013). Identifying and using key performance measures consistent with the mission and core values of institutions and seeking continuous improvement offers an opportunity to create value education in higher education (Beard, 2009). The concept of quality and strategy maps is tools that can be used to describe a conceptual framework for describing the quality assurance system and institutional performance (Kettunen, 2008).

Improving authentic quality is more likely to result from an approach to systemic intervention that encourages the exploration of questions of purpose and meaning from enhancement of the educational context (Houston, 2008). Stakeholder conceptual frameworks are defined quality dimensions. In addition, the results indicate a discrepancy in students and faculty perceptions of the importance of factors in what constitutes a higher quality of educational provision. The main difference is that students consider courses and courses offered by higher education institutions and teaching and learning that take place in the institution as the most important dimension of higher quality education provisions. The teaching staff, though, consider student support services, teaching and learning Facilities and student checks and assessment as the most important dimension (Iacovidou, Gibbs, and Zopiatis, 2009).

Thus, sustainable development begins with growing academic research and has the potential to influence government policy in the future (Linton, Klassen, and Jayaraman, 2007). Integrity and effectiveness through job requirements analysis, model workload and findings from case studies of university education implementation there are aspects of policies and procedures that need to be modified where processes and outcomes of institutional change (Paewai, Meyer, and Houston, 2007).

Expectations for better performance, in terms of teaching and producing competent graduates of higher education are increasing. Beginning with planners so that education either at university level, faculty or department should pay attention to quality. Faculty must constantly update their knowledge and skills and use various and appropriate methods in teaching and assessment activities. The department should provide the context for further communication with other universities and professors in the same string together and the establishment of meetings on departmental issues. It is necessary that the educational program and strategy be prepared appropriately with the community and the needs of the students. It should be emphasized on improving academic quality rather than from quantitative aspects. It is clear that in order to obtain the ideal level, the necessary reforms and changes needed to improve quality and empower their strong points (Yarmohammadian, Mozaffary, and Esfahani, 2011).

The importance of relational and ethical intelligence and may also have significance for university leaders in

matching academic teaching activities. This has the potential to get student feedback to make learning better (Scott, 2015). The faculty is increasingly pursuing research grants resulting in decreasing job satisfaction, better understanding of benefits and limitations, hierarchical approaches to better managing management at faculty and university level (Anderson and Slade, 2016). An effective working model is based on principles of equality and transparency in the distribution of academic work consisting of three major domains of teaching, research, and service-administration (Robertson and Germov, 2015).

Several researchers have considered quality models as operational frameworks for TQM (e.g., Bohoris, 1995; Ghobadian and Woo, 1996; Curkovic et al., 2000; Van der Wiele et al., 2000; Yong and Wilkinson, 2001; Lee et al., 2003). These authors consider that quality award models reproduce TQM by capturing its main constituent parts and by replicating its core ideas in clear and accessible language. Nevertheless, the empirical validation of the extent to which these models reproduce TQM is scarce, partial, and limited to some empirical studies such as Curkovic et al. (2000), who conclude that MBNQA and its criteria do capture TQM core concepts. In the context of the EFQM Excellence Model, this question remains unanswered and, therefore, more research is needed (Carlos, 2008).

From this evidence it would seem to follow that Baldrige-based self-assessment would be a useful step toward organizational excellence. Baldrige-based assessment can be helpful in attaining a variety of organizational development goals, including: (1) fostering organizational self-reflection; (2) educating participants about dimensions of organizational excellence; (3) team-building; (4) increasing and enhancing communication; (5) professional development; (6) promoting comparisons and benchmarking; (7) identifying improvement needs; providing a model of organizational excellence; (8) benchmarking; (9) performance measurement; and leadership development (Ruben, 2007).

In such a context then the management of universities must be a basic foundation for the arrangement and improvement aimed at producing qualified graduates of universities with academic qualifications that can be accountable to the public. Ted Wall, a professor of management education from McGill University (Tony Bush and Coleman, Marianne, 2012), said that university management should start from awareness of all academic community, especially for university leaders. That is, every policy is taken solely to improve academic quality. Problems faced in managing universities, as one of the main causes or factors that affect the quality of college graduates, can be included if all elements both stakeholders and all academic community have commitment, consensus, and completion in the form of a supportive situation to make changes. Commitment will create a managerial awareness that managing universities tends to be based on a concept that is first, activation, both verification-investigation and inclusion. This managerial concept is important to be developed into a formal juridical commitment by higher education institutions in order to have a standardized standard in every process of managing an organization whose term is intellectual product.

However, Changes in technological progress are in line with changes in human needs. The human desire to always create something never stops. To evaluate challenges that are fraught with precision, the educational process must be able to anticipate, Understand and accept the situation overcoming, accommodating, reorientation of learners for improving competitiveness of graduate's high vocational education systems.

Polytechnic of Road Transportation Safety (PKTJ), which is one of the educational institutions to print graduates of midwives in the field of transportation under the Ministry of Transportation should also have to anticipate the development. PKTJ consisting of 3 study programs: Road Transportation Safety Management (DIV), Automotive Safety Engineering (DIV), and Vehicle Testing (D3) has been established since 1971.

The root of other problems is that local governments and communities have not utilized optimally the existence of special study programs - the field of transportation as a regional human resources development tools that are competitive and have special competencies needed by stakeholders in Tegal area in particular and pantura in general, so do not become Challenges in implementation strategy of study program by PKTJ Tegal. Based on the above explanation, PKTJ Tegal must prepare themselves to be a college that is not only qualified but also must be able to compete and excel towards other universities. In order to improve the quality of graduates and job

opportunities from the Transportation Polytechnic, it is necessary to conduct a research Implementation Managing Strategic for Innovation in High Vocational Education Systems (HVES): From Malcolm Baldrige National Quality Award (MBNQA) for Improving Competitiveness of Graduates?

THE STUDY

In this study used the natural paradigm (naturalistic paradigm) with qualitative research methods. In the use of the naturalistic paradigm and qualitative approaches and research strategies of case study types, this study is intended to look at the symptoms of the actor's own frame of reference, i.e. to interpret the activity or event from the perspective of the perpetrator called the "emic perspective". Qualitative research should be "emic perspective" means in obtaining data not "as it should", not based on what the researcher thinks, but based on what is happening in the field, experienced, felt and thought by the participant or source data. Researchers conducted data collection through interviews, observations, questionnaires and document review. As observers (observatory), researchers trying to free themselves from any bias that can affect the results of research.

The research was conducted at Polytechnic of Road Transportation Safety (PKTJ) of Tegal City, Central Java Province. The time of the research is planned for 3 months and it is hoped that the research can be started in 2016, covering the preliminary stage, data collection, data analysis and the preparation of research result. In this study, various events, information, answers in the form of words and actions of people observed or interviewed, are the main types of data. The main data types are written sources, while the second data is recorded through written records or through recorders. Data The main in qualitative research is the "words and actions of sources of written data, photographs, and statistics."

The main data in this study are all managers, responsible and implementer of environmental study program PKTJ Tegal, which is a special study program to meet the demand of engineers and expert personnel in supporting transportation safety. While secondary data can be classified based on source, which is internal data and external data. Internal data obtained from within organization of educational institution itself, which relevant with research topic, while external data is data obtained from outside organization but still relevant to be used as research data.

METHOD

In this study used the natural paradigm (*naturalistic paradigm*) with qualitative research methods. In the use of the naturalistic paradigm and qualitative approaches and research strategies of case study types, this study is intended to look at the symptoms of the actors' own frame of reference, ie to interpret the activities or events from the standpoint of the perpetrator called the "emic perspective". According to Cress well (2008) qualitative research should be "emic perspective" means in obtaining data not "as it should", not based on what the researcher thinks, but based on what is happening in the field, experienced, felt and thought by the participant or source data.

FINDINGS

The study results showed that HVE systems engage in Innovation Leadership by incorporating innovation into their vision, mission, and values statements and explicitly stating support from senior leadership; strategic planning for innovation by including innovation initiatives in strategic goals and action plans and soliciting stakeholder involvement in innovation; and management of innovation processes by integrating innovation with performance improvement efforts and harnessing human resources. Best practices are summarized to guide leaders in other HVE systems in bringing innovation to the forefront of their initiatives in PKTJ.

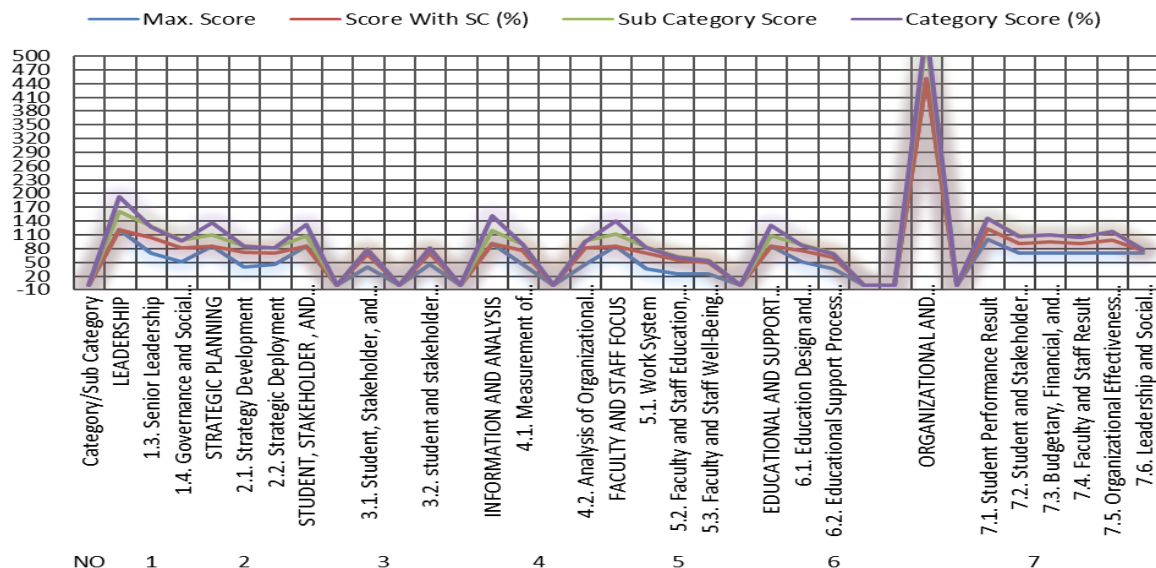


Figure 1. Leadership performance in PKTJ

Based on table 1. The total Value of 168,4208, With the lowest Category Value in Category 7 of 11% so that recommendation given related to Organizational and Performance Result, especially on Sub Category Faculty and Staff Result and Leadership and Social Responsibility Result.

The Baldrige category education implementation in PKTJ are designed to assist organizations in applying an integrated approach to managing organizational performance that results in continuous value enhancement to students and stakeholders, directly contributing to improving the quality of education while enhancing the effectiveness, organizational capacity and individual learning.

Category 1 Leadership conducts an assessment of the individual behavior of senior PKTJ leaders in guiding and sustaining organizational sustainability, including how to guide organizational governance, and its adherence to the rule of law, ethics, responsibility to the community and support to Relevant communities of importance.

Category 2 Strategic Planning assesses the way universities' organizations develop strategic objectives and workplans. Assessment of deployment of selected strategic objectives and work plans, including adjustment and measurement of progress, is also carried out.

Category 3 Students, stakeholders and market focus will assess the way in which the organization of Higher Education handles the role and commitment of students and stakeholders in achieving successful study programs in higher education for longer periods. This handling strategy also includes how to build a Higher Education culture that focuses on students, stakeholders and the job market / industry. How the University's organizations hear complaints, and use that information to refine and identify opportunities for innovation.

Category 4 Measurement, Analysis and Knowledge Management assesses the way PKTJ organizations select, collect, analyze, manage and improve data, information and knowledge assets and how to manage information technology. This category also assesses how the organization reviews its performance and uses the review data to improve the performance of higher education organizations.

Category 5 Focus on faculty and faculty assesses the way in which the organization of the College puts, manages, and develops its lecturers and education personnel to fully utilize its potential in alignment with the organization's overall mission, strategy, and work plan. Also assess the need for capability and capacity of lecturers and educational staff to build an environment conducive to achievement of superior performance.

Category 6 Process Management assesses how the organization of PKTJ makes the design of the work system and how the design, management, and improvement of key processes for implementing a work system to value students and stakeholders, and achieve organizational success and sustainability.

Category 7 Organizational Work Results assesses organizational performance and improvement across key areas as outcomes of PKTJ graduates, focuses on students and stakeholders, financial and market outcomes, focuses on labor, results of process effectiveness, and outcomes of leadership . The performance level of higher education is assessed and compared with other similar universities, or competitors in the implementation of Higher Education. The result assessment process with these educational is excellent, each category has different

assessment weight, and each criterion also has a key item that has different rating scale. This indicates the existence of the criteria of compliance (requirement criteria) that must exist at a higher education.

The total value of leadership of 168,4208., With the lowest Category Value in Category 7 of 11% so that recommendation given related to organizational and Performance Result, especially on Sub Category Faculty and Staff Result and Leadership and Social Responsibility Result. Experiment in Civil Engineering Faculty get the total value of 252.225, with the lowest Category Value in Category 7 of 20% so that the recommendations given relating to organizational and Performance Result, especially on Sub Category Leadership and Social Responsibility Result

CONCLUSIONS

The results indicate that HVE systems engage in innovation leadership by incorporating innovation into their vision, mission, and values statements and explicitly stating support from senior leadership; strategic planning for innovation by including innovation initiatives in strategic goals and action plans and soliciting stakeholder involvement in innovation; and management of innovation processes by integrating innovation with performance improvement efforts and harnessing human resources. Recognized for their excellence by the Malcolm Baldrige National Quality Award (MBNQA) in PKTJ best practices are summarized to guide leaders in other HVE systems in bringing innovation to the forefront of their initiatives and for improving competitiveness of graduates.

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Implementing Numbered Heads Together Strategy to Year 5 Students: An Alternative Approach to Teaching Writing

Sri Kartika A.Rahman

*Sultan Hassanah Bolkiah Institute of Education,
Universiti Brunei Darussalam
kartika.rahman@ubd.edu.bn*

Harinah Mohd Shara

*Sultan Hassanah Bolkiah Institute of Education,
Universiti Brunei Darussalam
alairaena@hotmail.com*

Suraya Tarasat

*Sultan Hassanah Bolkiah Institute of Education,
Universiti Brunei Darussalam
kartika.rahman@ubd.edu.bn*

Noradinah Jaidi

*Sultan Hassanah Bolkiah Institute of Education,
Universiti Brunei Darussalam
noradinah.jaidi@ubd.edu.bn*

ABSTRACT

This quasi experimental study aimed to explore the effect of Numbered Heads Together strategy on performance in picture essay writing among Year Five students at a primary school in the district of Belait, Brunei Darussalam. A total of 20 students were samples in the treatment group while 19 were in the controlled group. The treatment group was taught using the Numbered Heads Together strategy while the controlled group was taught as usual. The instruments employed were pre and post-tests. Data were analyzed using the Statistical Package for Sosial Sciences (SPSS) and presented in descriptive analysis of t-test and ANCOVA. Findings show a significant difference in the overall mean score for achievement in picture essay writing for the experimental group as shown by the pre and post-tests ($t = -12.867$, $p = 0.000$). Meanwhile the ANCOVA test shows a significant difference for achievement in picture essay writing between the treatment and controlled groups ($p = 0.000$, $p < 0.05$).

Keywords: writing, Numbered Heads Together, quasi-experimental study, Malay language, Brunei

INTRODUCTION

Writing is in fact a challenging task, not only for students but also for teachers. It is very important that teachers have good knowledge on writing strategies to enable them to provide effective writing skills for students. Teacher must be able to choose wisely from the numerous teaching and learning method, technique or strategy in order to improve student's achievement. According to Yahya (2005), diversity in writing strategy is needed to improve student's writing quality.

One of the aims of writing at primary schools in Brunei Darussalam (BD) is to equip students with the skill to produce educational and creative essays (Curriculum Development Department, 2009). The percentage of marks distribution in the national primary school essay writing examination is for language, content and technique. The content aspect constitutes the biggest percentage in comparison to other aspects. This means that failure to present content and ideas in essay writing will affect one's overall marks or grades.

In the process of writing, teachers are encouraged to relate students' life experiences to help them generate ideas. According to Roselan (2003), students' personal experience or other people's experience are the most basic source of idea. Apart from experience, visual aids may also be used to stimulate ideas in developing a good essay. Visual aids such as pictures, videos and charts can increase achievement in essay writing. This is in line with studies by Sri Kartika, Mesra Adikasuma, Suraya, Abu Bakar & Noradinah (2014) who stated that visual aids such as pictures help students generate or brainstorm ideas for factual essays and this helps increase their achievement in essay writing. Meanwhile, a study by Yahya and Azmey (2012) shows that visual aids not only help in generating ideas but also in elaborating the ideas. In addition, the study by Noradinah, Yusri, Suraya dan Sri Kartika (2014) shows that an ICT material that is iMindMap shows positive effect in increasing students' achievement in essay writing. Currently, several studies related to the use of techniques or approaches in the teaching and learning of essay writing in BD have been carried out. This is in line with the Ministry of Education in encouraging teachers to use various teaching and learning resources and techniques in teaching Malay language that suit the students' ability in order to increase students' interest towards the Malay language subject; including writing in the language (Curriculum Development Department, 2009).

To maximise mastery of the writing skill, teaching and learning needs to be arranged carefully so that students can be involved actively. Hence, the use of cooperative learning in teaching and learning leads to active participation among students. This is supported by Christmas (2009) who said that active participation in group activities will help students generate several questions and explore various perspectives of answers from their friends. This can increase students' skills from generating ideas to producing creative writing.

Hence, this study explored the effect of the use of Numbered Heads Together; a cooperative learning strategy. This strategy is introduced by Kagan in 1989 as an alternative approach to actively engaged students in question and answer sessions (Kagan, 1994). In this study, the class was divided into five groups and each member within the group was assigned a number (1 to 4). Teacher presented a problem to solve, and each member were given few minutes to think the answer individually before they share their answers with the group. Later as a group, they have to agree with just one answer. Next the teacher called a number and the person with the corresponding number had to answer the problem. This strategy would therefore encourage student to think, interact, cooperate and support intermediate and low level students.

OBJECTIVES AND RESEARCH QUESTIONS

This study was carried out to explore the effect of Numbered Heads Together on achievement in picture essay writing among Year Five students. The research questions of the study were:

1. Is there a significant difference in the mean score for overall achievement in picture essay writing between the treatment and control groups in the pre-test?
2. Is there a significant difference in the mean score for overall achievement in mastery of content for picture essay writing between the treatment and control groups in the post-test?
3. Is there a significant difference in the mean score for overall achievement in picture essay writing between the students in the treatment and control groups in the post-test?
4. Is there an effect of the significant difference in the mean score for overall achievement in picture essay writing between the students in the treatment and control groups in the pre-test and post-test?

METHODOLOGY

This quantitative study employed a quasi-experimental research design involving students in two existing classroom who were placed into two groups – treatment and control groups. Sidek (2002) and Akhiar and Shamsina (2011) believe that a quasi-experimental study involves samples who are not randomly selected and aims to teach new skills or new approaches in solving problems by applying the approach in the classroom.

Table 1: Pre and post- test research design

Group	Pre-test	Treatment	Post-test
Experimental	T ₁	X	T ₂
Control	T ₁		T ₂

Source: Sidek (2002)

X : Treatment class using the NHT strategy to be taught in the experimental group

T₁ : Achievement in the pre-test for the experimental and control groups

T₂ : Achievement in the post-test for the experimental and control groups.

RESEARCH SAMPLE AND SETTING

A total of 39 students were involved in this study. They were put into two groups; 20 students in the experimental group that received the treatment and 19 in the control group. Each group consisted of students who were of mixed abilities, gender, background and different levels of achievement.

According to Jorgensen (1989), the decision to choose the research site should be related to the research problem. Thus, one public (government) primary school in the Belait district chosen based on the following criteria as outlined by Marshall dan Rossman (2011):

- 1) There is no objection to carrying out the research. It was possible to conduct the research at the school as the Headteacher, Malay language teacher and the students were cooperative.
- 2) Good opportunity in the data collection process. This was because good response and cooperation were given by the school and the research samples.
- 3) Capable in building a relationship based on trust between the researcher and the samples. The researcher was the trust and permission by the school to teach two Year Five classes.
- 4) Confident in getting quality and credible data for research purpose.

There were 10 male and 10 female students in the experimental group. Meanwhile there were 10 male and 9 female students in the control group.

DATA ANALYSIS

Data in this study was gathered from the students' scores in the pre and post-tests. Data was gathered and analysed using the Statistical Package for Social Sciences (SPSS) version 20. T-test was employed to compare the means for the pre and post-tests for both the experimental and control groups. Meanwhile, the ANCOVA covariant analysis was employed to see the effect of Numbered Heads Together strategy on achievement in writing.

FINDINGS AND DISCUSSION

The findings were presented on the basis of the research question formulated the study:

Research question 1: Is there a significant difference in the mean score for overall achievement in picture essay writing between the treatment and control groups in the pre-test?

Based on the following Table 2, the mean score for overall achievement in picture essay writing for the experimental group is 24.35 (SD= 6.72) while the mean score for the control group is 25.11 (SD= 6.08).

Table 2: T-test sample scores for overall achievement in picture essay writing between the treatment and control groups in the pre-test

Group	N	Mean	Standard deviation (SD)	T-value (t)	Significance level (p)
Experimental	20	24.35	6.72	-.37	.715
Control	19	25.11	6.08		

This finding shows no significant difference between the mean scores in achievement between the experimental and control groups in the pre-test; $t(39) = -.37, p > 0.05$ ($p = 0.715$). This shows that the students' achievement from both groups is similar in the pre-test.

Research question 2: Is there a significant difference in the mean score for overall achievement in mastery of content for picture essay writing between the treatment and control groups in the post-test?

The following Table 3 shows a difference in mean score of 6.26 in the post-test achievement for content in picture essay writing between the experimental (mean = 22.00, SD = 4.413) and the control group (mean = 15.74, SD = 4.593).

Table 3: T-test sample scores of achievement in mastery of content for picture essay writing between the treatment and control groups in the post-test

Group	N	Mean	Standard deviation (SD)	T-value (<i>t</i>)	Significance level (<i>p</i>)
Experimental	20	22.00	4.413	4.343	.000
Control	19	15.74	4.593		

This finding shows there is a significant difference in scores for content in picture essay writing between both groups in the post-test $t(39) = 4.343, p < 0.05$ ($p = 0.000$). This significant difference proves an increase in achievement in mastery of the content for picture essay writing after the treatment given on the use of Numbered Heads Together strategy. This shows that the students in the experimental group were able to master the content for picture essay writing in comparison to the control group. The learning activities in the Numbered Heads Together enabled the students in the experimental group to increase their thinking skills and work together in brainstorming ideas, until they were able to produce a concise, organised and creative essay. This finding is similar to studies by Vass, Littleton, Miel dan Jones (2008), Salem (2011), Rao (2007), Mohammad Fawzi and Ali (2013) that show learning in groups is able to increase thinking skills and make students focus in discussion as well as organise ideas to produce a creative writing.

Research question 3: Is there a significant difference in the mean score for overall achievement in picture essay writing between the students in the treatment and control groups in the post-test?

The following Table 4 shows the mean score of overall achievement in picture essay writing for both groups in the post-test. The mean score for the experimental group is 36.05, SD=7.911 and for the control group is 26.05, SD=6.671. This shows a difference of 10.00 in the mean score for overall achievement in picture essay writing among students in both groups.

Table 4: T-test sample scores for overall achievement in picture essay writing between the students in the treatment and control groups in the post-test

Group	N	Mean	Standard deviation (SD)	T-value (<i>t</i>)	Significance level (<i>p</i>)
Experimental	20	36.05	7.911	4.255	0.000
Control	19	26.05	6.671		

Finding shows a significant difference in overall achievement in picture essay writing between the experimental and control groups in the post-test, $t(39) = 4.255, p < 0.05$ ($p = 0.000$). This shows that the use of Numbered Heads Together has increased students' achievement in picture essay writing. This is congruent with studies by Dotson (2001), Maheady *et. al* (2006), Christina (2009), Ivy (2009), Ong and Tan (2010) as well as Gintings and Ramini (2012) which showed students' achievement increased in the post-test.

Research question 4: Is there an effect of the significant difference in the mean score for overall achievement in picture essay writing between the students in the treatment and control groups in the pre-test and post-test?

To answer this research question, the ANCOVA covariant analysis was used to see the effect of student achievement in the pre and post-tests. The following Table 5 shows a significant difference in mean score for the pre and post-tests ($F = 101.731$, $p = 0.000$). This shows that the treatment given to the students in the experimental group that used the *Numbered Heads Together* was able to increase the students' achievement in the post-test.

Table 5: Ancova test for overall achievement in picture essay writing for experimental and control groups in the pre and post-tests

Source	Type III Sum of Square	Df	Mean Square
Corrected Model	2565.320 ^a	2	115.896
Intercept	78.415	1	7.085
Pre-test	1591.473	1	143.799
Group	1125.890	1	101.731
Error	398.424	36	
Total	40878.000	39	
Corrected Total	2963.744	38	

$R\text{ Squared} = .866$ ($Adjusted\ R\text{ Squared} = .858$)

The following Table 6 shows that the achievement for the experimental group which the students were taught using the *Numbered Heads Together* (mean = 36.05; mean consistent = 36.426) was better than the control group where the students were not taught using the *Numbered Heads Together* (mean = 26.05, mean consistent = 25.657). Based on the ANCOVA test, it shows that the *Numbered Heads Together* was able to increase the students' achievement in picture essay writing. Thus, there is a significant difference effect on mean score for overall achievement in picture essay writing between students in the experimental and control groups in the pre and post-tests.

Table 6: Mean, Standard deviation, consistent mean and Standard Error for picture essay writing for experimental and control groups in the pre and post-tests

Group	N	Mean	Standard deviation (SD)	Mean	Standard Error
Experimental	20	36.05	7.911	36.426 ^a	.745
Control	19	26.05	6.671	25.657 ^a	.764

Note: a. Calculation for the covariant value for pre-test is 24.72

Hence, findings shown in Tables 5 and 6 indicate the relationship between *Numbered Heads Together* with picture essay writing which result in a significant difference between the experimental and control groups in the post-test.

CONCLUSION

This study was conducted to explore the effect of using *Numbered Heads Together* on achievement in picture essay writing among Year Five students in a school in the Belait district, NBD. The *Numbered Heads Together* used is one of the cooperative learning strategy. According to Ali, Seyed Hossein, Manijeh and Hassan (2007), cooperative learning has a significant effect on students' academic progress. Findings from this study shows positive achievement in the experimental group in comparison to the control group. *Numbered Heads Together* is also useful in increasing students' overall achievement in picture essay writing for students in the experimental group. Apart from that, the *Numbered Heads Together* also have a positive effect on students with low or intermediate proficiency level.

The observations taken during the implementation of the strategy showed that the students were actively participating and were brave to contribute their creative and rationale ideas or thoughts. The students showed they were having fun working together. Richards (1990), Rao (2007) and Gintings and Ramini (2012) stresses that communication among school children is an important aspect that help students actively participate to generate ideas in the writing process as well as making learning process more interesting and fun. Thus, teachers should give the opportunity to students to interact and discuss with their friends as a group during writing process.

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Implication of Model of Acceptance and Behavior Usage of Mobile Learning in Higher Education of Indonesia

Syamsul Arifin

*Institut Teknologi Sepuluh Nopember (ITS),
Surabaya, Indonesia
syamsul@ep.its.ac.id*

Aulia Siti Aisjah

*Institut Teknologi Sepuluh Nopember (ITS),
Surabaya, Indonesia
auliasa@ep.its.ac.id*

Punaji Setyosari

State University of Malang (UM), Indonesia

ABSTRACT

This paper discussed the result of modeling the acceptance and usage behavior of mobile learning (M-AUBmL) and the implications for student learning. M-AUBmL explains the factors which influenced the acceptance and use of m-learning behavior. M-AUBmL consisted of 6 variables that are adopted from the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB), moreover 4 variables are added, such as: the lecturers perceived readiness, perceived peer student readiness, and perceived facilitating conditions. The samples are taken from 294 students who have used the m-learning in their following the course of learning activities of online learning portal- ITS SHARE whereas the students fill out an online questionnaire. The students come from various universities in Indonesia, such as: ITS Surabaya, U-Telkom Bandung, ITN Malang, and the University of Sriwijaya Palembang. The AUBmL model analyzed its model suitability using confirmatory factor analysis (CFA) with maximum likelihood estimation (MLE) approaches. The result shows that AUBmL models has good fit and has implications to be determined by students and designers of m-learning implementations in order to be more effective.

Key words: mobile learning (m-learning), goodness of fit, acceptance, usage behavior, ITS, Indonesia

INTRODUCTION

M-learning began to be developed widely and used in the world of education, both in national and international levels. Several studies have been conducted and published in several international journals. Publications of study results generally explain the findings related to the characteristics of m-learning and acceptance by learners in learning activities (Šumak, Heric, & Pušnik, 2011). The development of phenomena from web 1.0, web 2.0 and web 3.0 that has been popularized by Tim O'Reilly and John Batelle is able to push the changing of learning paradigm (Tim O'Reilly, 2012). Students learn not only based on face-to-face in the classroom, but they spend more time in outside the classroom using web-based information and communication technology (ICT).

Learning in 2011 entered the era of massive and open learning, and is known as a massive open online course (MOOC) that is by utilizing the development of web technology. MOOC is an online learning resource where people learn in massive amounts through open network knowledge connectivity. They interact in real-time within the learning community and with contextual lesson-oriented of learning achievements. The MOOC has grown as an open university that is fully implemented online. Some of the MOOC's organizers are Udacity, Coursera, edX, which provides more than 1000 subjects by reaching of 190 countries (Pomerol, Epelboin, & Houry, 2015).

The Indonesia government through the Directorate of Higher Education (DHE) in Ministry Research, Technology, and Higher Education has initiated an online learning as MOOC. The online learning is called Open and Integrated Indonesian Open Learning (*Pembelajaran Daring Indonesia Terbuka dan Terpadu* - PDITT). PDITT is an ICT-based distance learning. The goal of PDITT is to equalize learning quality over the archipelago area in Indonesia, and affordability of unreached areas in conventional learning models. PDITT in 2014 has held 30 subjects from ITS, ITB, University of Indonesia, Gajah Mada University, Bina Nusantara University and APTIKOM. Each course is followed by a minimum of 100 students. In 2017 number of subjects is 3000 organized by universities in Indonesia.

Learning in Indonesia has begun to shift from classroom-based to ICT-based learning. The usage of mobile devices cannot be avoided in student learning activities. The learning problems are shift from paper and pen-based learning to the issues of acceptance and behavioral use of m-learning. This paper describes the factors that influence to students in willing to use m-learning and what are the implications of learning. The study was conducted by taking samples of ITS and Sriwijaya University students after they followed the lessons through share.its.ac.id. M-

Learning activities in 16 weeks. After completed lessons, the student fills in the questionnaire by online at <http://share.its.ac.id>. The number of data is 294 of a free outlier. The data will confirm the feasibility of AUBmL model by using Structure Equation Modelling (SEM).

The results of this research are: (1) to explain the factors that influence the acceptability of usage of m-Learning in student learning, (2) to know the implication of AUBML model on the use of a mobile device in the learning process. This information for the welcome of massive open online course (MOOC) in Indonesia.

LITERATURE REVIEW

Mobile Learning

The term of mobile learning or abbreviated "m-learning" involves the use of mobile welfare, either alone or combination of utilizing information and communication technologies. The use of m-learning allows students to learn anytime, anywhere, about anything and anyone. Students can use m-learning tools to access learning resources, communicate with peer learning, and access or store content, collaborate both inside and outside of the classroom.

Mobile technology is currently growing rapidly in the form of mobile devices, smartphones, phablets, tablet computers, e-readers, portable audio and video players, etc. Mobile devices are widely used in everyday activities, such as for learning activities. Mobile devices used for learning are termed m-learning. M-learning is learning to cross multi-context through interaction of content and social interaction by using personal electronics device (Crompton, 2013, p. 48). UNESCO defines m-learning as learning by utilizing mobile devices connected to the network to communicate, access and store data, play audio and video synchronously or asynchronously. M-Learning by using the online social networking software (SNS) that is Facebook, Twitter, and MySpace, has been used regularly by millions of people. Most of the SNS user communities are students. In fact, a survey conducted in 2011 of 3,000 students from across the US revealed that 90% of students use Facebook and 37% uses Twitter (Dahlstrom, de Boor, Grunwald, & Vockley, 2011).

The proportion of those SNS in Indonesia are as follow: Facebook of 51.5 million people (23.4%), Twitter of 19.7 million people (8.9%) and mobile users almost the same as Indonesian people that are 248 million (Kominfo, 2013). This condition is a great opportunity and potential if it can be used to support online learning in formal education units as well as learning in the wider community. Nevertheless, SNS Facebook that has been widely used by students to interact socially is still a lot of entertainment purposes and not for serious things (Lin, Hou, Wang, & Chang, 2013). While the use of m-Learning in blended learning mode using SHARE-ITS learning management system (LMS) has been able to assist students in subjects of Modern Control System from different study program, ie Electrical Engineering Department-ITS, ITN-Malang and U-Telkom- Bandung, and also in Electrical Engineering UNSRI Palembang in Sumatra island to achieve the established competencies. (Arifin, Aisjah, Faqih, & Gamayanti, 2012).

Research Development on Model Acceptance of M-learning Usage

Research on the acceptability and usage of new technology are based on theories or concepts of social psychology, such Theory of Reasoned Action (TRA). The TRA is first proposed by Fishbein and Ajzen (1975). (Fishbein & Ajzen, 1975). TRA has been developed first by Icek Ajzen (1991) to the Theory of Planned Behavior (TPB). The main variables of TRA and TPB are intentions of performance in certain behaviors. (Ajzen, 1991, p. 181). Fred D. Davis (1989) constructs an acceptance models of usage new technologies, especially in information systems. This model is known as Technology Acceptance Model (TAM).

The TAM model was adopted from the Theory of Reasoned Action (TRA). TAM predicts that the acceptability of usage new information technology is influenced by three factors: (1) perceived usefulness, (2) perceived ease of use, and (3) behavioral intentions. Another study has been done by Devis et al. (1989) found that TAM as a predictor of acceptance of new information technology devices is better than TRA (Davis, Bagozzi, & Warshaw, 1989). Taylor and Todd (1995) built a combination model of TPB and TAM. The combined model of TAM and TPB abbreviated as C-TAM-TPB. The C-TAM-TPB model adopts the TAM model by adding two variables, namely subjective norms and behavior controls (perceived behavior control) derived from TPB theory. The C-TAM-TPB model has used in predict the intentions research of someone who is inexperienced or experienced in the usage of new technology.

Venkatesh, Morris, Davis, & Davis (2003) reviewed some new models of information technology acceptance. The elements of each model were united and become a new model is Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003). The three latent variables (construct) in UTAUT models that influence behavioral intention of usage new technology, ie performance expectancy, effort expectancy, and social influence. Two latent variables that directly affect usage behavior, ie behavioral intention and perceptions of the condition of the facility (perceived facilitating conditions). The UTAUT model is also accompanied by four moderator variables: gender, age, experience, and voluntariness (Venkatesh, Morris, Davis, & Davis, 2003).

Theory of Reasoned Action (TRA) is a concept of social psychology used for research on acceptance usage of m-learning in student learning activities (Fishbein & Ajzen, 1975). The model of acceptance new technology in information systems fields is Technology Acceptance Model (TAM) (D. Davis, 1989). TAM is a joint model of Theory Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) (Ajzen, 1991). Another model of acceptance and behavior usage m-learning is the Model of the Acceptance and Usage Behavior of m-Learning (M-AUBmL). M-AUBmL consists of 6 variables adopted from TAM and TPB and 4 additional variables. The additional other variables are perceived lecturers readiness, perceived of peer student readiness, perceived of self-efficacy, and perceived facilitating conditions.

RESEARCH METHODS

Hypothesis of AUBmL

The proposed study is named of AUBmL. The hypotheses on variable models are based on 2 variables proposed of theory TPB (Ajzen, 1991) and TAM theory (Davis F. D., 1989), and 4 external variables are chosen in accordance with the usage of m-learning in college (Davis F. D., 1989). The four variables as the latent variables are adopted from TPB, namely: (1) usage behavior of m-learning, (2) behavior intention to use, (3) perceived behavioral control, and (4) subjective norms or other terms as also referred to the social environment (Dembo & Seli, 2013). In addition to the previously mentioned variables, we add hypotheses to other latent variables. This variable is adopted from the Technology Acceptance Model (TAM) (Davis F. D., 1989), namely: behavior intention to use, perceived ease of use, perceived usefulness, and usage behavior of m-learning.

Factors influence between variables, are as follows: (1) Subjective norms directly influence of intention to use behavior, (2) perceived behavioral control the direct influence of behavior intention to use and usage behavior of m-learning, (3) behavior intention to use directly influence of perceived ease of use and perceived usefulness. The effect of perceived usefulness is greater than the effect the perceived ease of use on behavior intention to use (Arifin, Setyosari, Ardhana, & Kamdi, 2014). Perceived ease of use has a direct effect on perceived usefulness (Davis, Bagozzi, & Warshaw, User acceptance Of computer technology: A comparison Of two, 1989; Cheon, Lee, Crooks, & Song, 2012). Behavior intention to use directly affect the behavior of usage behavior of m-learning (Davis, Bagozzi, & Warshaw, 1989; Ajzen, 1991).

The four external variables added in research, are; (1) perceived lecture readiness), (2) perceived peer student readiness, (3) perceived self-efficacy, and (4) perceived facilitating conditions. The first two variables are predicted to affect directly of subjective norms, namely the influence of lecturers and other colleagues on the perception of usage m-learning. The influence of these two variables to assess the online implementation in education in Indonesia. The last two variables: perceived self-efficacy and perceived facilitating conditions are predicted to directly affect perceived behavior control.

Problem of Research

The problems in the research are: (1) whether the perception on self-ability using m-learning influences the perceived behavior control of usage m-learning, (2) to determine how significant the influence of perception of facility condition to behavior usage m-learning in Indonesia. The results of this study can be used to design the implementation of m-learning in universities and higher education institutions in Indonesia.

Hypothesis

The 11 hypotheses proposed in this study are:

- H₁: Intentions behavior in using m-learning affect the usage behavior of m-learning.
- H₂: Perceptions of the usefulness of m-learning that students believed will influence their behavior intention in using m-learning.
- H₃: Perception of ease in use of m-learning is believed by the students will affect their behavior intention in using m-learning.
- H₄: Perception of ease in the use of m-learning is believed by the students will affect the perception of the usefulness of m-learning.
- H₅: Student subjective norms on m-learning will affect their behavior intention in using m-learning.
- H₆: Perceptions of the lecturer readiness in using m-learning will affect the subjective norms of students in using m-learning.
- H₇: Perceptions of colleagues readiness in using m-learning will affect the subjective norms of students in using m-learning.
- H₈: Perceptions of student control behavior in using m-learning will affect their behavior intention in using m-learning.
- H₉: Perceptions of student control behavior in using m-learning will affect the usage behavior m-learning.
- H₁₀: Perceptions of students' self-abilities in using m-learning will effect on their perceptions of behavioral control in using m-learning.
- H₁₁: Perceptions of the condition of facilities in using m-learning will affect the perception of student control behavior in using m-learning.

Structural Model and Measurement Model of M-AUBmL

The structural model and AUBmL measurement model are constructed based on questions in research, and the theory. Hypotheses of influence between constructs on the AUBmL model are tested for truth.

The AUBmL model explains that any influence of exogeneous constructs (ξ) on endogeneous constructs (η) is expressed in one-way arrows with regression coefficients of γ . Any influence of exogeneous constructs (ξ) on endogeneous constructs (η) is expressed by one-way arrows with regression coefficients of β . Each endogenous construct (η) has a measurement error or residual regression value of ζ . The Equation of measurement which states the relationship between indicator (manifest) the X and Y with the latent construct is ξ dan η . The relationship of X and Y is expressed by the factor loading value (λ). Each measurement has an error, ie: measurement error indicator of X is expressed in δ , and error measurement indicator of Y is expressed in ε .

Data Collection

Respondent in this research is the student as participants using m-learning which entered in SHARE-ITS online learning network. The students are from Engineering Physics Department of ITS and Computer System Department of Sriwijaya University in the even semester of 2013/2014 and 2014/2015. The two universities are separated in different islands. ITS in east Java islands and Sriwijaya University in Sumatra Island. Students after completing the activity in the online lecturing, they fill out the online questionnaire through the link <http://share.its.ac.id>. There are two choices of the questionnaire sheets, the first is a questionnaire sheet for those who use m-learning with the Moodle SHARE-ITS platform and the second of those who use m-learning with Facebook's social networking platform. Students who have completed the question in the questionnaire is 294. Respondents consisted of 57% male and 43% female. The mobile device used consists of 34% of smartphone users, 7% of the user table-PC, and 59% of notebook users.

Data Analysis

Cleaning of outlier data is done by using the distance of Mahalanobis value that is greater than χ^2 (36; 0.001) = 67,99. Data that has been outlier-free of 294. Furthermore, the data is normality tested in each of ten constructs. Normality test data by using Kolmogorov-Smirnov and Shapiro-Wilk methods with the significance level of $\alpha = 5\%$. Normality test results are obtained of each of the ten constructs of a distributed normally models. The ten constructs are (1) perceived ease of use (PEU), (2) perceived usefulness (PUF), (3) behavior intention to use (BIU), (4) perceived lecturer readiness (LR), (5) perception peer student readiness (PSR), (6) subjective norm (SN)), (7) perceived self-efficacy (SE), (8) perceived facilitating conditions (FC), (9) perceived behavioral control (PBC), and (10) usage behavior of m-learning (UBmL). The data is used to estimate the AUBmL hypothesis model using the maximum likelihood estimate (MLE) method.

THE RESULT AND DISCUSSION

Reliability and Construct Validity of AUBmL Models

The reliability of the construct is tested by Cronbach alpha value in the limit of ≥ 0.70 , which the construct is declared to be reliable (Cortina, 1993; Cronbach, 1951). The validity of each construct indicators is expressed by the significance value of each indicator relationships to the construct. The value of indicators ≥ 0.30 are valid (Cronbach & Shavelson, 2004). SPSS is used as software in determining of Cronbach alpha. Constructs of PEU, LR, PSR, SE, BIU, PUF, SN, PBC and UBmL from the output of SPSS show the Cronbach's alpha value ≥ 0.70 . This value indicates that the nine constructs are reliable. The value of Cronbach's alpha = 0.628 for the FC construct, while the value of the calculation result uses the construct reliability (CR) formula is 0.713. This value shows that FC constructs are also reliable. Cronbach's alpha approach for estimating the reliability of congeneric measuring gives the too low estimate (Bollen & Curran, 2006). In SEM to estimate the reliability of the construct used composite reliability measure (CR) and variance extracted measure (VE). CR and VE calculations for each of the ten constructs are: PEU, LR, PSR, SE, FC, BIU, PUF, SN, PBC and UBmL have $CR > 0.7$ and $VE > 0.5$. This shows that ten constructs have an excellent reliability. The result of standardized factor loadings λ on each indicator is ≥ 0.5 . This indicates that each item is valid as the indicators that make up its construct (Hair, Black, Babin, & Anderson, 2009).

Analysis Goodness of Fit AUBmL Models

The AUBmL model was designed and analyzed using the maximum likelihood estimation (MLE) method and IBM AMOS version 21. In this study the value of goodness of fit index (GOF) is based on 3 parameters, ie: absolute fit measures, incremental fit measures, and parsimonious fit measures (Hair, Black, Babin, & Anderson, 2009). The GOF value of the model of acceptance and the behavior of m-learning (M-AUBmL) is as follows: GFI=0.9, RMSEA=0.0749, $df=453$, CFI=0.920, TLI=0.889, NFI=0.879, IFI=0.922, $\chi^2/df=2,583$, and PGFI=0.581. The GOF values indicate that the AUBmL models is good of fit (Arifin, Setyosari, Ardhana, & Kamdi, 2015, pp. 105-110). The AUBmL model and value of goodness of fit are shown in Figure 1 below.

The Result of Hypothesis AUBmL Models

A hypothesis test is done on t-value and the level significance of 0.05. The t-value is a critical ratio (C.R) or probability (p) are obtained by IBM AMOS software version 21. The value of | C.R. | will decide H_0 is rejected or accepted. The output of software value of | C.R. | $\geq 1,967$ in the probability value (p) $\leq 0,05$. This shows that the H_0 is rejected, and the meaning that hypothesis of the AUBML models is accepted (Byrne, 2010; Kline, 2011). The result of hypothesis test shows that the acceptance and the behavior of the use of m-learning (M-AUBmL) model is acceptable.

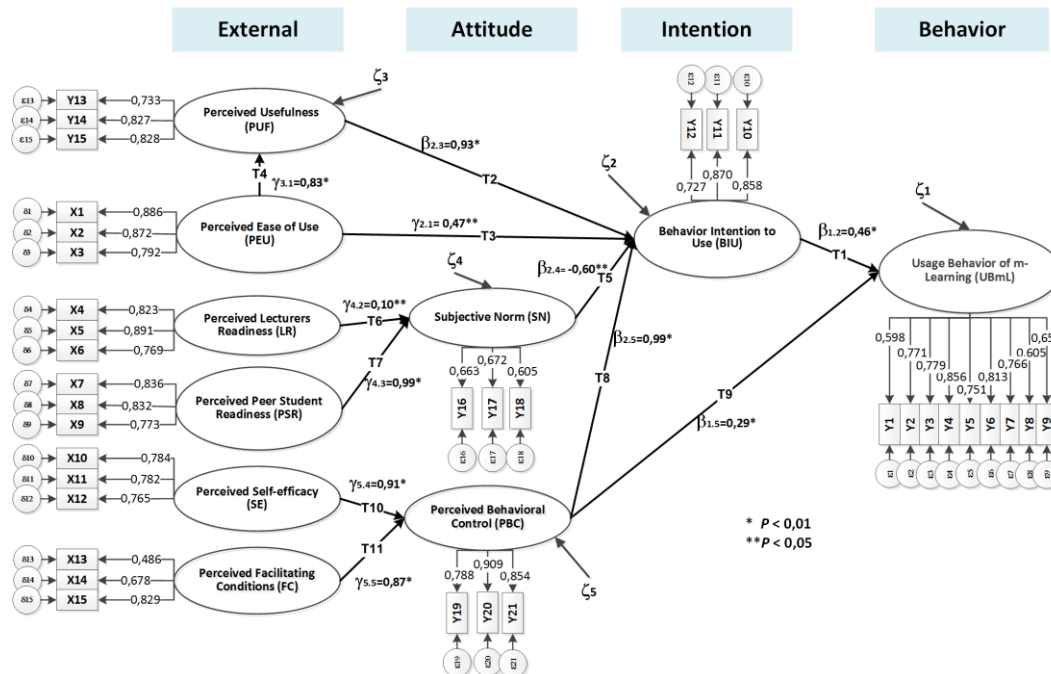


Figure 1. Model of the acceptance and usage behavior of mobile learning (M-AUBmL)

Implication of AUBmL Models in Student Learning

The implication of AUBML models on the use of m-learning in student learning activities is viewed from two things, the first of what students need to do, and the second is what designers need to design m-learning to make more effective and efficient learning.

What do Student Need to Do:

- Selecting the most suitable and convenient a mobile device that will foster self-belief and self-motivation to use m-learning.
- Increasing the knowledge and improving the skills of usage of m-learning that will foster self-confidence that he/she perceived self-efficacy using m-learning in her/him participated in learning activities,
- Establishing discussion forums in online or offline to share experiences and information in using m-learning that it can strengthen of perceived behavioral control,
- Familiarizing in use of application program to read, count, play video, and discuss of both synchronous and asynchronous that it can strengthen perceived self-efficacy, and
- Sharing of information sources that can be accessed to overcome the difficulties that occur in the use of m-learning.

What do the Designer of m-learning Implementation:

- Choosing the software to be used as a content management system (CMS) and learning management system (LMS) that is tailored m-learning characteristics,
- Making ease and simplicity of navigation that it can lead to useful perceptions by students,
- Choosing the size and offering format of contents that are light and in accordance with the characteristics of m-learning,
- Utilizing cloud storage facilities to strengthen of perceived facilitating conditions,
- Paying attention to the size of the touch screen mobile devices is not less than 4 inches to reinforce of perceived ease of use
- Providing the appropriate display mode in mobile devices to enhance perceived ease of use.

CONCLUSION AND SUGGESTION

Conclusion

Based on the analysis and discussion, it can be concluded that:

- The AUBmL models have been good of a fit as a model of acceptance and usage behavior of m-learning, it is supported by the degree goodness of fit is a good fit.
- The models have explained what factors influencing the acceptability and usage behavior of m-learning and has able to estimate both of new and old users of m-learning
- The factor has predicted an acceptance of new users are: perceived ease of use and perceived usefulness, whereas factor has predicted an acceptance of experienced users are: perceived lecture readiness, perceived peer student readiness, perceived self-efficacy, and perceived facilitating conditions.
- The AUBmL models show two implications of student learning activities in the use of m-learning: the first; what students need to do to prepare themselves for using of m-learning. This is by choosing an easy-to-use mobile tool and forming the usability perceptions for using m-learning along their learning activities, as well as increasing a knowledge and skills of using m-learning, and actively in discussion forums to strengthen self-perception and control behavior- perception in use m-learning. The second is what the designer to implement m-learning. This is chosen mobile devices to access is ease, LMS software and CMS, as well as content.

Suggestion

The further research needs to be done:

- The influence of lecturers or instructors as the factor that can build a positive perception and a confidence of student to use m-learning.
- It is necessary a model by developing indicators related to perceived lecturers readiness in using m-learning when he/she interacting with students. The sample is developed for lecturers.

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Importance of Architecture for the Success of Primary Education

Arzu CAHANTIMUR

*Uludag University Faculty of Architecture
Department of Architecture
Bursa/ Turkey
arzucahan@gmail.com*

Rengin BECEREN OZTURK

*Uludag University Faculty of Architecture
Department of Architecture
Bursa/ Turkey*

ABSTRACT

One of the main aims of architecture as a professional discipline is to provide sufficient spaces for different functions in everyday life. Architectural programs impose this idea throughout their curriculums to both the undergraduate and graduate students. People can be more happy and successful in their everyday life if they are in the right places that provide suitable physical and environmental conditions for them. These places should meet the basic physical and psychological needs of people. Furthermore, they should be adaptive to the rapidly changing requirements of the related functions. In this study, a research of architectural graduate students about the design parameters of primary school buildings is presented. The aim of their research was to find out how the quality of primary school education can be increased via architectural design. The aim of the course was to make the fresh architects conscious about the relationship between people and their environment and the impact of design on this relationship.

Keywords: architectural design, architectural education, environment-behavior, primary education

INTRODUCTION: ENVIRONMENT-BEHAVIOR INTERACTION AND ARCHITECTURAL DESIGN

The well-known professionals studying in the field of environment-behavior studies (EBS) like Altman, Craik, Ittelson, Rapoport, Sommer, Stokols, Wapner, Werner, and Wohlwill put stress on the bilateral relationships between behavior and physical environment. On the one hand, human behavior, including evaluative and responsive psychological processes, can be seen as the “result” of the “physical” environment. On the other hand, human behavior also including interpretative and operative psychological processes can be seen as the “cause” of this physical environment, if the environment is considered as “natural”(Bonnes, Bonaiuto, 2002). Stokols and Altman (1987), explain different scales of human actions affected by the physical and spatial dimensions of the environment as intrapersonal, interpersonal, group, intergroup and societal levels. As a conclusion of their literature analysis Bonnes and Bonaiuto (2002), indicate that, according to the leading professionals, the term “place”, with its spatial-physical properties, activities and meanings, is at the center of the interaction of environment and human behavior.

The term “place” is at the center of another discipline, which is “architecture“. The theory and practice of architecture, of which main aim is to build appropriate environments for biological, psychological, socio-cultural needs of people, is very interested in every level of place making. Thus, the discipline and education of architecture include many aspects and results of environment-behavior interactions. Especially, after the adoption of “universal design” paradigm, which can also be seen as “design for all ” or “accessible design” in the literature, “user-oriented” approaches have began to be preferred rather than egocentric approaches in architecture. Understanding the relationships in between environment and human behavior gains more and more importance for architects in order to design sufficient “place”s for people having differing ideas and needs.

Environment – Behavior studies constitute a considerable place in architectural education. The interaction system and its outcomes are often discussed at architectural studios in order to make the students conscious about the importance of user preferences during the process of architectural design. Furthermore, in depth researches and analysis are handled throughout the graduate courses having theoretical inclusions. In the scope of this paper, a research made by the students of one of the graduate courses undertaken at Architectural Department of Uludağ University in Bursa/Turkey will be presented. The research made in the context of environment-behavior interaction system and the proposals of the students that offers better learning places for primary schools will be explained in the following sections.

A GRADUATE COURSE OF ARCHITECTURE: ENVIRONMENT-BEHAVIOR AND DESIGN

The graduate course titled as “Environment-Behavior and Design” is one of the compulsory courses at the Graduate Architecture Program in Uludağ University. The first author is the coordinator of the course and the second author was the invited lecturer of the course at 2016-17 autumn semester. The course is given at the first semester of the graduate education, which has six semesters totally. It has three hours a week and 6 ECTS. The aim of the course is to make the fresh minded architects conscious about the importance of the interactions in between environment and human behavior and the importance of this interaction system on architectural design. It is a known fact that people can be more happy and successful in their everyday life if they are in the right places that provide suitable physical and environmental conditions for them. Architects should provide them places that meet their basic physical and psychological needs. Furthermore, these places should be adaptive to the rapidly changing requirements of the related functions.

Every semester a new research topic is given to the students, after some readings from the literature. The selected readings are both from the basic and contemporary ones, in order to let them understand the development of the theoretical approaches and perspectives in environment and behavior studies. The research topics are selected together with the students considering their areas of interest. Topics are chosen from a large variety of human groups and social groups like elderly, children, youth, office workers, outside workers. The only principle of selecting a research topic is not to repeat the similar studies. The research topic of 2016-17 autumn semester was children. The aim of the research was to find out how the quality of primary school education can be increased via architectural design.

INVESTIGATION OF THE ROLE OF ARCHITECTURAL DESIGN FOR THE SUCCESS OF PRIMARY EDUCATION

Successful architects are professionals who have special knowledge and capability for taking an effective role in the formation and transformation of the physical environment, can work in collaboration with the other disciplines. Having the ability of making analysis, synthesis and interpretation and also having awareness on the necessity of lifetime learning architects orientate their professional knowledge according to needs of different groups of users of the buildings they design. At this point, the research area of environment-behavior studies helps them to analyze the multidimensional and complex structure of human behavior and to come to consistent decisions for the users and their customers.

The assignment of the course was to answer the question; “is there anything we can do **as architects** to improve the quality of primary education?” First of all, they had a brainstorming session in one of the lessons. Their main idea was that; education spaces and systems, which have been the same for more than a hundred years, should be changed if we want new generations to be creative and to be happy and to be proud of themselves. Then they made an in depth literature analysis and examined the basic approaches of psychology and education about childhood. They read the works of notable researchers like Damon(2002), *Bringing in a New Era in Character Education*, Elkind(1976), *Child Development and Education*, Montessori(1963a,b,1964), *The Secret of Childhood*; *Education for a New World*; *The Montessori Method* , Piaget (1926,1951,1970), *The Language and Thought of the Child*, *Play, Dreams and Imitation in Childhood*, *Science of education and the psychology of the child* and Russell(1956), *Children’s Thinking*. They tried to understand the psychological and physical needs of children throughout their education process when they are in school. Then they searched for the buildings of primary education from different countries of the world. They analyzed both the architectural plans and site plans of the buildings, and also the interior decoration principles and the building materials used in these buildings. They argued the differences and the similarities of the buildings and the reasons of them. After these researches the students offered some proposals for the architectural design criteria of primary school buildings. Their aim was to offer more sufficient places for children in order to make their learning process easier, happier and more creative. Before their proposals they conceptualized their ideas with the help of the famous work of Lefebvre (1974), *The Production of Space*. At the end of the semester the students shared their ideas with each other via visual presentations and persuasive essays.

The research outcomes and proposals of the graduate students of architecture aiming to improve the success of primary education can be summarized as the following;

Outcomes of the literature analysis:

When the development processes of children are evaluated it is seen that all of the three major development processes are interrelated with spatial perception of the human beings. They are socio-emotional development process that lasts for a lifetime, perceptual-cognitive development processes that last from birth to nearly twelve and physical-motor development processes that last from birth to nearly eighteen (Kamii,1982). They learned two important things about learning process of children. The first one is that learning is an individual process and

every child may have a different capacity and way of learning. These may be learning from nature, learning with playing, interactive learning, individual learning, group learning. Thus, learning places should have different properties. The second one is that environmental stimuli have great effects on children throughout their learning process. By the help of this information the students come to the point that it is not a sufficient approach to design a standard type of learning place whether it is a school or a classroom or any kind of place for education.

Outcomes of example building analysis:

When the examples of primary school buildings from different countries are examined it is seen that most of the buildings have nearly the same plan scheme and nearly all of them have the same interior design. Some examples of classrooms from very different parts of the world, having very different cultural backgrounds, but having nearly the same forms and interior settings can be seen in photo 1. They also find some sufficient example buildings in different countries, which have more flexible places for different kinds of activities



Rabat/Morocco



London/ UK



Tokyo/Japan



Moscow/ Russia



Abidjan / Ivory Cost



Sao Paulo/ Brazil

Photo 1: Classroom examples from different countries (URL 1)

Proposals of the Students:

After the analysis of literature and example buildings, our students developed some proposals within three basic scales that are used in architectural studies. These are macro scale including urban and neighborhood interrelations like topography, density and accessibility; mezzo scale including architectural design of the buildings or building groups, their interior relations with each other and with the circulation areas, the relationships of inside and outside areas, the transition spaces, and at last the interior of the basic units which are classrooms; micro scale including constructional details, building materials, equipment and furniture.

In the context of these three scales of architectural design the most important design keywords for them were flexibility, transparency, sustainability and spatial hierarchy. They believed that the use of these keywords throughout architectural design of the schools would let the children be more happy and creative when learning. The suitable education places for primary education should let children to experience, to search, to think, to produce and to evaluate. Thus, these places should be flexible and transparent in order to let them feel free and active. Having flexible and transparent places children may orientate themselves both for individual and team works and also for silent studies and different kinds of presentations. A sufficient hierarchical system including different types of places for needed activities throughout the day is another vital necessity. The right hierarchical system of architectural scheme let visual and aural communication be more active. If children dominate and influence their physical environments easily, they can be at the core of the education process. The other vital design keyword is sustainability. Our students think that this term should be taken into consideration with its three basic components not only for the design and construction of the primary school buildings, but also throughout their lifecycle including the education process they accommodate.

At the end of this study all of the students come to the point that from macro scale to micro scale all of the design criteria should be taken into consideration with the determined keywords; flexibility, transparency, sustainability and spatial hierarchy. The basic requirements they determined can be summarized as the following.

The location of the school buildings should be proper for the target group of students and accessible for them via walking, cycling. The orientation of the building should meet the ecological sustainability criteria in order to benefit from natural assets. The basic units of the buildings, which are classrooms, should be proper for different kinds of educational activities in size, form and indoor physical requirements. The circulation areas should be taken into consideration as social places for informal meetings and should be livable spaces all day long. The outdoor areas in and around the building should meet varying kinds of outdoor activities of children. They should have a hierarchical relation with the inside of the building and also with the natural environment around. The equipment and the furniture used should be suitable in size, form and material. They are very important elements for children's belonging feeling and should have qualifications providing this feeling for them. Beside all of these requirements, the construction system and the building materials used in every stage of the construction and every part of the school buildings should be suitable for the flexibility of the building and also should be sustainable materials. Some examples of flexible use of the classrooms can be seen in photo 2. Some examples of flexible and transparent use of circulation areas can be seen in photo 3.



Photo 2: Flexible classroom examples from different countries (URL 2)

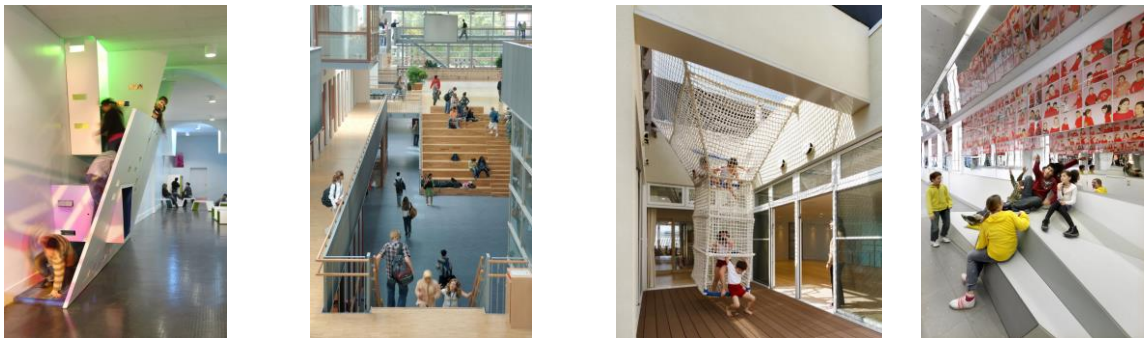


Photo 3: Flexible and transparent from different countries (URL 3-6)

CONCLUSIONS

Throughout the first part of 2016-17 Autumn semester, in 7 weeks course time, this research work gave a chance to the graduate students of architecture, in the other words the young, fresh minded architects, to understand how essential are the multidimensional interrelations of environment and human behavior. They also understood the importance of having an integrated and holistic point of view in order to provide sufficient spaces for people having different qualifications and needs in everyday life. Furthermore, they examined the links between physical, psychological and social aspects and architectural design projects of specialized functions. At the end of their initial literature analysis they reached to a conclusion that childhood development has unique characteristics and have to be handled with significant importance during building design for children in order to let them be more creative and happy. Physical environments have a great importance for this development process as a whole. By the help of their example analysis our students understood that the architectural design of primary school buildings having very similar properties although being in different parts of the world should be changed. To meet the needs of children who have varying ways and times of learning, architects should offer different types of education places, which have different specialities.

In the scope of this graduate course the young architects learned how to make literature analysis via scientific sources and how to make synthesis of the data they obtained. In particular, they adopted the value of relationships in between environment and human behavior for their career. They developed design criteria for a special group of users in the case of primary education buildings.

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Importance of the Role of Education on Basic Problems of Measuring and Determining Costs in the Company

Zuzana CHODASOVÁ

*Institute of Management of the Slovak University of Technology
Slovak Republic
zuzana.chodasova@stuba.sk*

Mária ĎURIŠOVÁ

*Faculty of Management Science and Informatics
University of Žilina
Slovak Republic
Maria.Durisova@fri.uniza.sk*

Alžbeta KUCHARČÍKOVÁ

*Faculty of Management Science and Informatics
University of Žilina
Slovak Republic
Alzbeta.Kucharcikova@fri.uniza.sk*

Zuzana TEKULOVÁ

*Slovak Republic
zuzana.tekulova@gmail.com*

ABSTRACT

The spheres of business of companies include manufacturing of products, provision of services or a combination thereof. In a transportation company the sphere of business includes mainly shipping services. Shipping activities, as any other activities of a production or service company, are immediately associated with costs. The costs are the main item affecting the price of the shipping performance. The objective of this contribution is to point out the importance education of the comprehensive approach to management of costs in a transportation company. The contribution outlines a procedure for management of costs in a transportation company and describes the individual activities. It includes monitoring of the costs, analysis of the current status and development, identification of problems, proposed measures and verification of their effectiveness.

Key words: costs, shipping performance, types of costs, average and marginal costs, management of costs

INTRODUCTION

Costs of a transportation company influence its economic results. Shipping is a service the basic parameters of which (shipping quantity, time, direction are determined independently of the carrier that uses its production factors to perform the shipping. Costs are the financial expression of the consumption of company's production factors. The input for decision-making about the shipping performance is the comparison between its costs and proceeds. The costs are the main item affecting the price of the shipping performance. The objective of this contribution is to point out the importance of the comprehensive approach to management of costs in a transportation company. The contribution outlines a procedure for management of costs in a transportation company and describes the individual activities. It includes monitoring of the costs, analysis of the current status and development, identification of problems, proposed measures and verification of their effectiveness. The spheres of business of companies include manufacturing of products, provision of services or a combination thereof. In a transportation company the sphere of business includes mainly shipping services. Shipping activities, as any other activities of a production or service company, are immediately associated with costs. In comparison with other businesses, transportation companies have their characteristic features which result from the essence of the shipping activity. The main mission of transportation companies is to provide shipping services to their customers, i.e. they do not produce (manufacture) products.

Costs and proceeds fundamentally influence normal and sound functioning of any transportation company. The shipping costs make it possible to assess quality of the work as they express how much has been spent on one service, including its implementation. Decision-making about implementation of a shipping performance is nearly always based on comparison of the costs and proceeds. Transportation companies use the term of costs in the sense of consumption in general. It is reasonable to use the term working costs because they represent costs relating to a particular performance, activity or department of the company. The working costs in transportation represent consumed materialized and live work and financial means expended on shipping and other

performance in a particular period of time, under typical conditions of a reproduction process in the individual transportation departments or transportation companies.

BASIC PROBLEMS OF MEASURING AND DETERMINING COSTS IN THE COMPANY

It is not easy to monitor and measure costs in the company. The initial recording of cost information is carried out particularly in accounting that classifies costs by types, which represents one of the basic cost classifications. Likewise, this cost information is used in budgeting. The classification of cost by calculation is the main information source in drawing up an offering budget for prices, etc. Conditions have still not been created in our companies for this classification of costs, though it has great importance in the market economy at planning, economic analysis and pricing.

Each business performance can be carried out only through connection of variable and fixed costs. Therefore, the total costs act as mixed costs containing different types of variable and fixed costs. That has a major impact on average costs calculated per performance unit. While we consider variable costs for proportional, having no effect on average unit costs, fixed costs have a different effect. The same volume of fixed costs is distributed over more or fewer performance units, thus changing their share in a performance unit. It is important especially at the fixed costs that are related to capacity utilisation. A relative fixed cost saving or overrun arises with a different level of capacity utilisation. The relative saving of fixed cost is of particular importance because each production increase above the previous level does not require some new inputs of fixed costs. The relative saving can be arising as far as there is unutilised capacity, and can be reached either by higher intensity of activity, or by extension of productive time. With the level of capacity utilisation, we distinguish free fixed costs and utilised (exploited) fixed costs. Of course, this classification is theoretical; indivisibility of fixed costs does not allow real release of free fixed costs in the monetary form. They are reflected in efficiency indicators, i.e. utilisation of production factors.

The complexity of fixed cost management shows itself therein that it is a conglomerate of various types and kinds of costs. For example, costs of providing for company existence (depreciation, rent, preventive machinery inspections ...), costs of providing for future production (research and development costs), but also costs for providing for current management activity (costs of administration machinery). A part of them is spent on a once-off basis, before the first performance. Thus, their amount is set in advance for the current accounting period. Therefore, fixed costs are often wrongly deemed to be dependent on time, but actually they are allocated to a given time period.

No costs can exist without performance or service. For that reason the relation of costs to performance volume belongs among important ones. The change of production volume directly affects development of costs, while individual cost tasks, or cost elements, or total costs of production act differently. When searching for the optimum volume of production, we have to know the development of costs and determine the size of dependence of cost change on change of production volume. We can find this out from the response coefficient (k_r). Here total costs $/N/$ and total performance volumes $/V/$ are examined. In order to be able to examine given changes in more details, costs need to be classified even more in-depth, to variable and fixed costs.

$$k_r = \frac{P_{zn}}{P_{zv}} : \frac{P_{zn}}{P_{zv}}$$

P_{zn} - N change percent
 P_{zv} - performance percent

Variable costs, such as was already described, vary with the change of performance volume, more or less proportionately with its increase, or decrease. It was established that the response coefficient has its value different from zero. We distinguish also marginal costs that represent the amount of variable costs, which is added with each following product to total variable costs incurred on the previous number of units. These costs are used in decision-making on taking-up of another production unit /if the production capacity is not utilised / during the planned period. Thus, the marginal cost is actually attributive cost and informs us to what extent it is profitable to increase the volume of production of individual performances within the existing capacity. This is possible while the realized price of a product is equal to marginal / attributive / costs, or exceeds them. Unequivocal inclusion of costs into one or the other group is never easy. It depends highly on conditions. Individual costs act as variable in some company and as fixed elsewhere.

The fixed costs represent one of important reserves of cost reduction. These costs are derived from the need of global and one-time creation of technical, organisational and working conditions for provision of certain performance volume. We call them also capacity costs because they change in their absolute amount at changes to the extent of capacities. Unless there is a change of production volume, they do not vary within the existing capacity at all, or slightly only. The fixed costs are bound to the total performance volume. In calculation per unit of production, the constancy character of these costs vanishes.

These costs are divided into two basic groups, absolute and free fixed costs. By response of individual items of fixed costs at change of the performance volume, we know costs, whose total amount for the same period does not vary even if the performance volume changes. These are fixed costs. They include in particular wages of some employees, depreciation of buildings and structures, patent and licence costs, technological development and others. These are further divided into:

- Nonrecurring costs /are related to new production running-in /;
- Running costs /these depend on time - depreciation, salaries/.

In order to be utilised, nonrecurring costs need the biggest production volume possible. Running costs can be reduced by as high time capacity utilisation as possible. The second group includes costs that do not vary in their total only within a certain production volume. They incur by production of the first product, the next production does not require increase of fixed costs. Should the limit of production capacity be exceeded, the fixed costs will also change, but not gradually. These costs are called relative fixed costs. They represent a one-time increase of some fixed cost elements that are needed for removal of narrow profiles in the total production capacity and prevail in the total volume of fixed costs.

The level of utilisation of production capacity is directly influenced by rate of fixed cost utilisation. The minimum of fixed costs per a performance unit will be reached at full utilisation of fixed costs. However, this does not occur often in practice, thus the fixed costs are usually not fully utilised either. Here we can divide fixed costs to exploited and free costs. Free fixed costs incur in every company due to disproportions among individual capacities. They should be reduced as much as possible because they make economic results in the company worse. This is reached in particular through compensation of free fixed costs with saving of variable costs. The share of fixed costs in the total costs increases with growing activity concentration, mechanisation, automation and others. (Chodasová, Z, 2012;). Individual items of fixed costs are calculated as follows:

$$N_{fv} = (V_k - V_0) \times N_f : V_k$$

$$N_{fy} = V_0 \times N_f : V_k$$

N_F - Total fixed costs

N_{fv} - Free fixed costs

N_{fy} - Fixed costs exploited

V_0 - Planned volume of performances

V_1 - Actual volume of performances

V_k - Time and performance capacity of means of transport

PROGRESSIVE CLASSIFICATION OF COST FOR DECISION-MAKING NEEDS

The most decision-making tasks are aimed at solution of problems about change of volume and assortment of carried out performances, amount of costs, revenues and profit. The well-known method of critical point (zero point, break-even point), or international description CVP proceeds from abbreviations **Cost** – náklady, **Volume** – objem, **Profit** – zisk. It works with classification of costs to fixed and variable ones, such as already described in this paper. If the subject is decision-making from several alternatives, this cost classification needs to be extended by following views of costs (Chodasová Z., Tekulová, Z. 2013).

The subjects of decision-making in the company are different material scopes of activity and their alternatives. Therefore, every task needs to be allocated such information on costs and revenues that correspond to the content and extent of the problem being solved where these are **relevant costs and revenues in terms of the decision concerned**.

Decision-making is connected with valuation and choice among alternatives, of which one (optimum) should be carried out in the future. Consequently, it is characteristic for relevant (influenceable) costs and revenues:

- They are related to the given decision and represent future cash flows;
- They differ in individual alternatives.

Relevant costs and revenues correspond to following characteristics: sacrificed economic sources, expected economic effect, transferability to money. These characteristics are consistently respected in the accounting, too. Hence, the base for determination of relevant costs and revenues are data on **actual, real costs and revenues** as captured in the accounting. The managerial accounting takes over these data, sorts and processes them with regard to their relevancy (susceptibility to influence) at decision-making. The basic purpose of relevant costs and revenues is to express the difference among alternatives that are subject of decision-making. Qualification of these differences for two alternatives leads to quantification of difference (differential) costs and revenues facilitating the choice of optimum alternative based on „bigger – smaller“ valuation or prioritizing „better –

worse“. Thus, difference (differential) relevant costs or revenues become the base for valuation in cases of introduction of changes when one alternative replaces another one (Kupkovič, M. et al., 2002).

On the contrary, in terms of decision-making, **irrelevant costs (revenues)** are uninfluenceable, i.e. remain unchanged at any decision, or have the same level at each alternative. For instance, when we know the standard material consumption of a concrete product, and decide to produce it, no alternative (of changes of product's production volume) will change its amount per one product. A separate group of irrelevant costs are such costs that need to be „taken over,, on the unchanged scale. This refers primarily to long-term invested fixed costs, the level of which was decided in the past period (tangible assets and depreciation posted to them). We cannot change them by any other decision; they are therefore called deadweight (sunk) costs. In practice we are not allowed to carry out all possible alternatives, but only one of them. Consequently, the chosen alternative consumes all the potential economic resources and makes it impossible to carry out other opportunities. In order to accept alternatives with the highest effect, alternatives with a lower effect need to be rejected. Therefore, possible alternatives need to be valued first.

Opportunity costs (costs of opportunity) are characterised as „lost revenues,, which a company is losing therethrough that a certain alternative cannot be carried out by capacity reasons. The category of opportunity costs is applied mainly in decision-making on optimisation of assortment of carried-out performances in particular when the company is limited in sources, (e.g. limited possibility to purchase imported material, at limited capacity of special production equipment, etc.). Methods of net present value, profitability index and internal rate of return, used in decision-making on long-term investment projects, are also based on the category of opportunity costs (Tokarčíková, E., Poniščiaková, O., Litvaj, I. 2014).

One of the important forms of relevant costs and revenues with utmost importance for valuation of economic processes and decision-making are **incremental costs and revenues**. They arise by further cost incurrence and realisation of revenues and continue directly on the reached level (comparable base). According to the extent, there are distinguished:

- Total incremental costs (revenues) that represent aggregate quantities obtained by comparison of the final status with the previous status. These are differences arising in consequence of uninterrupted continuation of the relevant activity, to which corresponds also the mathematical method of their determination. That is why, they are sometimes referred to as differential costs and revenues;
- Unit incremental costs (revenues) are connected and quantified for every further performance unit. They are also indicated as limit, marginal costs.

The incremental costs play an important role in short-term decision-making when a part of the total costs can be held for irrelevant. It is then assumed that only variable costs will act as incremental costs, and each revenue exceeding them helps to make a profit increment.

Importance of costs in the enterprise:

- **Costs are a synthetic indicator of quality of business unit work.** They express quantity of consumed materialised and particularly living labour with such accuracy, with which prices express consumption of company production factors. Despite different valuation of product manufacture qualities of goods with prices, the costs characterize best the consumption of production factors and efficiency level and reflect changes of structure of consumed work;
- By monetary expression of consumption of production factors, they **quantify qualitatively different consumption of work, whereby they enable to compare it.** It is possible only by means of costs to quantify how much production and realisation of a certain product costs;
- The cost level is **mirror of how economically a company uses working, material and financial resources** and makes it possible to value the efficiency of the major part of the company activity. Therefore, they are an important management tool;
- **Costs are criterion of economic efficiency.** Company departments are interested in cost reduction because opposing tendencies could cause financial distress for them;
- **Costs are the base for pricing.** Thereby, they are interesting not only for enterprise management, but also for internal in-house management. Costs and prices influence each other. Not only do costs have impact on prices, but prices have impact on the level of costs as well (by prices of inputs into the company transformation process).

COST MANAGEMENT PROCEDURE

The costs are financial expression of consumption of the company's production factors. To manage the costs we need to know more than just their total amount. Cost management seeks to change the course of implementation

of the shipping activity so that the costs decrease, with subsequent search for the means and sources to reduce them in the future. This can be achieved if the company has a developed cost management procedure. Scientific research has confirmed that the use of modern methods of process management makes it possible to improve the performance. (Đurišová,M.,2011)

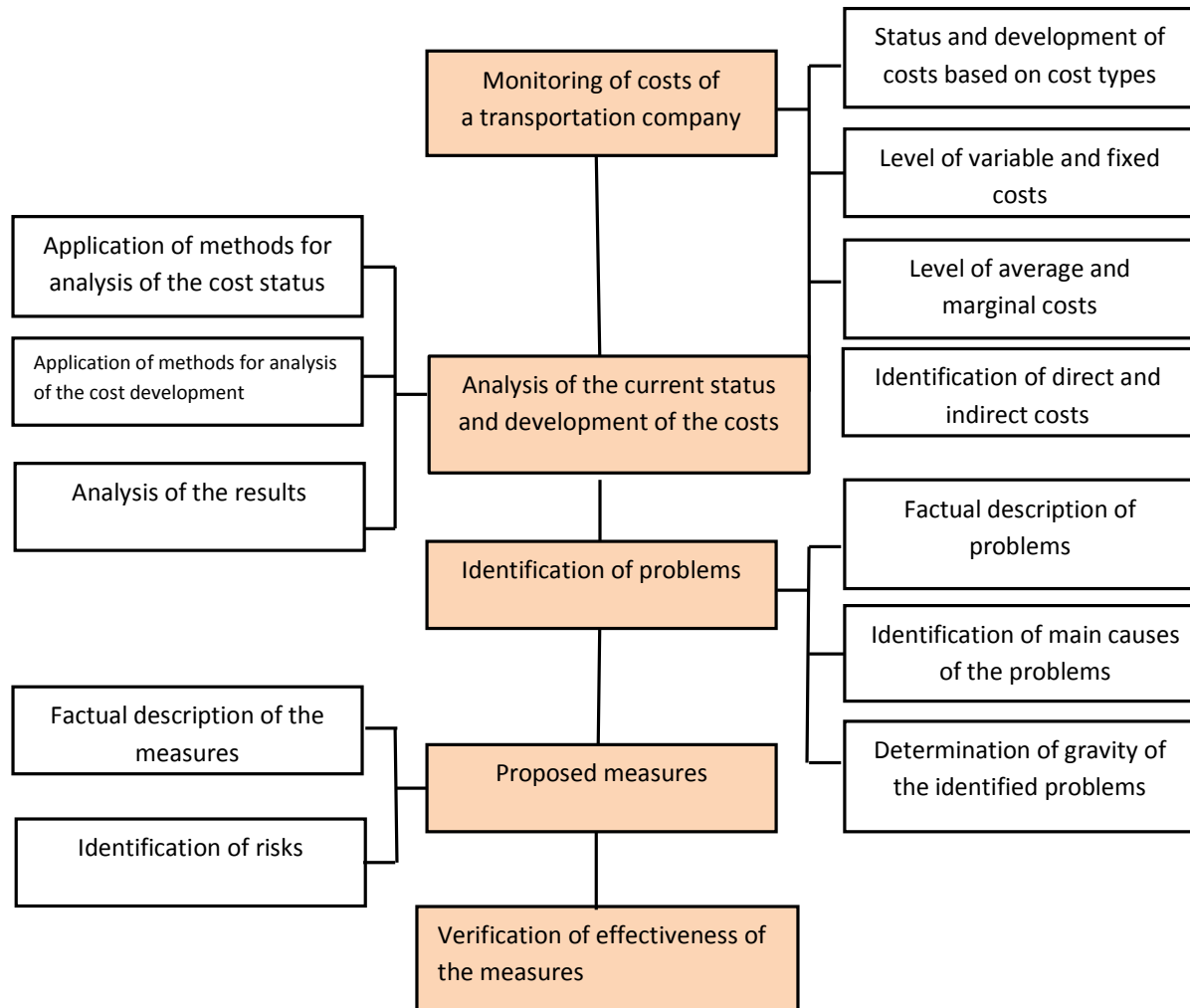


Diagram 1 Costs management procedure in a transportation company

The diagram 1 shows a general and comprehensive cost management procedure which can be adapted to specific conditions of a company. Transport means moving of people, goods, energy and messages in space. Moreover, we need to differentiate between shipping and transportation processes. Shipping means meeting of a request for relocation. Transportation means movement of transportation means on transport routes, method of organization and its management resulting from the shipping implementation. Shipping is a service the basic parameters of which (shipping quantity, time, direction) are determined independently of the carrier that uses its production factors to perform the shipping.

MONITORING OF COSTS OF A TRANSPORTATION COMPANY

Monitoring of costs of a transportation company includes determination of the actual status of the costs. The sources include the profit and loss account and the company records. Subsequently, it is necessary to create groups of costs with specific characteristics. They are represented by individual types of costs, such as fixed and variable costs, average and marginal costs and, last but not least, direct and indirect (overhead) costs. The types of costs in transportation companies are primarily the costs of maintenance of transportation means, wages and other depreciations of transportation means and other fixed assets. On company include variable costs include consumed fuel, wages of drivers, repair and maintenance costs. Direct costs are those with a defined standard

consumption (consumption of fuel, oils, tires, wages of drivers) while indirect costs are recalculated per shipping performance (operational and administrative overheads). Average costs are determined as a ratio of the overall costs on all types of shipping performances and their volume. Marginal costs are additional costs incurred as a result of additional shipping performance. Examples of monitoring of costs are provided in tables 1 and 2 which contain costs for 3 categories of vehicles in a transportation company (Đurišová, Kucharčíková 2014).

Table 1 Average unit costs

Vehicle type (category)	N_f v [EUR]	N_{vj} v [EUR]	Actual volume of performance on average (V)	N_{pj} [EUR]
Under 3.5 tons	9 167,98	0,19	120 971 km	0,266
Under 7.5 tons	11 860,76	0,31	129 493 km	0,402
Over 7.5 tons	14 614,51	0,59	103 829 km	0,731

The course of the variable unit costs differs depending on the type of dependence on the performance volume. They are determined as a ratio of the overall costs and the volume of performances:

$$N_{pj} = \frac{N}{V} = \frac{N_f + N_v}{V} \quad (1)$$

here N_{pj} - average unit costs (EUR/km); N - overall costs; N_f - total fixed costs (EUR); N_v - total variable costs (EUR); V - volume of performances.

More accurate results can be achieved with marginal costs which express the costs that would not have been expended if the additional performance had not been implemented. They can be calculated with the following formula:

$$n_m = \frac{\Delta N}{\Delta V} \text{ then } N_X = N_f + (V_X \times n_m) \quad (2)$$

here n_m - marginal costs (EUR/km); V_X - volume of the specific shipping performance (km); N_f - fixed costs (EUR); N_X - overall costs of the specific shipping performance (EUR).

Table 2 Marginal costs

Type of vehicle (category)	N_f [EUR]	ΔN [EUR]	ΔV [EUR]	n_m [EUR]
Under 3.5 tons	9 167,98	32 662,17	120 971 km	0,266
Under 7.5 tons	11 860,76	51 797,2	129 493 km	0,402
Over 7.5 tons	14 614,51	75 795,17	103 829 km	0,731

In case of a proportional dependence the marginal costs equal the variable unit costs. One of the functions of the shipping price is to compensate the incurred costs and to provide reasonable profit to the carrier. This

requirement, however, does not mean that every single shipping must be profitable but that the receipts of the company must in the long term cover the production costs and provide reasonable profit (Gnap, 2008, p.15).

ANALYSIS OF THE CURRENT STATUS AND DEVELOPMENT OF THE COSTS

When analyzing economic phenomena, attention is paid to differentiating factors. They are not always structural elements, e.g. when analyzing the overall costs attention is paid to individual components of the costs, such as costs of material, wages, depreciations, as well as factors which caused the costs and their size, i.e. the volume of performances, assortment structure, price of inputs, sales price.

An analysis of the identified current status and development of the costs is based on application of suitable methods which have been summarized in table 3.

Table 3 Methods for analysis of the status and development of the costs

Methods for analysis of the current status of the costs	Methods for analysis of costs development
<ul style="list-style-type: none"> • Method of the level of utilization of fixed costs, • Method of relative saving or exceeding of fixed costs, • Method of monitoring of capacity and consumption deviation • Method of comparison of average variable unit costs and marginal costs, • Method of determination of critical volume of performances. 	<ul style="list-style-type: none"> • Cost intensity of shipping, • Monitoring of costs based on indexes, • Operating lever, • Methods focused on examination of impact of factors on the costs - price, shipping volume, assortment, fixed and variable costs.

As an example we present in the Table 4 application of the method of comparison of average variable unit costs and marginal costs for the category of vehicles up to 3.5 tons. The maximum shipping capacity has been determined at 172 800 km per year.

Table 4 Comparison of average unit and marginal costs

Volume of performances [km]	Variable costs [EUR]	Overall costs [EUR]	Costs per 1 km using the marginal costs [EUR]	Costs per 1 km using the average costs [EUR]
0	0	9 167	0,266	0,266
100 000	18 900	28 067	0,281	
110 000	20 790	29 957	0,272	
120 000	22 800	31 967	0,266	
120 971	22 984	32 151	0,266	
130 000	24 830	33 997	0,262	
140 000	27 202	36 369	0,260	
172 800	35 268	44 435	0,257	

The overall costs during various performances over the year calculated based on overall average costs are constant. It is obvious that there are some distortions at lower volumes of performances because the fixed costs are not well included. The method is simple and it is suitable for performances which are near the shipping capacity. To determine prices in a transportation company it is reasonable to prefer the marginal costs method at various levels of shipping performances.

IDENTIFICATION OF PROBLEMS IN COSTS OF A TRANSPORTATION COMPANY

Based on implemented parts of the cost management procedure one can identify a number of problems in the concerned area. They include particularly:

- increase of the individual cost types - consumption of fuel, increase of wage costs without an adequate increase of labor productivity, growing costs of services,
- exceeding to the set limits for the individual cost types, which had been determined with regard to the growing prices,
- decrease of shipping economy,
- negative deviations from the consumption standards,
- failure to reach the critical volume of shipping,
- failure to ensure funding for payment of fixed costs,
- increase of the level of limit costs,
- etc.

Due to the analysis of the value of the shipping process many of the identified problems are interconnected and are mutually conditional.

Proposed measures to reduce the costs

The proposed measures are supposed to address the problems identified above. They may include:

- Utilization of the shipping capacity and specification of the optimized assortment of shipping performances (dominant representation of shipping relations with lower costs per 1 km at the expense of more expensive shipping relations); to a lesser extent, it is also possible to address utilization of current assets.
- Acquisition of modern vehicles and technologies can be used by transportation companies as a method to reduce costs by modernization of transportation means, replacement of the existing transportation means with technically more advanced vehicles, with better fuel economy, improved technology (new methods of technology application, the work and the work sequence, utilization of transportation means).
- Improvement of organization and management by adapting working hours in a work week to customer needs, which will have an effect on usability of fixed costs, paying attention to optimization of transportation routes for shipping relations.
- Reduction of fuel consumption by using the shortest route, economical driving, good technical condition of the vehicles. Poor technical parameters of the vehicles lead to higher fuel consumption

CONCLUSION

Costs of a transportation company influence its economic results. Shipping is a service the basic parameters of which (shipping quantity, time, direction are determined independently of the carrier that uses its production factors to perform the shipping. Costs are the financial expression of the consumption of company's production factors. The input for decision-making about the shipping performance is the comparison between its costs and proceeds. Following the implementation of monitoring measures it is necessary to verify their effectiveness after a certain period of time. The verification of effectiveness of the measures should be ideally performed by a repeated analysis of the current status and development of the costs, in the same scope and with the same methods to be able to compare the old and new results

The cost management focuses on a change of implementation of the shipping activity so that the costs decrease, with subsequent search for the means and sources to reduce them in the future. This contribution points to the fact that cost management in a transportation company is efficient if approached in a comprehensive manner. The approach includes development and breakdown of a cost management procedure. It includes monitoring of the costs, analysis of the current status and development, identification of problems, proposed measures and verification of their effectiveness.

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Improved Learning Through Interactive Video Mini-Lectures in Ecology

Consuelo ESCOLÁSTICO

Organic and Bio-organic Department

Sciences Faculty, Universidad Nacional de Educación a Distancia (UNED)

Paseo Senda del Rey, 9. 28040 Madrid (Spain)

cescolastico@ccia.uned.es

Rosa María CLARAMUNT

Organic and Bio-organic Department

Sciences Faculty, Universidad Nacional de Educación a Distancia (UNED)

Madrid (Spain)

rclaramunt@ccia.uned.es

Javier PÉREZ-ESTEBAN

Organic and Bio-organic Department

Sciences Faculty, Universidad Nacional de Educación a Distancia (UNED)

Madrid (Spain)

jpereze@madrid.uned.es

ABSTRACT

The use of educational multimedia resources, such as video mini-lectures, can effectively enhance learning due to increasing student engagement and knowledge retention as a result of multisensory stimuli. The incorporation of interactivity in these resources strengthens learning, as it allows students to play an active role in receiving and processing information, improves problem-solving skills and provides immediate feedback.

The aim of this study was to design and make interactive video mini-lectures for the Ecology subject of the Environmental Sciences Degree using the EDpuzzle tool. EDpuzzle is a free online tool that allows users to edit videos and to embed questions (open-ended or multiple-choice). In this study it has been recorded 3 videos (5-10 minutes length) using Captivate and Camtasia, and in each video were included at least 2 quizzes with 5 multiple-choice questions. These videos were focused on exposing concise concepts of a greater difficulty, and as well, the resolution of exercises and examples concerning Ecology.

The Edpuzzle tool allowed the authors to implement interactivity in their previously created multimedia resources through the questions embedded at different moments of the video, providing immediate feedback after clicking the chosen answers. Those questions had been set up so that students must solve each question or problem raised in the process if they want to continue watching the video. The interactive variable incorporated to the video reduces the passivity of the students and confers a greater participation, what contributes to their autonomous learning. Pauses made during video visualization in order to reflect and to interpret the explanations or the information will allow to gradually increase the understanding of the theoretical contents and the capacity to solve related problems.

INTRODUCTION

This work belonged to the Educational Innovation Project “Development and integration of interactive materials as a methodological strategy for the improvement of the teaching-learning process in subjects of the Degree in Environmental Sciences”, in which it was proposed the design and development of several digital multimedia dynamic and interactive materials using different computer programs.

Nowadays, practically all university institutions have implemented an educational platform or LMS (Learning Management System), such as Blackboard, WebCT, Moodle...to support learning. As well, the proliferation of numerous electronic devices, such as mobiles, tablets, etc., which are used massively and are ubiquitous in all aspects of life, has meant a real social revolution. These systems are firmly settled in the behavior habits of the society and should be incorporated into learning. This is of particular relevance in universities with distance

methodology such as UNED (National University of Distance Education of Spain), where technological aspects become more important as these institutions develop all their teaching through e-learning platforms.

Multimedia is one of the best educational techniques because it provides different stimuli to students, as it addresses more than one sense simultaneously (sight and hearing), including elements such as texts, spoken words, sound and music, graphics, animations and still pictures (Aloraini, 2012). The creation and incorporation of this type of high-quality multimedia materials has developed slower in the University than in other education levels, despite the fact that there are research studies that have reported that students prefer to use audiovisual materials to strengthen the contents of the subjects they are studying (Arrieta and Rayón Encinas, 2015). In this regard, it has been demonstrated that the use of these educational resources manages to increase learning satisfaction due to positive factors, such as a greater mental effort and the higher complexity of multimedia materials, which lead to an enhancement of information processing and contents comprehension (Chiou et al., 2015). These factors contribute to increase the effectiveness of the learning process and the active participation and motivation of students.

The Learning Technology Standards Committee of the Institute of Electrical and Electronics Engineers (IEEE) defines a learning object as "any entity, digital or non-digital, that may be used for learning, education or training (IEEE, 2002). Learning objects are fundamental elements that can increase and improve the effectiveness of learning, and have a special relevance to e-learning (Cohen and Nycz, 2006). Among the Digital Learning Objects (DLO) that can be elaborated to include in multimedia materials are videos, whose positive effects on teaching-learning process have been reported in numerous studies (Green et al., 2012; Morris and Chikwa, 2014; Escolástico et al., 2014).

However, despite the great potential of these digital educational resources, they may also present some shortcomings. Therefore, the incorporation of interactive elements in video mini-lectures can increase learning efficiency because they require a more active participation by students by playing an active role in receiving and processing information (Evans and Gibbons, 2007; Zhang et al., 2006). The term interactivity includes interactions between students, with the tutor or with the teaching material itself; in the context of multimedia materials there are interactions between the student and the computer system, which requires some input from the learner, such as pressing a button or answering a question by clicking on one of a number of options (Evans and Gibbons, 2007). In video- and computer-based materials, it has been suggested that interactivity make easier for students to revisit specific parts of the environments to explore them in depth, to test ideas and to receive feedback (Domagk et al., 2010).

There are currently numerous tools (EDpuzzle, eduCanon, TED-Ed, Hapyak, etc.) that bring interactivity to multimedia materials (Baker, 2016). EDpuzzle is a free online tool very easy-to-use that allow video editing. It allows the user to search for video content from multiple sources (YouTube, Vimeo, Khan Academy, Crash Course, etc.), or the teacher may upload his own video created with several computer programs (for example, Camtasia or Captivate). It is also possible to include those edited videos in several e-learning platforms, such as Moodle, Blackboard, WebCT, Canvas or aLF. Edpuzzle also allows to crop these videos, in order to show only the section that the teacher wants students to watch, and as well, the user can insert audio and quizzes onto them.

Thus, in this work EDpuzzle was selected in order to add interactivity to video mini-lectures previously designed and created by the authors for the Ecology I subject of Environmental Sciences Degree, given the ease of this tool and the great amount of interesting functionalities it possesses, as well as its capacity to create high-quality videos.

MATERIALS AND METHODS

The methodology used for the design and elaboration of the interactive videos created for this work mainly consists of three different stages.

In the first stage it was carried out the selection of contents of the subject Ecology I and the preparation of the script to adapt it to the length of the video. These contents were focused on exposing concise concepts of a

greater difficulty, and as well, the resolution of exercises and examples concerning Ecology. After that, presentations were created through PowerPoint including images and diagrams about the contents, what served as supporting material for the videos. Next, quizzes with multiple-choice questions regarding the contents of the video and the corresponding feedback were elaborated. The questions referred to several theoretical concepts and the resolution of numerical problems.

The second stage focused on the recording of the videos though the software Captivate and Camtasia.

Finally, in the last stage it was carried out the video editing using EDpuzzle, with the insertion of quizzes to add interactivity and their corresponding feedback.

In order to use EDpuzzle, the user has to register on the web site of this tool (<https://edpuzzle.com>) (Figure 1). Once the user gets access, he has to select the video (*My contents*) to begin its editing. Although EDpuzzle allows users to edit videos from other sources (searching from YouTube or Vimeo) (Figure 2) and to incorporate other functionalities, the authors have only inserted quizzes with feedback in our videos, as was the aim of this work.

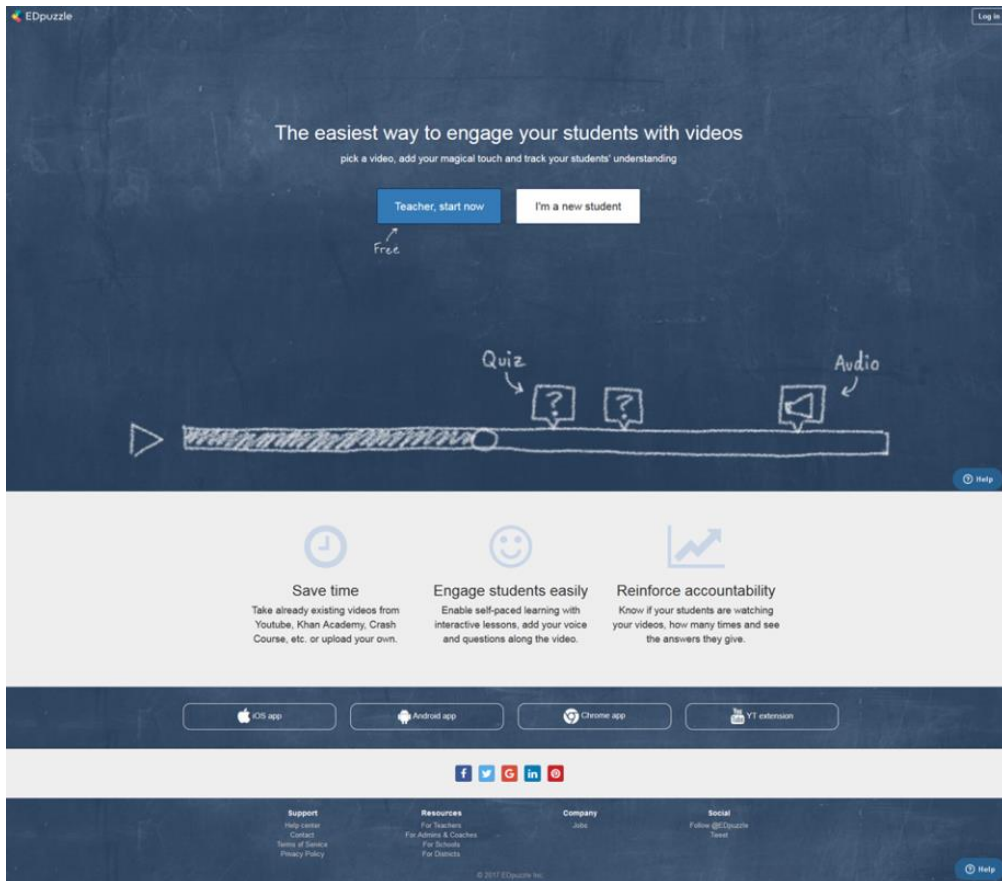


Figure 1: Home page of EDpuzzle website (<https://edpuzzle.com>).

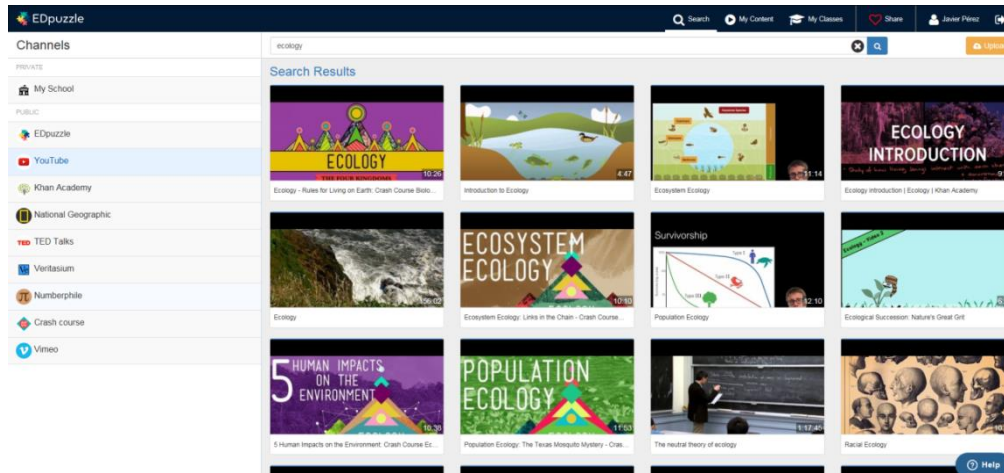


Figure 2: Search for a video from different sources.

RESULTS AND DISCUSSION

Three interactive videos of five to ten minutes length were prepared. Previously, the videos were recorded using Captivate and Camtasia, which allow video capturing from the computer screen. The contents exposed on the videos correspond to those of the lesson five (Population Dynamics) of the subject Ecology I. These contents were selected because the authors have detected in the forums of the subject a higher number of questions raised by the students on this lesson, what indicates that they have special difficulties to understand some of the concepts and to solve the problems of this lesson. Thus, scripts and presentations using PowerPoint were designed and elaborated, as well as quizzes and their corresponding feedback with the solution of each exercise. In each video at least two quizzes were inserted using EDpuzzle. These quizzes consisted of five 5 multi-choice questions and/or problems, each one with 3 possible answers, which only one was correct. It has been also included an immediate feedback, which gives an explanation of each answer to facilitate interactive learning.

The interactive video mini-lectures elaborated by the authors of this work show the progress bar at the bottom. Along this bar there are some green squares with a question mark, which indicate where are located each quiz within the video. When the video is playing and students get to one of these green squares, the video pauses and a quiz is displayed, requiring them to answer in order to continue the video (Figure 3). The student has also the chance to repeat that section of the video if is not still ready to solve the questions.

UNED **Tablas de vida** **Ecología I**

* x : Edad.
* n_x : Número de supervivientes con edad x .

1) Tabla de vida horizontal.
2) Tabla de vida vertical.

x	n_x	l_x	d_x	q_x	L_x	T_x	e_x
0	520	1.00	371	0.70	344.5	578.0	1.09
1	159	0.30	79	0.50	119.5	233.5	1.47
2	80	0.15	32	0.40	64.0	114.0	1.43
3	48	0.09	27	0.56	34.5	50.0	1.04
4	21	0.04	16	0.76	13.0	15.5	0.74
5	5	0.01	5	1.00	2.5	2.5	0.59
6	0	0.00					

$l_x = \frac{n_x}{n_0}$ $d_x = n_x - n_{x+1}$ $q_x = \frac{d_x}{n_x}$ $L_x = \frac{n_x + n_{x+1}}{2}$ $T_x = \sum_{x+1}^{\infty} L_x$ $e_x = \frac{T_x}{n_x}$

Tema 5. Dinámica de poblaciones

¿Cuál de las siguientes afirmaciones sobre el parámetro L_x es falsa?

☐ El parámetro L_x para $x = 0$ es siempre 1

☒ Se obtiene dividiendo el número de individuos del periodo de edad x entre el número de individuos del periodo $x+1$

☐ El parámetro L_x para el último periodo de edad es siempre 0

En una tabla de vida en la que para cada intervalo de edad hay: $n_0 = 100$, $n_1 = 90$, $n_2 = 43$, $n_3 = 0$ individuos, indicar cuánto sería el valor de L_x para $x = 1$.

☐ 0.35

☒ 1

☐ 0.75

Submit Skip

Figure 3: Quiz embedded within the video.

After completing the quiz, students can submit it and receive immediate feedback; they can verify then which questions has answered correctly and which ones has failed. In addition, they are provided with a brief explanation of the incorrect answers (Figure 4).

<p>¿Qué parámetros son necesarios para poder construir una tabla de vida?</p> <p>100/100</p> <p><input checked="" type="checkbox"/> Edad y número de supervivientes en cada periodo de edad</p> <p>Correcto.</p> <p><input type="checkbox"/> Proporción de supervivientes y tasa de mortalidad</p> <p>Incorrecto. Para poder elaborar una tabla de vida es necesario conocer los valores de los parámetros x (periodos de edad) y n_x (número de supervivientes en cada periodo de edad), que se sitúan en las dos primeras columnas de la tabla. A partir de dichos parámetros pueden calcularse los restantes parámetros de la tabla de vida.</p> <p><input type="checkbox"/> Esperanza de vida y tiempo restante de vida</p> <p>Incorrecto. Para poder elaborar una tabla de vida es necesario conocer los valores de los parámetros x (periodos de edad) y n_x (número de supervivientes en cada periodo de edad), que se sitúan en las dos primeras columnas de la tabla. A partir de dichos parámetros pueden calcularse los restantes parámetros de la tabla de vida.</p>	<p>En una tabla de vida, ¿qué significa una cohorte?</p> <p>0/100</p> <p><input type="checkbox"/> Grupo de individuos que sobreviven hasta el último periodo de la tabla de vida</p> <p>Incorrecto. En una tabla de vida, una cohorte es un conjunto de individuos de una población con la misma edad, es decir, que han nacido en el mismo periodo de tiempo. El número de individuos de la cohorte corresponde con el número de supervivientes (n_x) en el periodo de edad 0 (primera fila) de la tabla de vida.</p> <p><input checked="" type="checkbox"/> Estructura de edad de una población</p> <p>Incorrecto. En una tabla de vida, una cohorte es un conjunto de individuos de una población con la misma edad, es decir, que han nacido en el mismo periodo de tiempo. El número de individuos de la cohorte corresponde con el número de supervivientes (n_x) en el periodo de edad 0 (primera fila) de la tabla de vida.</p> <p><input type="checkbox"/> Grupo de individuos con la misma edad</p> <p>Correcto.</p>
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Figure 4: Feedback with explanations of each answer. On the left a correct answer; on the right an incorrect answer.

CONCLUSIONS

The EDpuzzle tool managed to enrich video mini-lectures previously created by the authors through the insertion of quizzes with feedback, converting them to interactive didactic resources. These DLO can be implemented on e-learning platforms, such as Moodle or aLF, as well as on web sites.

The main advantage of this type of interactive resources is that it not only improves attention and motivation of students during the video, but also it facilitates their autonomous and flexible learning. As well, these resources can contribute to the solution of numerous specific questions, what could lead to faster and more efficient advances in the teaching-learning process.

Although it has not been studied in this work, further research should be done on other possibilities offered by the EDpuzzle tool, since it allows to create virtual classes and to track the progress of the students: providing data about the time spent by students watching the video and their answers and grades in each quiz (Figure 5). The analysis of these data would help the teacher to find out the main difficulties in the subject and consequently, to design new activities for the students.

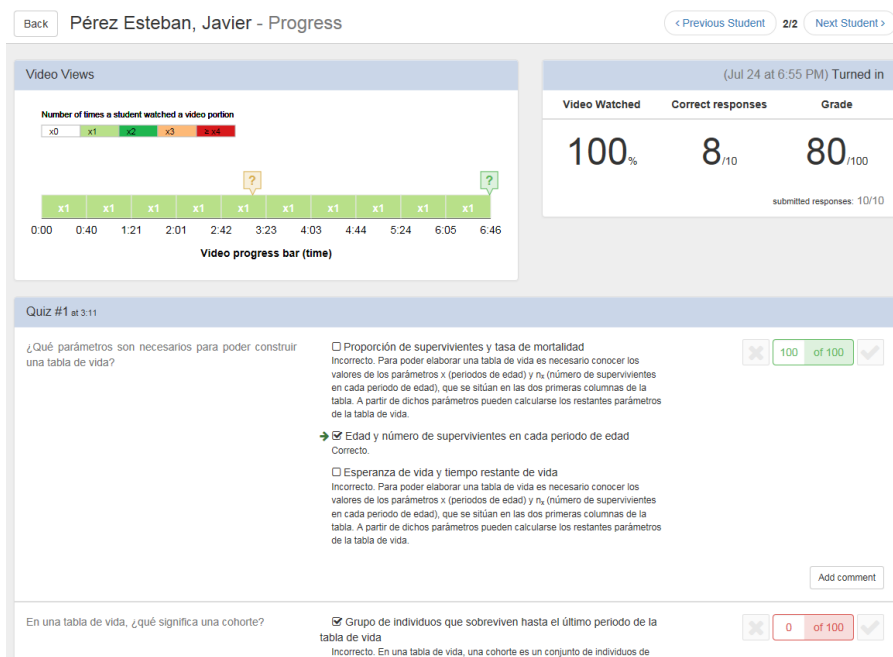


Figure 5: Tracking the progress of students.

ACKNOWLEDGEMENT

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In the Footsteps of de La Salle, On Becoming a Lasallian: Evaluation of the Conduct of the Intro to La Salle and Contextualization and Living out the Lasallian Guiding Principles Sessions for All Incoming First Year and Second Year Students of De La Salle Health Sciences Institute

Juanito O. CABANIAS

Academics Division

De La Salle Health Sciences Institute

City of Dasmariñas, Cavite, Philippines

jocabanias@dlshsi.edu.ph

ABSTRACT

This program endeavoured to integrate the Life of St. John Baptist De La Salle in the De La Salle Health Sciences Institute curriculum and contextualize and live out the Lasallian Guiding Principles. Specifically, it aimed to: (1.) Orient the incoming freshman and sophomore students about the life of Life of St. John Baptist De La Salle and the existence of the LGP; (2.) Involve all incoming freshman and sophomore students in the discussion of the Lasallian Guiding Principles through the different programs, team building activities and individual/group presentations and sessions; (3.) Contextualize and live out all lessons learned from the discussion on the life of Life of St. John Baptist De La Salle and conduct Lasallian Guiding Principles; and (4.) Assess/evaluate the implementation of the Intro to La Salle and Lasallian Guiding Principles sessions. The rating scores show that the conduct of Day 1-The Person Session and Day 2-The Inspiration far exceeded the expectations of the first and second year students of DLSHSI. The study also shows that the programs for Day 3-The Association, how the execution and delivery was done, how the facilitators delivered the program, were evaluated excellently. This could be attributed to the materials used during the program, the activities performed by the students and the line-up of facilitators. The excellent rating of the 7 items is a proof that the discussion of the Lasallian Guiding principles slated during Day 4-The Mission was indeed very important for the respondents and that they were all mindful of the contents and details of the said presentations. This day 4 also completed the theoretical foundations of the students vis-à-vis the presentation of their final outputs which is an advocacy video. The excellent mean score clearly shows how successful the conduct of the session had become and how the students enjoyed and loved watching their own outputs, Advocacy Video. Finally, the excellent rating for the conduct of the Intro to La Salle and the contextualization and living out of the Lasallian Guiding Principles sessions clearly shows that the Institute is responsive to the needs of the students and that the integration of such to the curriculum effects positive change into the lives of the students.

Key Words: Educational programme, Health sciences, Programme evaluation

INTRODUCTION

Lasallian is a term to describe a person who is personally fulfilling the mission set forth by Saint John Baptist de La Salle (Retrieved from <https://www.lasallian.info/lasallian-family/5-core-principles/>). Being Lasallian is faithfully based on five (5) core principles: Concern for the Poor and Social Justice; Faith in the Presence of God; Quality Education; Respect for all Persons; Inclusive Community (Rocas, 2009). Furthermore, as cited in <https://www.lasallian.info/lasallian-family/5-core-principles>, in its broadest sense, being Lasallian focuses on attitudes and views of education rather than formal structures. The Lasallian vocation to compassion, commitment and togetherness comes in various shapes and sizes. It has already done so in the course of its history, and it is set to develop completely new forms to meet the needs of today. This is the story of Lasallian Association today. Moreover, a Lasallian is one who can transform the general Christian call to discipleship into a personal vocation, living out in a specific way the call to make Christ present in the world of today (Rocas, 2009).

In an article written by Collins, T. (2001), she highlighted who a Lasallian is. According to her:

A Lasallian is someone who is personally committed to living the gospel values here and now. Being a Lasallian is one way of turning the general Christian call to discipleship into my personal vocation, living out in a specific way the call to make Christ present in the world of today. The general call becomes specific for me, because it comes to me through my personal experience: through my contacts with certain individuals who are significant in my life. In particular, the Lasallian insight into Christian living comes through the inspiration of one man and the spirituality he developed.

The statements above clearly show the Lasallian distinct identity. Given all of these, being a Lasallian entails a lot of expectations and commitment. This involves faith, service, community, education, scholarship, transformation, compassion, excellence, commitment, and a lot more. But when do we really say we have really become Lasallians, in words and in deeds? How do we measure the Lasallianess in us? How do we manifest the Lasallian Core Values? What guides us in the Lasallianization process? This has become the foremost purpose of the introduction of the Lasallian Guiding Principles of the Philippine Lasallian Family which contain the fundamental guiding principles that the De La Salle Philippines follows as it strives to live out the Lasallian Mission in the Philippines. This is composed of three (3) documents, the Foundational Principles of Lasallian Formation, the Principles of Lasallian Education in the Philippines, and the Principles of Lasallian Social Development which are products of an ongoing effort to define and clarify the nature of the Lasallian presence and mission in the country today (Retrieved from: <http://www.dlsu.edu.ph/inside/lasallian-guiding-principles/default.asp>).

THE STUDY

As clearly stipulated in the document about the Lasallian Guiding Principles, these are the direct result of resolutions passed during the First Lasallian Family Convocation of 2003 calling for the strengthening of the sense of Lasallian identity and the deepening of the Lasallian charism among individuals and institutions in the Philippine District. Each of these statements builds on three (3) values which are fundamental to Lasallian identity: the spirit of faith, zeal for service and communion in mission. Furthermore, the intent of each of the three documents is to articulate the commitments that flow from these values in relation to the training and formation of Lasallian associates and partners, the conduct of the Lasallian educational mission in schools and the socio-political involvement of the Lasallian Family.

In its truest sense, all Lasallian educators are considered formators by virtue of their participation in the Lasallian experience of education and formation as highlighted in the LGP manual. Moreover, those who enable persons to acquire vision, values and practices through activities initiated by the campus ministry, social action, guidance counseling, and Lasallian Family offices are considered in a more formal sense as Lasallian formators.

Today, the mission of human and Christian education is a wide ranging collaborative effort entrusted to men and women of diverse backgrounds and gifts, who, in creative fidelity to De La Salle's Vision, commit themselves to making the benefits of a transformative human and Christian education available to all, most especially to the poor. Each member of the Lasallian Family lives out this commitment through association in a Lasallian educational project according to his or her particular role and area of competence. By our efforts to ensure the vitality, relevance and effectiveness of the educational project, all who participate in and support such work act as partners in the educational process (Retrieved from: <http://www.dlsu.edu.ph/inside/lasallian-guiding-principles/default.asp>).

Education is viewed here as a collaborative effort that involves teachers, administrators, students, auxiliary staff, alumni, parents, and supporters committed to furthering the Lasallian Mission. Collaborating together in a spirit of fraternal solidarity, these groups constitute a community that incarnates and expresses human and Christian values, particularly those of faith, zeal for service and communion. Such a community educates and forms both by way of its curricular offerings and by the quality of its communal life (LGP, 2009).

This program endeavored to integrate the Life of St. John Baptist De La Salle in the DLSHSI curriculum and contextualize and live out the Lasallian Guiding Principles.

Specifically, it aimed to:

1. Orient the incoming freshman and sophomore students about the life of SJBDLS and the existence of the LGP;
2. Involve all incoming freshman and sophomore students in the discussion of the LGP through the different programs, team building activities and individual/group presentations and sessions;
3. Contextualize and live out all lessons learned from the discussion on the life of SJBDLS and conduct LGP; and
4. Assess/evaluate the implementation of the Intro to La Salle and Lasallian Guiding Principles sessions

DAY 1-THE PERSON (background of the program/objectives, De La Salle Philippines and De La Salle Health Sciences Institute in focus (structure and people and functions), Vision-Mission-Values-Creed of DLSHSI, the lasallian prayer, and sharing of expectations)

DAY 2-THE INSPIRATION (life of SJBDLS, video presentations, discussion of the expected output of the students, and workshops/individual/team building activities)

DAY 3- THE ASSOCIATION (who is a lasallian?, who is a la salle student?, the kind of life that a la salle student should have in dlshsi, what is expected of a dlshsi student?, the things that a la salle student shouldn't do, and workshops/individual/team building activities)

DAY 4-THE MISSION (the lasallian guiding principles, video presentations, living out and contextualizing the lasallian guiding principles, and workshops/individual/team building activities)

DAY 5- THE CELEBRATION (sharing/reflections/processing/evaluation, final presentation of output and recognition ceremonies)

This study utilized the descriptive research survey technique. A survey is a non-experimental, descriptive research method. Surveys can be useful when a researcher wants to collect data on phenomena that cannot be directly observed (such as opinions) (<http://www.gslis.utexas.edu/~palmquis/courses/survey.html>).

A survey is a means of gathering information about a particular population by sampling some of its members, usually through a system of standardized questions. It can be conducted by mail, telephone, personal interview or internet. It can be administered either to individuals or groups. Questions may be related to behaviors, beliefs, attitudes and/or characteristics of those who are surveyed. The aforementioned research technique was employed in this study considering that the purpose of a survey is to elicit information which, after evaluation, results in a profile or statistical characterization of the population sampled.

(<http://www.fairfaxcounty.gov/demogrph/pdf/questionnairedesign.pdf>).

The study used the incoming freshman and sophomore students for a total of 1,303 from the seven (7) colleges of the Institute namely: College of Humanities and Sciences, College of Pharmacy, College of Medical Laboratory Science, College of Nursing, College of Rehabilitation Sciences, College of Medical Radiation Technology, and College of Medicine, as respondents of the study. The students were all required to attend the 5-day session.

Data for this study were collected with the use of a researcher-made and validated survey questionnaire. The questionnaire is a structured technique for collecting primary data in a marketing survey. It is a series of written or verbal questions for which the respondents provide answers (Quick MBA, Marketing, Knowledge to Power Your Business/www.quickmba.com/marketing/research/design/2008).

A self-made survey-questionnaire was prepared by the researcher and validated by the pool of facilitators and formators who volunteered to facilitate the conduct of the Intro to La Salle and LGP sessions. It was pilot-tested to the College of Humanities and Sciences and had undergone reliability testing using the Cronbach's Alpha in which the alpha coefficient for the 39 items is 0.848, suggesting that the items have a good internal consistency.

Based on the items contained in the questionnaire, the questions were grouped according to the following: The Person with 8 items; The Inspiration with 8 items; The Association with 7 items; The Mission with 11 items; and The Celebration with 5 items. Commendations and recommendations relative to this were also noted. This study used a 5-Point Likert Scale to evaluate/assess the implementation of the conduct of Intro to La Salle and contextualization and living out the Lasallian Guiding Principles.

- 1= Poor; Does not meet expectations
- 2= Needs Improvement; Sometimes meets expectations
- 3= Fair; Meets expectations
- 4= Good; Exceeds expectations
- 5= Excellent; Far exceeds expectations

The survey-questionnaire was distributed to all participants during the first session day for all the three batches. The same was retrieved during the Day 5 session of the said program. The program started on July 18, 2016 and ended on August 12, 2016.

In order to evaluate and assess the implementation of the conduct of Intro to La Salle and contextualization and living out of the Lasallian Guiding Principles sessions, the following descriptive statistical techniques were applied: mean; and standard deviation. The following was used to interpret the results of the study:

4.21 – 5.00	-	Excellent; Far exceeds expectations
3.41 – 4.20	-	Good; Exceeds expectations
2.61 – 3.40	-	Fair; Meets expectations
1.81 – 2.60	-	Needs Improvement; Sometimes meets expectations
1.00 – 1.80	-	Poor; Does not meet expectations

In the conduct of the program, the researcher adhered to the following:

1. Distribution of assignments per facilitator, per group, per schedule, and per session;
2. Distribution of all materials specific to the topics, facilitators, groups, and sessions;
3. Identification of room assignments;
4. Distribution of the class list;
5. Conduct of the program through the following activities:
 - 5.1. Setting of expectations
 - 5.2. Diagnostic Exam/Quizzes
 - 5.3. On-line searching and googling
 - 5.4. Meta Cards Presentation through group activities
 - 5.5. Sharing and presentations
 - 5.6. Case Analyses through the discussion of the Student Handbook
 - 5.7. Lectures, presentations, demonstrations, Q and A Sessions, feedbacking, processing, and evaluation
 - 5.8. Video presentations
 - 5.9. Music Adaptation for the Lasallian Prayer
 - 5.10. Video Making based on the Advocacy of the group
 - 5.11. Culminating activity and graduation ceremonies
 - 5.12. Awarding

FINDINGS

Table 1. Evaluation of the Conduct of Intro to La Salle and Lasallian Guiding Principles Session for Day 1-The Person

ITEMS	N	Mean	Std. Deviation	Verbal Interpretation
DAY 1-THE PERSON				
I have experienced an orientation program relative to the conduct of Intro to La Salle and LGP sessions.	1303	4.2993	.71481	Excellent
I have been given a clearer background of the Institution where I now belong through the presentation of the De La Salle Philippines and De La Salle Health Sciences Institute and their Structures.	1303	4.4405	.68175	Excellent
I have fully appreciated now the contents of the VISION-MISSION-VALUES-CREED OF DLSHSI after the session.	1303	4.3876	.72654	Excellent
I have fully appreciated now the Lasallian Prayer.	1303	4.5426	.67963	Excellent
I have been given the opportunity to share my expectations about the session/activity.	1303	4.0683	.85730	Good
I have seen the relevance of the activities and have enjoyed them at the same time.	1303	4.1550	.84365	Good
I have seen that the facilitators have prepared for the session.	1303	4.3914	.76421	Excellent
I have noticed that the venue is conducive for the kind of session we have had for the day.	1303	4.4582	.74851	Excellent
Average (Day 1)	1303	4.3441	.57035	Excellent

Table 1 reveals that generally, the students affirmed that the **Day 1 Session-The Person** was generally conducted excellently with 6 excellent evaluations out of 8 items, as evidenced by the mean score of **4.3441**. As regards the specific items contained in this table, the respondents rated the following with excellent evaluation: I have experienced an orientation program relative to the conduct of Intro to La Salle and LGP sessions; I have been given a clearer

background of the Institution where I now belong through the presentation of the De La Salle Philippines and De La Salle Health Sciences Institute and their Structures; I have fully appreciated now the contents of the VISION-MISSION-VALUES-CREED OF DLSHSI after the session; I have fully appreciated now the Lasallian Prayer; I have seen that the facilitators have prepared for the session; and I have noticed that the venue is conducive for the kind of session we have had for the day. The rating scores show that the conduct of Day 1-The Person Session Far exceeds the expectations of the first and second year students of DLSHSI.

Table 2. Evaluation of the Conduct of Intro to La Salle and Lasallian Guiding Principles Session for Day 2-The Inspiration

ITEMS	N	Mean	Std. Deviation	Verbal Interpretation
DAY 2-THE INSPIRATION				
I have seen that introductory activities relative to the Life of St. John Baptist De La Salle has been conducted and participation of everyone has been accomplished.	1303	4.3454	.74187	Excellent
I have fully appreciated who St. John Baptist De La Salle is after the session.	1303	4.4582	.71277	Excellent
I have seen the full attention and participation of everyone.	1303	3.9555	.91136	Good
I have observed that everyone has been given the opportunity to share his/her thoughts about the topics during the session.	1303	4.0491	.87325	Good
I have observed that everyone has been very comfortable sharing his/her thoughts about the topic.	1303	3.9363	.90811	Good
I have seen the relevance of the activities and have enjoyed them at the same time.	1303	4.1420	.87583	Good
I have seen that the facilitators have prepared for the session.	1303	4.3914	.78111	Excellent
I have noticed that the venue is conducive for the kind of session we have had for the day.	1303	4.4137	.75798	Excellent
Average (Day 2)	1303	4.2127	.63720	Excellent

It can be gleaned from Table 2 that in regard the conduct of **Day 2 Session- The Inspiration**, the respondents agreed that it far exceeds their expectations, as reflected in the mean score of 4.2127 with a standard deviation of .63720. Specifically, it can be noticed that out of the 8 items presented, 4 have excellent ratings and 4 also have the good ratings. Positively, when the general mean score was computed, the over-all rating still showed an excellent conduct of the said session.

Table 3. Evaluation of the Conduct of Intro to La Salle and Lasallian Guiding Principles Session for Day 3-The Association

ITEMS	N	Mean	Std. Deviation	Verbal Interpretation
DAY 3-THE ASSOCIATION				
I have seen that introductory activities relative to the topics for the session has been conducted and participation of everyone has been accomplished.	1303	4.3177	.74902	Excellent
I have fully appreciated what is expected of me as a Lasallian and as a Lasallian student.	1303	4.4160	.71335	Excellent
I could personally say that I have now fully understood the things that I shouldn't do as a Lasallian student after the session.	1303	4.4267	.69602	Excellent
I have seen the relevance of the activities and have enjoyed them at the same time	1303	4.2709	.81526	Excellent
I have seen that the facilitators have prepared for the session.	1303	4.4213	.72252	Excellent
I have noticed that the venue is conducive for the kind of session we have had for the day.	1303	4.4206	.71710	Excellent
I have observed that the discussion of the topic-The Association has promoted an atmosphere of active participation, commitment and solidarity in our group.	1303	4.3454	.74084	Excellent
Average (Day 3)	1303	4.3740	.59962	Excellent

Table 3 clearly presents that in terms of the evaluation of the respondents on the conduct of **Day 3 Session- The Association**, all of them affirmed that this session far exceeds their expectations, as seen in the mean score of 4.3740 with a standard deviation of .59962. The rating shows that the programs for Day 3, how the execution and delivery was done, how the facilitators delivered the program was evaluated excellently. This could be attributed to the materials used during the program, the activities performed by the students and the line-up of facilitators.

Table 4. Evaluation of the Conduct of Intro to La Salle and Lasallian Guiding Principles Session for Day 4-The Mission

ITEMS	N	Mean	Std. Deviation	Verbal Interpretation
DAY 4-THE MISSION				
I have been given a copy of the Lasallian Guiding Principles.	1303	4.5602	.70057	Excellent
I have experienced that a good orientation relative to the conduct of LGP session has been done.	1303	4.3308	.76724	Excellent
I have been given a clearer background of the Lasallian Guiding Principles during the session.	1303	4.3408	.74914	Excellent
I have now a clear understanding of the contents of the Lasallian Guiding Principles after the session.	1303	4.3078	.76582	Excellent
I have been given the opportunity to share my expectations about the session/activity.	1303	4.1159	.86736	Good
I have observed that everyone has been given the opportunity to share his/her thoughts about the topics during the session.	1303	4.1305	.85141	Good
I have observed that everyone has been very comfortable sharing his/her thoughts about the topic.	1303	4.0614	.89077	Good
I have seen the relevance of the activities and have enjoyed them at the same time.	1303	4.1888	.85309	Good
I have seen that the facilitators have prepared for the session.	1303	4.3975	.74984	Excellent
I have noticed that the venue is conducive for the kind of session we have had for the day.	1303	4.4190	.73804	Excellent
I have observed that the discussion of the topic-The Mission has promoted an atmosphere of active participation, commitment and solidarity in our group.	1303	4.3216	.78497	Excellent
Average (Day 4)	1303	4.2887	.61872	Excellent

Taking into consideration the conduct of the **Day 4 Session-The Mission**, Table 4 highlights that over-all, the respondents believed that it far exceeds their expectations, as supported by the mean score of 4.2887 interpreted as Excellent. Significantly, out of 11 items in this session, 7 were rated excellently. This is a proof that the discussion of the Lasallian Guiding Principles slated during Day 4 was indeed very important for the respondents and that they were all mindful of the contents and details of the said presentations. This day 4 also completed the theoretical foundations of the students vis-à-vis the presentation of their final output which is an advocacy video.

Table 5. Evaluation of the Conduct of Intro to La Salle and Lasallian Guiding Principles Session for Day 5-The Celebration

ITEMS	N	Mean	Std. Deviation	Verbal Interpretation
DAY 5-THE CELEBRATION				
I have experienced that a review of the previous sessions and activities have been conducted during the last session.	1303	4.4213	.72464	Excellent
I have witnessed wonderful presentations from the different groups.	1303	4.5472	.66562	Excellent
I have seen that the final outputs of the 5-day session are clear manifestation of the success of the program.	1303	4.4612	.72257	Excellent
I find the conduct of the Intro to La Salle and LGP session very relevant, helpful and contributory to my development as a student and as a Lasallian.	1303	4.4605	.74864	Excellent
I can now proudly say I am a true Lasallian.	1303	4.6431	.64225	Excellent
Average (Day 5)	1303	4.5067	.58229	Excellent

Table 5 presents the evaluation of the respondents in terms of their experience in attending the **Day 5 Session-The Celebration**. The table points out that the all items contained in this session were all rated excellently, as reflected in the mean score of 4.5067 verbally described as far exceeds expectations. The said mean score clearly shows how successful the conduct of the session had become and how the students enjoyed and loved watching their own outputs- Advocacy Video. This day also was celebrated through the distribution of the certificate of completion and the token for all those who successfully completed the 5-day program.

Table 6. Summary of Evaluation

ITEMS	N	Mean	Std. Deviation	Verbal Interpretation
DAY 1-THE PERSON	1303	4.3441	.57035	Excellent
DAY 2-THE INSPIRATION	1303	4.2127	.63720	Excellent
DAY 3-THE ASSOCIATION	1303	4.3740	.59962	Excellent
DAY 4-THE MISSION	1303	4.2887	.61872	Excellent
DAY 5-THE CELEBRATION	1303	4.5067	.58229	Excellent
OVER-ALL MEAN	1303	4.3449	.53081	Excellent

In summary, the over-all result of 4.3449 with an excellent rating verbally described as far exceeds expectations is a manifestation and an empirical proof of the success of the program. Notably, the individual mean score and standard deviations per session day reveal that the objectives of the program were met, the facilitators and the secretariat did their very best to be able to have a better result. The excellent rating for the conduct of the Intro to La Salle and the contextualization and living out of the Lasallian Guiding Principles clearly shows that the Institute is responsive to the needs of the students and that the integration of such to the curriculum effects positive change into the lives of the students.

CONCLUSIONS

In the light of the findings of the study, the following conclusions are drawn:

1. The rating scores show that the conduct of Day 1-The Person Session and Day 2-The Inspiration far exceeded the expectations of the first and second year students of DLSHSI.
2. The rating shows that the programs for Day 3-The Association, how the execution and delivery was done, how the facilitators delivered the program, was evaluated excellently. This could be attributed to the materials used during the program, the activities performed by the students and the line-up of facilitators.
3. The excellent rating of the 7 items is a proof that the discussion of the Lasallian Guiding principles slated during Day 4-The Mission was indeed very important for the respondents and that they were all mindful of the contents and details of the said presentations. This day 4 also completed the theoretical foundations of the students vis-à-vis the presentation of their final outputs which is an advocacy video.
4. The excellent mean score clearly shows how successful the conduct of the session had become and how the students enjoyed and loved watching their own outputs, Advocacy Video.
5. The excellent rating for the conduct of Intro to La Salle and the contextualization and living out of the Lasallian Guiding Principles sessions clearly shows that the Institute is responsive to the needs of the students and that the integration of such to the curriculum effects positive change into the lives of the students.

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I have become who I am today because of De La Salle Health Sciences Institute. My gratitude is forever accorded to the men and women of this beloved Institute of Higher Learning who value faith, zeal for service, communion in mission, and reverence for life.

Animo La Salle!

J.O.C.

For All That Has Been, Thanks

Growing a Sense of Gratitude

Dr. Rowan Williams and Joan Chittister

THE INSTRUMENT

IN THE FOOTSTEPS OF DE LA SALLE: ON BECOMING A LASALLIAN

INTRO TO LA SALLE AND CONTEXTUALIZATION AND LIVING OUT THE LASALLIAN GUIDING PRINCIPLES SESSIONS FOR ALL INCOMING FIRST YEAR AND SECOND YEAR STUDENTS, SY 2016-2017

Directions: Please evaluate the program you have just attended by checking the box corresponding to your rating:

- 1= Poor; Does not meet expectations
- 2= Needs Improvement; Sometimes meets expectations
- 3= Fair; Meets expectations
- 4= Good; Exceeds expectations
- 5= Excellent; Far exceeds expectations

ITEMS	1	2	3	4	5
DAY 1-THE PERSON					
I have experienced an orientation program relative to the conduct of Intro to La Salle and LGP sessions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have been given a clearer background of the Institution where I now belong through the presentation of the De La Salle Philippines and De La Salle Health Sciences Institute and their Structures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have fully appreciated now the contents of the VISION-MISSION-VALUES-CREED OF DLSHSI after the session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have fully appreciated now the Lasallian Prayer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have been given the opportunity to share my expectations about the session/activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have seen the relevance of the activities and have enjoyed them at the same time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have seen that the facilitators have prepared for the session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have noticed that the venue is conducive for the kind of session we have had for the day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DAY 2-THE INSPIRATION					

I have seen that introductory activities relative to the Life of St. John Baptist De La Salle has been conducted and participation of everyone has been accomplished.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have fully appreciated who St. John Baptist De La Salle is after the session.					
I have seen the full attention and participation of everyone.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have observed that everyone has been given the opportunity to share his/her thoughts about the topics during the session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have observed that everyone has been very comfortable sharing his/her thoughts about the topic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have seen the relevance of the activities and have enjoyed them at the same time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have seen that the facilitators have prepared for the session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have noticed that the venue is conducive for the kind of session we have had for the day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DAY 3-THE ASSOCIATION					
I have seen that introductory activities relative to the topics for the session has been conducted and participation of everyone has been accomplished.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have fully appreciated what is expected of me as a Lasallian and as a Lasallian student.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I could personally say that I have now fully understood the things that I shouldn't do as a Lasallian student after the session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have seen the relevance of the activities and have enjoyed them at the same time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have seen that the facilitators have prepared for the session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have noticed that the venue is conducive for the kind of session we have had for the day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have observed that the discussion of the topic-The Association has promoted an atmosphere of active participation, commitment and solidarity in our group.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DAY 4-THE MISSION					
I have been given a copy of the Lasallian Guiding Principles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have experienced that a good orientation relative to the conduct of LGP session has been done.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have been given a clearer background of the Lasallian Guiding Principles during the session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have now a clear understanding of the contents of the Lasallian Guiding Principles after the session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have been given the opportunity to share my expectations about the session/activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have observed that everyone has been given the opportunity to share his/her thoughts about the topics during the session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have observed that everyone has been very comfortable sharing his/her thoughts about the topic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have seen the relevance of the activities and have enjoyed them at the same time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have seen that the facilitators have prepared for the session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have noticed that the venue is conducive for the kind of session we have had for the day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I have observed that the discussion of the topic-The Mission has promoted an atmosphere of active participation, commitment and solidarity in our group.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DAY 5-THE CELEBRATION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have experienced that a review of the previous sessions and activities have been conducted during the last session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have witnessed wonderful presentations from the different groups.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have seen that the final outputs of the 5-day session are clear manifestation of the success of the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I find the conduct of the Intro to La Salle and LGP session very relevant, helpful and contributory to my development as a student and as a Lasallian.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can now proudly say I am a true Lasallian.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENDATIONS:

RECOMMENDATIONS:

Thank You Very Much!

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Increasing the Success Rate in Mathematics at the College of Polytechnics Jihlava (Czech Republic) as a Result of the Implementation of Support Measures

Martina ZÁMKOVÁ

*College of Polytechnics Jihlava, Czech Republic
martina.zamkova@vspj.cz*

Martin PROKOP

*College of Polytechnics Jihlava, Czech Republic
martin.prokop@vspj.cz*

Radek STOLÍN

*College of Polytechnics Jihlava, Czech Republic
radek.stolin@vspj.cz*

ABSTRACT

This article evaluates students' success rate in Mathematics 1, and its main objective is to show that the success rate has been increasing over the last two years. The introduction of several support measures has been the impetus for the achieved improvement. First of all, it was decided to make students with insufficient level of mathematical knowledge enrol in a supporting course, called the Mathematical Seminar, before studying Mathematics 1. In Mathematical Seminar these students can complete and practice their knowledge and skills of secondary mathematics. A database of solved and unsolved exercises, a textbook, and an e-learning module were created to fit the purposes of the Mathematical Seminar. The characteristic feature of these introduced materials is the special emphasis that has been placed on their comprehensibility and complete clarity. The possibility to attend the winter and summer schools of mathematics represents yet another supportive measure. Research has shown that statistically significant improvements have been achieved by students in the programmes of Finance and Management, Applied Computer Science, and Travel and Tourism. On the contrary, no significant improvement has been demonstrated regarding the students in the Computer Systems programme. To assess the dependencies we used the analysis of contingency tables and correspondence analysis. In order to identify a statistically significant improvement in the students' results in Mathematics 1 nonparametric two-sample tests of equality of means were applied.

INTRODUCTION

The students' success rate in mathematics has been declining at the College of Polytechnics Jihlava (CPJ) in recent years. This is evidenced by the data covering the last twelve academic years, obtained from the CPJ's information system. The data contain information on students' grades in the subject Mathematics 1 and students' identification details, such as their study programme, form of study, graduation year, etc. The gathered data are predominantly categorical, so we used the analysis of contingency tables and correspondence analysis for the evaluation of dependencies. The dependency of the variables in the contingency table was evaluated using the Pearson's test of independence. In order to identify a statistically significant improvement in the students' results in Mathematics 1 two-sample tests of equality of means were used. Students' grades were evaluated by the ordinal scale of 1 to 4. Due to the fact that the majority of students is always rated with an F, the grades' distribution is significantly asymmetric; the normality of this distribution was rejected by the Shapiro-Wilk test and the Kolmogorov-Smirnov test with Lilliefors correction. Considering the ordinal character of the data and the rejected normality, the Mann-Whitney U test and the Wald-Wolfowitz Runs test were used to identify the statistically significant improvements.

A paper by Zámková and Blašková (2014) focused on similar issues. The paper's objective was to assess the Mathematics-1 exam success rate at the Faculty of Business and Economics of Mendel University in Brno. Similarly Kučera, Svatošová, and Pelikán (2015) analysed the relationship between the admissions mathematics test results and the success rate in Mathematics, and Mathematical Methods in Economics. Kouřilová and Bebčáková (2015) concluded that the mathematical knowledge of students coming from high schools is decreasing each year. On that note – the impact of the decreasing quality of high school mathematical education on university success rates in mathematics was addressed by Kučera, Jindrová, and Vydrová (2013). Uysal (2007) compared the success rate in mathematics at selected schools in Turkey. Kuncová and Mulač (2016) compared trends in higher education in the Czech Republic, Slovakia and Austria.

There are other authors (McDonough and Tra, 2017) who conclude that the level of mathematical skills is consistently low among students at American schools, which is in line with the conclusion of our research. While

Mathematical Seminar was introduced at CPJ, a computer-supported mathematical tutorial was created to support the mathematical knowledge of the students at Clark Country School District in Nevada; its impact was later studied, to assess its influence on the success rate in mathematics. Beal et al. in their article (2007) describe a similar on-line tutorial for students, intended to enhance their mathematical skills. A case study with a group of students showed that the tutorial brought about the greatest improvement to the students with the weakest level of the initial mathematical skills. Even much more extensive support measures for the education of mathematical subjects were introduced by Oliveira and Freitas (2016) at the School of Engineering of the University of Porto; their arrangements included namely an additional support to the face-to-face classes, distance education system, using technology and social networks to enhance learning with multiple learning strategies (forum, videoconferences, multiple-choice tests, materials repository, etc.). Analysed data regarding students' success rate revealed the fact that all mathematical courses that implemented this project in the lessons later reported an improvement of results. Majovská and Friedrich (2014) from the Technical University of Ostrava proved that the usage of simple study materials and modern technologies improved students' success rate and their attitude towards mathematics. Ulrychová (2015) addressed the relationship between the knowledge of mathematical theory and the ability to solve exercises among the students of University of Economics. The results lead her to question what the ideal ratio of theory to practise is in mathematics courses at non-technical universities.

MATERIALS AND METHODS

Primary data was taken from the College of Polytechnics information system. The categorical data includes students' success rates in Mathematics 1 for the years 2004-2016 and relevant identification variables. Mathematics 1 is supposed to provide students with basic knowledge of mathematical analysis and linear algebra.

Contingency tables present an easy way of displaying relations among categorical data. Depending on the character of the data we then used applicable tests of independence. According to Řezanková (1997), for the case of a contingency table of the $r \times c$ type (r is the number of rows, c is the number of columns) we most often use the test statistic:

$$\chi^2 = \sum_i \sum_j \frac{(n_{ij} - e_{ij})^2}{e_{ij}}, \quad (1)$$

where e_{ij} is the expected frequency and n_{ij} the observed frequency. We use the statistic χ^2 in Pearson's chi-square test with asymptotically $\chi^2_{(r-1)(c-1)}$ distribution. The null hypothesis of the test assumes independence. For further details see Hindls (2003). The condition that maximum 20% of the expected frequencies are less than five must be met in order to use the Pearson's chi-square test, see Hendl (2006) and Agresti (1990). We use Fisher's exact test in other cases or we calculate the simulated p-value of χ^2 statistic, see Anděl (2005). Usage of the test was described in Chalupová and Prokop (2014) as well.

Correspondence analysis that was used for this study is a multivariate statistical technique, which allows the display and summary of a set of data in two-dimensional graphic form. It is traditionally applied to contingency tables – correspondence analysis decomposes the chi-squared statistic associated with this table into orthogonal factors. The distance between single points is defined as a chi-squared distance. The distance between i th row and i' th row is given by the formula

$$D(i, i') = \sqrt{\sum_{j=1}^c \frac{(r_{ij} - r_{i'j})^2}{c_j}}, \quad (2)$$

where r_{ij} are the elements of row profiles matrix \mathbf{R} and weights c_j are corresponding to the elements of column loadings vector c^T , which is equal to mean column profile (centroid) of column profiles in multidimensional space. The distance between columns j and j' is defined similarly. The aim of this analysis is to reduce the multidimensional space of row and column profiles and to save maximally original data information (Hebák et al., 2007). The total variance of the data matrix is measured by the inertia, (see, e.g., Greenacre, 1984), which resembles a chi-square statistic but is calculated based on relative observed and expected frequencies. Unistat and Statistica software was used for primary data processing.

Nonparametric two-sample tests are applied in situations when the requirement of data normality is not met. These tests work with a sequence of values, thus they can also be used for ordinal data. Let us assume that X_1, \dots, X_m is a random selection from a statistical distribution and that Y_1, \dots, Y_n is another random selection from the same distribution as the first only shifted by a constant of δ and independent on the first selection. Thus the random variables X_1, \dots, X_m and $Y_1 - \delta, \dots, Y_n - \delta$ have the same distribution. We test the null hypothesis $H_0: \delta = 0$, that these distributions are identical with the same distribution function, against a two-

sided alternative $H_1: \delta \neq 0$. All of $m+n$ values of the quantities X_1, \dots, X_m and Y_1, \dots, Y_n are to be arranged in ascending order before testing. Let us denote the sum order of values of X_1, \dots, X_m by T_1 and similarly sum order of values of Y_1, \dots, Y_n by T_2 . It holds that $T_1 + T_2 = \frac{1}{2}(m+n)(m+n+1)$. It is possible to work out the statistics

$$U_1 = mn + \frac{n(n+1)}{2} - T_1, \quad U_2 = mn + \frac{m(m+1)}{2} - T_2.$$

It holds that $U_1 + U_2 = mn$. We compare minimum of (U_1, U_2) with the critical value of $w_{m,n}(\alpha)$. If $\min(U_1, U_2) \leq w_{m,n}(\alpha)$, then we can reject the hypothesis H_0 at a significance level of α . This test is sometimes called the Mann-Whitney test and is also implemented in the Statistica software. If we use the so called Wald-Wolfowitz test, we proceed in the same way, only after arranging all $m+n$ values in ascending order, we will use another test statistic denoted by R , which is the number of progressions of consecutive values belonging to the same selection. If $R \leq r_{m,n}(\alpha)$, where $r_{m,n}(\alpha)$ is the critical value of the test, then we can reject the hypothesis under test at a significance level of α , see Anděl (2005).

FINDINGS

The table of row relative frequencies below, covering the whole monitored period, suggests that the programmes Finance and Management and Travel and Tourism reported better success rate in Mathematics 1 than the other two. The success rate there varies around 45%. As for the more technically oriented programmes (Applied Computer Science and Computer Systems), the success rate has gone slightly over 30% [see Table 1].

Row relative frequencies	Succeeded	Failed
Finance and Management (FM)	44.90%	55.10%
Applied Computer Science (ACS)	32.76%	67.24%
Computer Systems (CS)	30.45%	69.55%
Travel and Tourism (TT)	46.52%	53.48%

Table 1: Contingency table: Study programme and success rate in Mathematics 1.

The next table of row relative frequencies indicates that following the overall downward trend, the year of 2015/2016 saw an improvement in the success rate. The success rate has increased by approx. 10 percentage points [see Table 2].

Row relative frequencies	Succeeded	Failed
2004/2005	65.40%	34.60%
2005/2006	72.33%	27.67%
2006/2007	72.22%	27.78%
2007/2008	58.47%	41.53%
2008/2009	41.51%	58.49%
2009/2010	46.60%	53.40%
2010/2011	42.84%	57.16%
2011/2012	41.23%	58.77%
2012/2013	35.09%	64.91%
2013/2014	31.88%	68.12%
2014/2015	32.01%	67.99%
2015/2016	42.10%	57.90%

Table 2: Contingency table: Monitored period of time and success rate in Mathematics 1 (FM, ACS, CS, TT).

The row relative frequencies below show that the proportion of A grades has been decreasing in the past years. However, in the last academic year, the build-up of A grades allowed to reach roughly the same level of the percentage share as was noted in the first years of the reference period. There was no significant development with regard to the B grade. The C grade demonstrated a decrease in the period under review, albeit with some exceptions; however the last year seems to indicate a distinctive increase in the number of students graded with C, i. e. approx. 2 percentage points. Looking at the E grade, there is a similar development trend. With the

exception of the first two years, the proportion of F grade demonstrated values above 60% and close to that. In 2013–2015 the share of F grades even exceeded 70%. The last reference year was a year when this share fell back to the above 60% level [see Table 3].

Row relative frequencies	A	B	C	D	E	F
2006/2007	8.49%	4.40%	16.98%	11.95%	28.93%	29.25%
2007/2008	4.09%	2.92%	11.99%	7.89%	25.15%	47.95%
2008/2009	3.30%	2.61%	6.73%	4.53%	17.45%	65.38%
2009/2010	3.84%	2.43%	8.83%	4.87%	20.87%	59.15%
2010/2011	3.82%	3.58%	5.43%	8.01%	15.78%	63.38%
2011/2012	1.49%	3.73%	8.36%	11.04%	14.33%	61.04%
2012/2013	1.22%	2.44%	8.03%	8.03%	14.83%	65.45%
2013/2014	1.83%	4.79%	7.89%	5.49%	7.61%	72.39%
2014/2015	2.28%	2.98%	7.18%	5.95%	7.88%	73.73%
2015/2016	3.78%	4.62%	9.03%	5.88%	11.13%	65.55%

Table 3: Contingency table: Monitored period of time and final grades in Mathematics 1 (FM, ACS, CS).

It is clear from the correspondence map that the worst results in mathematics were achieved in the period 2013–2015, the points corresponding to those years are placed close to the F rating and at the same time are most distant from the points representing the rest of the grades. The results of the last academic year under review came again close to the 2010–2013 numbers [see Figure 1].

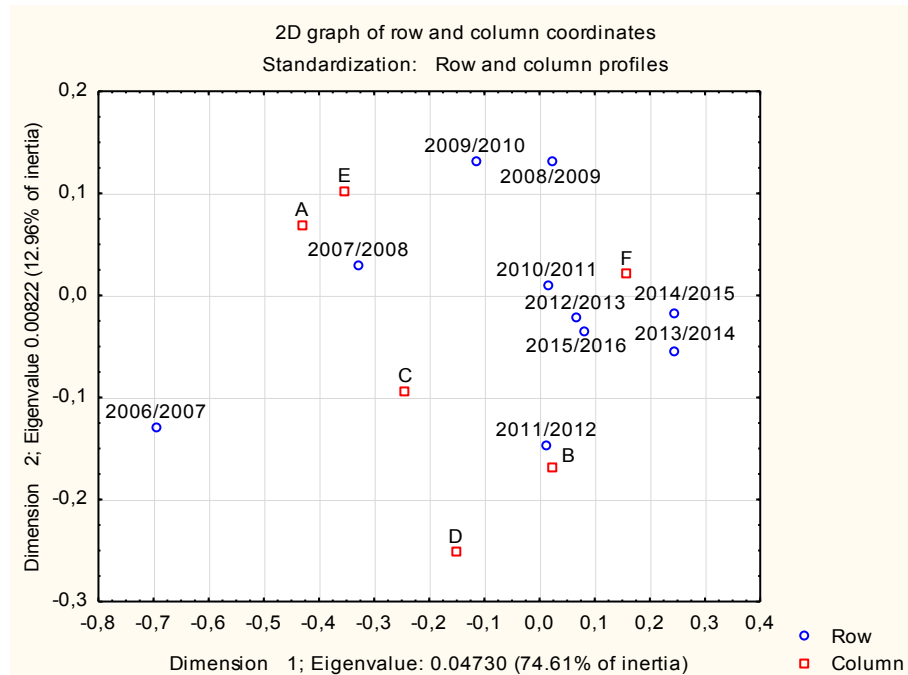


Figure 1: Correspondence map: Monitored period of time and final grades in Mathematics 1 (FM, ACS, CS).

Drawing on the row relative frequencies table below [see Table 4], the success rate of students enrolled in Applied Computer Science appear to have dropped significantly in the academic year 2012/2013. Since then, the success rate has been continuously slightly improving with a significant increase of the success rate in the last monitored year, amounting to approx. 17 percentage points. The following table points [see Table 5] of row relative frequencies shows that in 2011–2013 there has been a distinctive decline in the success rate with regard to the students of Travel and Tourism, the success rate dropped to almost 30%. The last year of the reference period saw a significant increase in the success rate, by about 18 percentage.

Row relative frequencies	Succeeded	Failed
2007/2008	42.70%	57.30%

2008/2009	38.55%	61.45%
2009/2010	46.67%	53.33%
2010/2011	41.67%	58.33%
2011/2012	49.15%	50.85%
2012/2013	12.68%	87.32%
2013/2014	14.63%	85.37%
2014/2015	19.57%	80.43%
2015/2016	36.52%	63.48%

Table 4: Contingency table: Applied Computer Science – monitored period of time and success rate in Mathematics 1.

Row relative frequencies	Succeeded	Failed
2007/2008	81.58%	18.42%
2008/2009	79.80%	20.20%
2009/2010	69.70%	30.30%
2010/2011	64.06%	35.94%
2011/2012	44.02%	55.98%
2012/2013	33.04%	66.96%
2013/2014	36.51%	63.49%
2014/2015	36.57%	63.43%
2015/2016	54.46%	45.54%

Table 5: Contingency table: Travel and Tourism – monitored period of time and success rate in Mathematics 1.

Focusing now on the Finance and Management programme: there had been an initial increase of the students' success rate and after that, since 2007/2008, we witnessed a decrease that reached values around 30–40%. Comparing the period of 2013–2015 and the last year, the success rate grew by about 10 percentage points [see Table 6].

Row relative frequencies	Succeeded	Failed
2004/2005	65.40%	34.60%
2005/2006	72.33%	27.67%
2006/2007	84.62%	15.38%
2007/2008	61.17%	38.83%
2008/2009	35.43%	64.57%
2009/2010	42.43%	57.57%
2010/2011	37.85%	62.15%
2011/2012	40.00%	60.00%
2012/2013	42.11%	57.89%
2013/2014	34.47%	65.53%
2014/2015	33.83%	66.17%
2015/2016	43.00%	57.00%

Table 6: Contingency table: Finance and Management – monitored period of time and success rate in Mathematics 1.

Here the row relative frequencies suggest that after a gradual decrease in success rate in 2006–2012, the students in the Computer Systems programme and their success rate displayed a sharp decline in the academic year 2012/2013 – the success rate dropped to almost 10%. This programme reported the least significant improvement in the last year under review – only 1 percentage point. Therefore the applied measures were the least effective with regard to this programme [see Table 7].

Row relative frequencies	Succeeded	Failed
2006/2007	48.80%	51.20%
2007/2008	43.33%	56.67%
2008/2009	40.86%	59.14%
2009/2010	41.67%	58.33%
2010/2011	34.44%	65.56%
2011/2012	35.48%	64.52%
2012/2013	15.52%	84.48%
2013/2014	12.77%	87.23%
2014/2015	12.63%	87.37%
2015/2016	13.25%	86.75%

Table 7: Contingency table: Computer Systems – monitored period of time and success rate in Mathematics 1.

We used tests of equality of means in order to determine the improvement of the students' results in Mathematics 1 after the implementation of support measures in the last two years. This is a comparison of results achieved by different students, hence the two-sample tests were used. The results of the students were evaluated on an ordinal scale from 1 to 4. The scale includes 6 values in total. The use of a parametric t-test requires at least approximate normality of the input data. The normality was tested with the use of the Shapiro-Wilk test and the Kolmogorov-Smirnov test with Lilliefors correction. The normality was rejected by all the tests [see Figure 2], considering the remarkably asymmetrical distribution with a majority of students graded with an F.

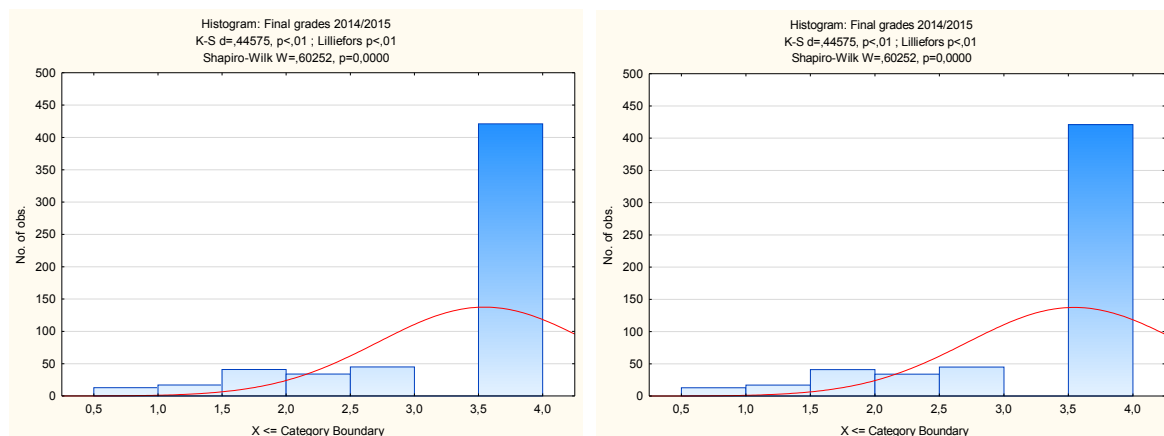


Figure 2: Histogram: Normality tests - final grades in Mathematics 1 (FM, ACS, CS).

Study programme	FM, ACS, CS	ACS	FM	CS
Rank Sum Group 1	310643.0	10120.00	134801.5	8255.500
Rank Sum Group 2	237985.0	10383.00	89983.50	7144.500
U	124459.0	4167.000	49797.50	3741.500
Z	2.347781	2.136098	2.005308	0.212297
p-value	0.018886	0.032672	0.044931	0.831875
Z adjusted	2.900400	2.730389	2.344873	0.384463
p-value	0.003727	0.006326	0.019034	0.700636
Valid N Group 1	571	91	387	93
Valid N Group 2	476	111	283	82

Table 8: Mann-Whitney U Test - final grades in Mathematics 1, years 2014/2015 and 2015/2016.

Based on the rejected data normality and the ordinal character of the data, nonparametric tests were employed instead of the parametric tests, these included namely the Mann-Whitney test and the Wald-Wolfowitz test [see Table 8 and Table 9]. The significant tests at $p < 0.05$ are highlighted.

Study programme	FM, ACS, CS	ACS	FM	CS
Valid N Group 1	571	91	387	93
Valid N Group 2	476	111	283	82
Mean Group 1	3.545534	3.769231	3,418605	3,854839
Mean Group 2	3.390756	3.450450	3,254417	3,780488
Z	-7.93070	-4.13317	-10.6913	-10.3749
p-value	0.000000	0.000036	0.000000	0.000000
Z adjusted	7.899520	4.061935	10.65164	10.29881
p-value	0.000000	0.000049	0.000000	0.000000
No. of Runs	393	72	193	20
No. of ties	388	69	189	16

Table 9: Wald-Wolfowitz Runs Test - final grades in Mathematics 1, years 2014/2015 and 2015/2016.

Both tests confirmed a statistically significant improvement in the ACS and the FM programmes, plus in the overall evaluation of all students, with the exception of the TT programme. The CS programme proved to have achieved an improvement according to the Wald-Wolfowitz test; the Mann-Whitney test failed to reject the equal evaluation. Considering the greater significance of the Mann-Whitney test, we concluded not to confirm an improvement with regard to the CS programme.

Row relative frequencies	Succeeded	Failed
2014/2015	36.57%	63.43%
2015/2016	54.46%	45.54%

Table 10: Contingency table: Travel and Tourism – success rate in Mathematics 1, years 2014/2015 and 2015/2016.

In the Travel and Tourism programme, the students are only granted credits when finishing the course successfully, it was therefore impossible to use the test of equality of means. There is a contingency table provided for the Travel and Tourism programme [see Table 10] and the Pearson's chi-square test confirmed that the students of this programme have reached a significant improvement, p-value is less than 0.001.

DISCUSSION AND CONCLUSIONS

The analysis proved that when it comes to the course called Mathematics 1, the students enrolled in the Finance and Management and Travel and Tourism programmes are more successful – with the success rate around 45%. The students in the more technically oriented programmes have proven to have a success rate by about 15 percentage points lower. The years 2004–2015 saw a continuous decline of the success rate in the aforementioned course. In the academic year of 2014/2015, several support measures were implemented with the aim to improve the success rate. These measures include the Mathematical Seminar for students who have failed in the entrance test for the course Mathematics 1, summer and winter schools in mathematics, and new learning materials (textbooks and innovated e-learning module). In addition to that, the students now have an access to an on-line collection with a database of solved exemplary exercises. The introduction of these measures was followed by a statistically significant improvement of the students' performance in the course Mathematics 1 after the academic year 2014/2015. Further probe focused on the individual study programmes and confirmed the statistically significant improvement with regard to the students of the three courses – Finance and Management, Applied Computer Science, and Travel and Tourism. As for the Computer Systems programme, the improvement was not positively confirmed due to the different outcomes of two performed tests (Mann-Whitney U Test, Wald-Wolfowitz Runs Test). In order to demonstrate a statistically significant development in the last two years, non-parametric tests were put to use, considering the input data non-normality. Further on, contingency tables and the Pearson's chi-square test of independence were used to carry out the success rate analysis of individual years and to assess the success rate improvement in the Travel and Tourism course. The data in the contingency tables clearly demonstrate that the greatest success rate increase was recorded in the last two academic years in the Applied Computer Science and Travel and Tourism programmes – about 18 percentage points; the students of the Computer Systems on the other hand have been confirmed to achieve only minor improvement – less than one percentage point. All the tests turned out to be statistically significant (p-value is less than 0.05), with the exception of the task to confirm the statistically significant improvement in the

past two years regarding the students of the Computer Systems programme. The Pearson's chi-square tests suggest even greater significance (the p-value is less than 0.001).

Our research showed that the students' success rates in Mathematics 1 are statistically significantly dependent on the study programme. It was the goal of the research pursued by the authors Zámková, Prokop and Stolin (2016a) and Zámková, Prokop and Stolin (2016b) to find more factors influencing the students' success rate. The same authors have found out that gender, form of study, and the study programme have an impact on the success rate in the course Mathematics I. Similarly, Kučera, Svatošová and Pelikán (2015) evaluated different success factors in mathematical courses.

The state of affairs before the implementation of the measures is well depicted in an article by Zámková, Prokop and Stolin (2016c). Similarly to the approach covered by Fonteyne et al. (2015), we too have come with various improvements to change student's grades in mathematics, the first of those being an entrance test for this subject to be completed by the students as a part of their first lesson. Those who fail in the entrance test are allowed to cancel their enrolment in the course Mathematics I and go for a complementary Mathematical Seminar. Still, despite the acclaimed improvement that came with the supporting measures, the most frequent grade obtained in mathematics at the Faculty of Business and Economics of Mendel University in Brno and also at CPJ is F – failed, as is confirmed also by Zámková and Blašková (2014). After the introduction of a vast array of measures at the School of Engineering of the University of Porto, the authors Oliveira and Freitas (2016) recorded an improvement of grades in mathematical courses. It stems from our research that our taking similar steps helped with a significant improvement of students' grades in mathematics. Majovská and Friedrich (2014) claim that the more updated and more simple study materials, the better the success rate. Our college also made an effort to achieve simplicity and comprehensibility of new learning materials – textbooks, e-learning module and a database of examples.

The students' success rate in Mathematics 1 course at the College of Polytechnics in Jihlava will be closely monitored in the future and we shall continue to evaluate the efficiency of introduced measures.

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Industry and Vocational Education

İsmail BECENEN

Trakya University,

Edirne Technical Sciences Vocational School

ibecenen@trakya.edu.tr

ABSTRACT

When quality in education is mentioned, the appreciation of education system, the education being perfect, people having knowledge and skill to follow new developments in education, briefly education those people who has such attitudes comes into mind. The aim of vocational education is to train skillful people who have adequate vocational knowledge and the ones who the institutions and companies in business life really need. Companies and industry associations suggest that they can't find manpower high who is quality, skilled, qualified, having enough vocational knowledge and schools don't achieve to train manpower which has the above aspects. Education such manpower who has such aspects mentioned above his only possible with high quality vocational education and teaching.

Key Words: Vocational education, quality, industrial enterprises, schools, knowledge and skill.

INTRODUCTION

The most important aspect of education process is the quality of education. As for the quality of education, it is a phenomenon to respond to the society's needs and demands in expected level and stage with their related knowledge, skills and attitudes of the people who are exposed to education (Tufan, 2009, P.27-40)

While developed countries train human sources according to their quality and quantity which they target, undeveloped countries have a serious crisis in education human resources the country needs for the economy of the country (Kurul-Tural, 2002). Vocational education has been a decisive and definite factor in human beings advance (Rickey, 1971, p.1). Vocational education, regarding its character, is a type of formal education which costs more expensive than general education (Alkan, 2001, p.12).

In order to introduce high quality vocational education and to succeed in it, guidance from advisers, according to students individual capacity must be conducted by starting from nursery school continuing to the end of high school. Students become successful both in vocational education at school and their business life when they choose a profession not by chance, but according to their interest, skills, capacity. When students start to work in an area related to their profession after graduation, a choice of profession must be given importance and interest, skills and the capacity of the students must be taken into account so as to adapt to their new profession. Schools should have an infrastructure to respond to the students and society's expectations in order to improve the quality of education and to increase the student's success. Quality in education is the convenience of education goals, the students carrying out the employer's demands which occur in working life after graduation, students performance, their experience and theoretical and practical knowledge gain (Bulut, 1998, p.68).

Quality council, quality developing teams and quality rings must be established so that high quality education can be done at schools.

The leaders of the organization form quality councils because they become the pioneer to determine necessary desire and the key topics for the success of the organization.

Quality councils act as leaders, direct, find source and form the total quality managements communication.

Quality developing teams who are formed following quality councils are usually the teams who solve the problems the quality councils determine.

Quality rings are small groups who volunteer in the department and help to develop continually with the new approach which both quality council and quality developing teams have formed. Generally, they work to improve the procedure of the working surrounding and the relation with other departments (Hergüner, 1998, p.1-21).

Total quality managements application must be used commonly in the institutions which carry out vocational education and education since qualified, skillful people and the ones who have enough vocational knowledge which companies and industry associations need can't be trained at schools as it is mentioned earlier in the summary section.

Here are the criteria listed below to show the difference in education associations:

- Students characteristics
- Teachers aspects
- Infrastructure (workshops, laboratory, library etc.)
- Counseling service (being a trainee, communication with graduates)

If a meaningful quality increase in education is really asked, the factors mentioned above must be taken into account.

THE STUDY

In this study, The vocational education contribution of The cooperation of school and industry has been examined. Quality in vocational education can't be achieved with the approach which classical quality mentality programmed and plans everything in the center and applies it to the lower grades.

Our country is in a struggle as well for a reform in vocational and technical education which is suitable to the knowledge required by dynamic labor market and skills and support the quality education and training. In this sense, young people need to gain qualifications and improve and renew this qualification constantly for being employed in a dynamic and changing labor market.

Instead of this system, education associations should be examined individually and quality standards are supposed to be developed according to education regions, the aspects of industry associations, the data about beginning the working life.

Quality rings should be formed as well. It is known by a lot of educators that a resistance to learning in vocational education generally forms. The reasons are that the listeners are always passive in education and the education being given is boring, incomprehensible and not up to date. As to the solution of this problem, it is possible to apply student-centered education, enjoyable and didactic education models (Atherton, 1999, p.265-271)

FINDINGS

In order to realize education and education at schools which offer vocational technical education according to standards which companies need?

- Workshops and laboratories at schools should be equipped with the latest technology.
- Schools should be in contact with industry associations and companies.
- Industry associations, companies and employers should know what kind of aspects the staff must have regarding the profession.
- Measuring and evaluating must be carried out whether the students have learned adequate vocational knowledge out of the education and education presented.
- When workshops and laboratories at school are inadequate, related industry associations, companies, workshops, laboratories and application areas must be used.
- A questionnaire regarding students' interests about their profession must be conducted; in this questionnaire students must be asked questions about their profession. The questions must include the curriculum, the way how vocational education is done, the communication between educators and students and teaching methods, that's to say, all the elements in vocational education.
- Industry associations which will be in contact with must follow technology and use the up- to-date technology (Becen, 2016, p.945-947).
- So as to determine whether vocational education at schools are done in accordance with the goals, a commission consisting of experts in their field should check the schools at particular intervals.

This commission must include the related companies, industry associations, the representatives of profession rooms.

It is also to contain the graduates from the related school and those who work freely and the members and academicians who have reached a particular career in their profession.

- When students graduate from schools and start the working life, methods which can measure and determine their success must be applied.
- When students are graduate and start the working life, their opinions and recommendations regarding the area in their profession must be asked.

It is financially difficult to install up-to-date technology related to professions at schools.

Basic knowledge regarding must be professions taught at schools and advance knowledge and related applications must be carried out at work.

Vocational adequacy while preparing the curriculum must be taken into account and must be updated to respond to the developing technology.

Vocational foreign language, education at school must be carried out because students have difficulty in reading and commenting on the projects, catalogues about their profession when they start the working life after graduation. That causes the quality to decrease.

Vocational counseling units, especially at high schools must be set. These units must contact with the related associations and institutions and carry out profession presentations at school.

Those who don't choose their profession according to their capacity, skills, interest become unsuccessful in school life. As a result, they don't work in the field related to their profession and cause to waste workforce in education period.

One of the factors that affect the quality of education is that educators must have adequate knowledge about their profession.

In order to catch up with the quality both in the goods produced in companies and in the obtained services, firstly, high quality vocational education must be conducted at schools.

Students must be informed about the problems related to their profession which they may encounter in working life and their motivation must be increased.

Cooperation between school and industry associations must be definitely done for the quality in vocational education. This cooperation must include all the stages of education and education. These stages are:

- Theoretical and applied education must be given to students in companies.
- While programs are being started at schools, the companies and industry associations' opinions must be asked.
- Staff need of industry associations and companies must be taken into account while programs are being started.
- While preparing the curriculum of the programs, the opinions and suggestions of the well educated and experienced managers and workers who work in industry associations and companies must be taken into consideration.

Mutual trust between working life and associations which provides vocational education must be achieved. Necessary legal arrangements must be made to cause the cooperation between universities and working life obligatory.

In order for school industry cooperation to be sustainable delisting legal arrangements should be made to cover both school and related businesses. While education and training program are being organized, opinions of enterprise and related industrial organizations should be taken.

CONCLUSIONS

High quality vocational education and education may be achieved in a demanded level if schools and industry associations cooperate; educators who are exposed to education in particular period and learn about new technology and teach it to students.

Thanks to counseling and questionnaire, if students have a right profession choice.

If students opinions and suggestions about their vocational education after graduating from schools and start the working life are taken into account.

When high quality education and education is carried out, staff who are qualified, who can contribute to production, who can solve problems, who are skillful, who have adequate vocational knowledge can be educated.

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Influence of Experiential Education in Pre-Graduate Training of Teachers on the Classroom Climate – The Conflicts

Renata OROSOVA

Department of Education
Faculty of Arts
Pavol Jozef Safarik University in Kosice
Slovakia
renata.orosova@upjs.sk

Katarina PETRIKOVA

Department of Education
Faculty of Arts
Pavol Jozef Safarik University in Kosice
Slovakia
katarina.petrikova@upjs.sk

ABSTRACT

The classroom as a social and formal group is the environment where pupils spend all the time of the educational process at school. Each class is specific and perceived through the dominating climate. The organization of classroom is in the competence of the teacher, from the point of the view of the educational process is in the competence of the class teacher. Teacher affects expressively the classroom climate by its approach. Experiential education appears as one of the possibilities of creating a positive classroom climate. The contribution presents the possibility of the influence of experiential education in pre-graduate training of teachers on the positive change of classroom climate. Based on the results of research realized at selected elementary schools in Slovakia the authors emphasize the influence of class teacher on creation of a positive classroom climate, specifically on one of its components – the conflicts, through experiential education. Authors confirm the importance of implementation of experiential education into the pre-graduate training of teachers by realized research, which showed the difference between the work of teachers who had implemented experiential education within pre-graduate training and teachers who use experiential education only on the basis of their own knowledge.

INTRODUCTION AND THEORETICAL STARTING-POINTS

Upbringing and educational process at schools is making progress and teachers reach for newer and more effective means, methods and ways to impart knowledge to their pupils. Their endeavor is to prepare pupils on a theoretical basis in order to obtain the given knowledge by easier but more durable way. However, these activities related to education often neglect the factors which significantly contribute to efficiency of the learning process. Whether a pupil accepts new knowledge with interest, or perceives it as a duty or as a matter of course is highly important. Pupils' interest in the subject matter as a whole is conditioned by relationships – relationships between a curriculum, a pupil, a teacher, between pupils themselves and by entire **classroom climate**. The classroom atmosphere, the mentioned interrelationships, the cooperation of the particular components of the teaching process, attitude and emotions all characterize the climate of the class. The importance of pleasant environment, a place of good emotional background for learning activity, is obvious from several aspects. Optimum conditions, good, positive and optimal climate in a class predetermine the required results of the teaching process. Kolář et al. (2012) considers climate of a class as long-term atmosphere typical for a particular class created by pupils of the whole class, groups of pupils in a given class, individual pupils and teachers teaching in a particular class. Based on Průcha, Walterová and Mareš (2003) classroom climate is a variable representing long-term socio-emotional atmosphere and emotional responses of pupils to events happening in their class. The authors distinguish between current and preferred climate. The current climate is considered existing in given time and space. The preferred climate is required from the point of view of pupils and teachers. Petlák (2006) defines the climate of the class as the environment in which a student remains for a certain part of a day. The deeper meaning of the class he describes from several viewpoints, particularly in terms of social relations and moral values. From his point of view, it is not possible to separate the climate of the class and the teaching climate as they influence each other. In practice, a certain class is often marked as a good class, a cohesive class, a problematic and non-problematic class, a bad class, etc. The class status itself, used as a slang by teachers in a particular team, indicates class character and climate of the class. However, the status of the class is often only a 'result' of subjective assessment of the teacher who has built up his/her relationship to that class. Teachers have to remember that every pupil in the class is a personality and the composition of the class is currently diverse. The class team is made up of talented pupils as well as pupils with special needs and different researches confirm that teachers are unsufficiently prepared just in relation to the educational process and care of talented pupils as well as pupils with specific needs (Machů, Málek,

2015). The teachers' unpreparedness leads to a negative impact on the entire class climate. Classroom climate can be observed from five aspects – satisfaction, discrepancies, competitiveness, learning difficulties and class cohesion. Each teacher should know the climate of his class and develop it in positive way. In this respect, a social pedagogue as a professional school employee, who focuses on preventive and re-educative impact on pupils, can be helpful. According to Hroncová (2017) a social pedagogue functioning at school, is able to provide class discussions, pupils' talks, group interactive games and exercises, experiential talks, etc., thus by the way of consultations he/she would also have impact on teachers while they are creating positive class climate. At the present teachers have several options, ways, methods of developing positive classroom climate. One of them is also experiential education.

Experiential education develops a personality of an individual universally via specific forms, methods and means of education based on personal experiences and obtained experiences (Kratochvílová, 2010). It is actually an analysis of educational processes which work with an introduction, analysis and reflection of experiential events in order to obtain experience and their subsequent transfer to a real life (Jirásek, 2004). In experiential education, an experience is the way to achieve a goal, it is not a goal itself. Experience is the result of experiencing, a mental phenomenon that is emotionally coloured and strictly individual (Hartl, Hartlová, 2010). Experiential education is built (1) on the principles of carefully selected experiences completed with reflections, critical analysis and synthesis, on experiences and adventures structured in order to require an initiative, decision-receiving and responsibility for the results from the educated individual; (2) it is built on active involvement of an educated individual during the realization of the experience, on the adventure in questioning, experimentation, problem solving, taking responsibility, creativity and constructive thinking; (3) on intellectual, emotional and social involvement of educated individuals in the process; (4) on the discovery and testing own value systems of educated individuals during the process (Neuman, 2004). In the educational process, elements of experiential education have an irreplaceable position. Through targeted provoking an experience, simulative situations and analyzing a situation we are aiming to process the experience and transform it into an experience that greatly influences the individual's value system. The basic means of experiential education is **activity**. Pupils' activity in the educational process can be understood as a relationship between a teacher, a pupil and the aim of educational process in which pupils participate in their own cognitive activity. We can divide the means of experiential education into following activities (Hanuš, Chytilová, 2009): physical, artistic, socio-psychological, social, cognitive, technical, IT and medial. In conditions of pedagogical practice, the most common means of experiential education is a game. Every game should bring a moment of surprise and should be the way to gain an experience. Playing games results in taking on different roles. It is up to a pupil how he/she is experiencing this role, whether he/she is able to move beyond his/her limits while meeting the goals of the game. Well-prepared and realized games are universally reflected in the development of the personality of a pupil involved. The pupil is given a space to make a free decision on choice of involvement and choice of measure of involvement (Nemcová, 2015). Drama plays in schools supporting interpersonal relationships and contacts are irreplaceable (Puchalová, 2005). Using the means of experiential education in the pedagogical process is obvious, but it is important to use the means on the highest level of expertise. Since the different researches show the positive impact of means of experiential education on classroom climate, it is necessary for future teachers to master the methods of application of experiential education in their pedagogical practice, to learn how to work with the means of experiential education and to use them effectively during their pedagogical activities (Orosová, 2010; Orosová, 2011; Brestovanský, 2013; Ferencová, Šutáková, 2004). The issue of the scientific research on how the experiential education impacts on the development of the teachers' competency profile becomes thus highly up-to-date.

In recent years, the issue of education has frequently been discussed and reflected in a curriculum reform of our school system, one of the results of which was the adoption of the State Educational Program designed in accordance with the international standard classification ISCED 97. All schools were therefore requested to create their own School Educational Programmes according to newly set objectives and content emphasizing orientation and development of functional literacy as well as key competencies of pupils (Petrová, Duchovičová, 2013). The undergraduate training of teachers should therefore copy requirements of pedagogical practice and as stated by Petrová and Duchovičová (2013, p. 9): "just for the changed position of a teacher it is necessary to adjust undergraduate higher education of teachers so that they are able to respond to current changes in a society". Teachers should therefore be experts not only in the field of imparting knowledge, but also in curriculum designing and approach to the development of a pupil's personality. It is necessary to move from a teacher- consumer of curriculum with minimal professional autonomy through a teacher- modifier of the curriculum to a teacher-creator of curriculum (Rovňanová, 2015). Teacher as an active creator of curriculum can be much better encouraging individual cognitive and non-cognitive development of a pupil on different levels (Kosová, 2017). Such innovations should lead to a class and pupils' needs. This requirement should be already raised in undergraduate training focused on the development and creation of a **competency profile of a future teacher**. The researches confirm the need to support and broaden practical and professional preparation of future teachers leading to the

development of a competency profile (Kosová, Tomengová et al., 2015; Pavlov, 2013). Multilateral innovation and interdisciplinarity are required in order to build reflective nature of the practical professional training of future teachers, focusing on the introduction of various training and model simulations of school situations in the context of practical training in university conditions (Vonk, 1993; Ward, McCotter, 2004). The main focus and importance of developing the professional competencies of undergraduates are in their synergetic helping undergraduates think about their acting in both common and difficult school situations and show them which other competencies need to be improved (Murray, Christison, 2011; Sahlberg, 2010). One of the approaches of how to create and develop competence profile of future teachers appears to be an implementation of experiential education in their undergraduate training. Students who actively master learning methods, forms and means of experiential education and learn to use them in their pedagogical practice, according to the research below, are able to influence classroom climate positively. Since in our conditions there is no evidence of research investigation on the impact of experiential education on creating positive classroom climate, we decided to build on research studies on classroom climate, pre-gradual training and experiential education, to merge these aspects and realize our own research.

METHODOLOGY

The research was focused on the influence of experiential education applied by the class teacher in their work on the classroom climate. The aim of the research was to find out whether the classroom climate is, in fact, influenced by the class teacher who had employed the features of experiential educational already during their own pre-graduate training.

The goal of our research was to detect the influence of expert level experiential teaching on the classroom climate. As the independent variable, class teachers of the 5th year of the primary school were selected, based on the following criteria:

- a) *they used experiential education on the expert level*, i.e. *they studied* subjects aimed at the implementation of experiential education into the educational process from the position of the class teacher; and they actually apply this knowledge during class meetings.
- b) *they used experiential education on the non-expert level*, i.e. *they did not study* subjects aimed at the implementation of experiential education into the educational process from the position of the class teacher; however, they apply the method during class meetings because they learned it on their own.

The dependent variable was the classroom climate consisting of the following components: satisfaction, friction, competitiveness, teaching difficulty and class cohesiveness. For the purpose of this study, only conflicts were selected for focus.

In order to achieve the research goal, it was important to fulfil the following **research tasks**:

1. Identify the initial classroom climates in the research groups – pretest.
2. Carry out a teaching experiment – use experiential education by the class teacher during class meetings.
3. Verify the classroom climate after the experiment was carried out – posttest.

After these tasks were fulfilled, obtained data were statistically processed and correlations detected. Based on them, recommendations for the teaching practice were formulated.

The selected sample of subject consisted of pupils of the 5th year of primary schools located in the eastern part of Slovakia, namely the districts of: Stará Ľubovňa, Sabinov, Humenné, Prešov, Vranov and Košice. The collectives did not change in terms of members between the 4th and 5th years.

The sample was selected according to three criteria:

- ✓ there were at least two classes in the given year of study at the given school,
- ✓ one of the class teachers studied subjects aimed at the implementation of experiential education into the educational process from the position of the class teacher; and they applied this knowledge during class meetings.
- ✓ one of the class teachers did not study subjects aimed at the implementation of experiential education into the educational process from the position of the class teacher; however, they applied the method during class meetings based on what they learned on their own.

The experimental group (EG) consisted of 160 pupils from 6 primary schools. The control group (CG) consisted of 154 pupils from 6 primary schools. The total number of pupils involved in the research was 314 pupils in their 5th year of studies from 6 primary schools. 12 class teachers participated in the research; 6 teachers studied subjects aimed at the implementation of experiential education into the educational process from the position of the class teacher; and they applied this knowledge during class meetings, i.e. they used experiential education expertly; 6 teachers did not study subjects aimed at the implementation of experiential education into the educational process from the position of the class teacher; however, they applied the method during class meetings based on what they learned on their own, i.e. they did not use experiential education expertly.

Research sample labelling:

EG – experimental group – classes led by teachers who studied subjects aimed at the implementation of experiential education in the educational process from the position of the class teacher, i.e. they used experiential education expertly

EG – control group – classes led by teachers who did not study subjects aimed at the implementation of experiential education into the educational process from the position of the class teacher; however, they applied the method during class meetings based on what they learned on their own, i.e. they did not use experiential education expertly.

EEE – Class with a class teacher who used experiential education expertly.

NEE – Class with a class teacher who did not use experiential education expertly.

Table 1: Structure of research samples

Group	Class	# of pupils			Total
		boys	girls	total	
EG	1EEE	13	16	29	160
	2EEE	10	14	24	
	3EEE	12	15	27	
	4EEE	13	13	26	
	5EEE	12	13	25	
	6EEE	12	17	29	
CG	1NEE	11	16	27	154
	2NEE	11	13	24	
	3NEE	10	16	26	
	4NEE	11	14	25	
	5NEE	12	13	25	
	6NEE	13	14	27	
Total		140	174	314	314

Source: own processing

The standardized „Naša trieda“ MCI (My Class Inventory) questionnaire originally created by Fraser and Fischer (1986, in Lašek, Mareš, 1991) was used in the first and third stages of our research. The questionnaire is designed for primary school pupils from the 3rd to 6th years of study. This method was selected because of the simplicity of questions, ways the opinion was to be expressed, and minimization of exhaustion in pupils. The questionnaire was filled in by both the experimental and control groups before (pretest) and after (posttest) the experiment was carried out. The questionnaire allowed us to evaluate the classroom climate from five perspectives. However, for the purpose this study, only one perspective will be discussed – class conflicts. The items in the questionnaire were assigned 3, 2, and 1 points to the answers YES, I DON'T KNOW, and NO respectively. The characteristics of the classroom climate - conflicts were subsequently evaluated based on the following criteria:

Table 2: Scale of classroom climate characteristics for conflicts

Variable	Climate characteristics	# of points
conflicts	Inappropriate	13.1 - 15
	Worse	10.1 - 13
	Good	7.1 - 10
	Excellent	5 - 7

Source: personal processing according to Kőbőlova, Rőtling, Sihelsky, 2006

In the second stage of the research, the teaching experiment was carried out: all teachers led the class meetings according to identical plans. In the experimental groups, class teachers used methods of experiential education (physical activities, visiting nature, didactic games, music, painting, etc.) as they were taught during their pre-graduate training. In the control groups, class teachers used experiential education methods (physical activities, visiting nature, didactic games, music, painting, etc.) as they learned on their own.

RESEARCH RESULTS

Phenomenon analysis, descriptive statistics (mean, mode, standard deviation, kurtosis, skewness, range, maximum, minimum, sum, median) and inductive statistics (Kolmogorov-Smirnov test – a nonparametric test of data distribution normality; Wilcoxon signed-rank test – to verify the research hypothesis).

Items no. 2, 7, 12, 17, 22 were aimed at identifying class conflicts. Statements were focused on complication in relations between pupils, on the amounts of tension, disputes and battles in the classroom. The fifth year of study is a milestone for primary school pupils, because the system of teaching changes and the frequency of their contact with their class teacher are much lower. Minimisation of conflicts in the classroom is very important in this year, because students are just acquiring habits necessary for the second level of primary school (subjects suddenly taught by different teachers, etc.).

Table 3: Class conflicts

Group	Class	Conflicts				
		pretest		post test		change
		mean	climate	mean	climate	
EG	1EEE	11.97	Worse	9.97	Good	-2.00
	2EEE	11.13	Worse	9.21	Good	-1.92
	3EEE	10.00	Good	7.04	Excellent	-2.96
	4EEE	9.92	Good	8.15	Good	-1.77
	5EEE	12.28	Worse	10.36	Worse	-1.92
	6EEE	9.93	Good	6.97	Excellent	-2.96
	Total	10.86	Worse	8.58	Good	-2.28
CG	1NEE	11.11	Worse	10.00	Good	-1.11
	2NEE	12.96	Worse	11.96	Worse	-1.00
	3NEE	8.81	Good	8.04	Good	-0.77
	4NEE	11.12	Worse	10.96	Worse	-0.16
	5NEE	9.96	Good	9.52	Good	-0.44
	6NEE	12.00	Worse	11.78	Worse	-0.22
	Total	10.98	Worse	10.21	Worse	-0.62

Source: own processing

The initial measurement showed that the overall climate in the research groups was worse in the area of conflicts. Seven groups the conflicts component of the climate was weaker. The numerical representations of other groups did not differ significantly. However, the final measurement showed differences in the climate among different groups. The most significant change was observed in EEE – the climate changed by -2.28. Another significant change was observed in 3EEE and 6EEE in which the good climate improved for excellent. The overall climate – conflicts in the EG and CG changed by -2.28 and -0.62 respectively.

Using the methods of descriptive statistics, basic characteristics of the statistical sets were identified.

Table 4: Descriptive statistics Pretest_EG

<i>N</i>	<i>Valid</i>	160
	<i>Missing</i>	0
<i>Mean</i>		10.86
<i>Mode</i>		13.00
<i>Std Dev</i>		2.66
<i>Kurtosis</i>		-.56
<i>Skewness</i>		-.41
<i>Range</i>		10.00
<i>Minimum</i>		5.00
<i>Maximum</i>		15.00
<i>Sum</i>		1737.00
<i>Percentiles</i>	<i>50 (Median)</i>	11.00

Table 5: Descriptive statistics Posttest_EG

<i>N</i>	<i>Valid</i>	160
	<i>Missing</i>	0
<i>Mean</i>		8.58
<i>Mode</i>		5.00
<i>Std Dev</i>		2.99
<i>Kurtosis</i>		-.90
<i>Skewness</i>		-.45
<i>Range</i>		10.00
<i>Minimum</i>		5.00
<i>Maximum</i>		15.00
<i>Sum</i>		1373.00
<i>Percentiles</i>	<i>50 (Median)</i>	8.00

Table 6: Descriptive statistics Pretest_CG

<i>N</i>	<i>Valid</i>	154
	<i>Missing</i>	6
<i>Mean</i>		10.98
<i>Mode</i>		11.00
<i>Std Dev</i>		2.64
<i>Kurtosis</i>		-.25

Table 7: Descriptive statistics Posttest_CG

<i>Skewness</i>		-.44
<i>Range</i>		10.00
<i>Minimum</i>		5.00
<i>Maximum</i>		15.00
<i>Sum</i>		1691.00
<i>Percentiles</i>	<i>50 (Median)</i>	11.00

<i>N</i>	<i>Valid</i>	154
	<i>Missing</i>	6
<i>Mean</i>		10.21
<i>Mode</i>		11.00
<i>Std Dev</i>		2.67
<i>Kurtosis</i>		-.58
<i>Skewness</i>		-.09
<i>Range</i>		10.00
<i>Minimum</i>		5.00
<i>Maximum</i>		15.00
<i>Sum</i>		1572.00
<i>Percentiles</i>	<i>50 (Median)</i>	11.00

Results were statistically verified. Using the Kolmogorov–Smirnov test it was found out that the data distribution was not normal in either of the groups.

Table 8: One-Sample Kolmogorov-Smirnov Test

	Pretest_ES	Pretest_KS	Posttest_ES	Posttest_KS
<i>N</i>	160	154	160	154
<i>Normal Mean Parameters</i>	10.86	10.98	8.58	10.21
<i>Std. Deviation</i>	2.66	2.64	2.99	2.67
<i>Most Extreme Differences</i>				
<i>Absolute</i>	.15	.17	.19	.14
<i>Positive</i>	.10	.11	.19	.11
<i>Negative</i>	-.15	-.17	-.12	-.14
<i>Kolmogoro v-Smirnov Z</i>	1.85	2.13	2.39	1.69
<i>Asymp. Sig. (2-tailed)</i>	.001	.000	.000	.004

Due to the results of the Kolmogorov–Smirnov test ($p < 0.05$), hypotheses were verified using the non-parametric Wilcoxon signed-rank test.

Before the teaching experiment statistical equality of the research samples in the area of conflicts (both experimental and control groups) was detected.

H0: At the beginning of the experiment there was no difference between the experimental and control groups in the area of conflicts.

H1: At the beginning of the experiment there was a difference between the experimental and control groups in the area of conflicts.

Table 9: Wilcoxon pretest_ES with pretest_KS (Paired)

Ranks

	N	Mean Rank	Sum of Ranks
<i>Pretest_ES – Pretest_KS</i>			
<i>Negative Ranks</i>	67	66.96	4486.50
<i>Positive Ranks</i>	67	68.04	4558.50
<i>Ties</i>	20		
<i>Total</i>	154		

TestStatistics

	<i>Pretest_ES – Pretest_KS</i>
<i>Z</i>	-.08
<i>Asymp. Sig. (2-tailed)</i>	.936

Conclusion

$p > 0.05$ The null hypothesis was accepted: There was no statistically significant difference between the experimental and control groups at the input in the area of conflicts.

During the teaching experiment statistical differences in the classroom climate – conflicts were detected and hypotheses verified.

H0: (Expert) use of experiential education in the position of a class teacher does not influence conflicts in class pupils.

H1: (Expert) use of experiential education in the position of a class teacher does influence conflicts in class pupils.

Table 10: Wilcoxon pretest_ES with posttest_ES (Paired)

Ranks

	N	Mean Rank	Sum of Ranks
<i>Pretest_ES – Posttest_ES</i>			
<i>Negative Ranks</i>	2	13.00	26
<i>Positive Ranks</i>	97	50.76	4924.00
<i>Ties</i>	61		
<i>Total</i>	160		

TestStatistics

	<i>Pretest_ES – Posttest_ES</i>
Z	-8.67
<i>Asymp. Sig. (2-tailed)</i>	.000

Conclusion

$p < 0.05$ Alternative hypothesis was accepted. (Expert) use of experiential education in the position of a class teacher does influence conflicts in class pupils.

H0: (Non-expert) use of experiential education in the position of a class teacher does not influence conflicts in class pupils.

H1: (Non-expert) use of experiential education in the position of a class teacher does influence conflicts in class pupils.

Table 11: Wilcoxon pretest_KS with posttest_KS (Paired)

Ranks

	N	Mean Rank	Sum of Ranks
<i>Pretest_KS – Posttest_KS</i>			
<i>Negative Ranks</i>	24	33.31	799.50
<i>Positive Ranks</i>	40	32.01	1280.50
<i>Ties</i>	90		
<i>Total</i>	154		

TestStatistics

	<i>Pretest_KS – Posttest_KS</i>
	-1.64
	.100

Conclusion

$p > 0.05$ The null hypothesis was accepted: (Non-expert) use of experiential education in the position of a class teacher does not influence conflicts in class pupils.

Statistical verification of hypotheses at the significance level of 0.05 confirmed differences in the impact of expert and non-expert use of experiential education on the classroom climate – conflicts.

CONCLUSIONS

Graduates of teachers preparing courses have professional competencies which they have acquired during their studies. Their professional competencies should be focused on three basic dimensions: a pupil, an educational process and professional development. All three dimensions can utilize experiential education by means of which the personality of a pupil as well as the personality of a future teacher can be developed. The importance of implementing the means of experiential education in a pre-graduate training and subsequently in pedagogical practice of teachers were confirmed by realizing our research. Their active using has contributed to the positive change of the classroom climate, which is a key factor not only in educational but also upbringing process at schools. We believe that experiential education should be a part of many pedagogical and didactic disciplines, ideally also as a separate studying subject in teacher studying programmes. During pedagogical practice at schools the teachers of academic subjects become class teachers, so subsequently also active creators of positive classroom climate. It means that experiential education has an irreplaceable place in teachers' training and development of their competency profile, the effect of which is reflected in classroom climate.

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Information Literacy Level of Coastal and Small Island Community in Indonesia on Accepting the Education of Technology with Animation Base

Ira Maryati

*Center for Scientific Documentation and Information,
Indonesian Institute of Sciences
Indonesia
iramaryati@gmail.com*

ABSTRACT

Technology introduction in rural can increase economic value of natural resources. Education of technology is required by the community so they can use technology for managing the natural resources. Center for Scientific Documentation and Information, Indonesian Institute of Sciences (PDII-LIPI) has developed technology education for the community in coastal and small island in Indonesia in animated video creation with the contents are the appropriate technology of building solar drying cabinet (SDC) and sealer, and constructing ground reservoir. This is the succesful project of technology educating which has been done by PDII-LIPI in the village of Tanjung Batang, sub-district of Pulau Tiga, District of Natuna, Indonesia. Indonesia consists of many small islands and coastal areas. This project can imitate in other areas in coastal and small island in Indonesia that have the same characteristic. The similarity of information receiving level in this areas can be seen from the level of information literacy. Information literacy level can be used as standar for apply this model in other area. The purpose of this research is to determine the information literacy level of the community in District of Natuna, Indonesia. The result shown that in generally, the community in this area have a skill to recognize the information need but do not have the ability to locate and access the information, and they do not understand the content of the information. However if the information presenting in a form they understand easily they will use the information about processing marine resources and fresh water management for their activity. This facts leading to a recomendation that education of technology presenting in animation based can be used in other rural area esepcaially in coastal and small island in Indonesia that has a basic level of information literacy in term of education level and skills.

Keyword: information literacy level, coastal and small island community, education of technology, animation

INTRODUCTION

Technology introduction in rural can increase economic value of natural resources. The previous study show that adopting and further adapting the technologies by farmer in rural can achieve cost savings, as well as substantial improvements in quality and productivity that strengthen significantly their strategic position (Bennett, Theodorakopoulos, & Sa, 2012). In Indonesia, technology introduction for processing and managing natural resources in rural area especially in coastal areas and small islands has not been done.

Diffusion of technologies need the research and advisory intermediaries with the function for brokering as building a coalition community of practice, facilitating and configuring via workshops and training/technical assistance visits (Theodorakopoulos, Nicholas; Bennett, David; Sanchez, 2014). The limited number of advisory intermediaries and vast territories consisting of small islands scattered make such activities difficult to do in Indonesia. The number of researchers in Indonesia is less than 10000 (LIPI, 2017)(LIPI, 2017)(LIPI, 2017)(LIPI, 2017)(LIPI, 2017) while its population reaches more than 260 million. Many technology introduction programs have been unsuccessful due to lack of mentoring from advisory intermediaries. Therefore the rural communities especially in coastal and small island in Indonesia requires a technology education media that is easy to understood and capable for transferring technology without accompaniment.

Technology education is related with information dissemination. The product resulted from information dissemination can be used as a tool for technology education. The successful of disseminating information to people in rural need three factors, which is categorized in information, provider and communication channel and media (Yoganingrum, 2016). Animation is a media that has been widely used for effective information dissemination and education. Iwasa (2017) used the animation for visualizing the complex scientific research to be

easy presentation for education. Bello-bravo & Pittendrigh (2013) use animation as an educational material for low literate learner. Therefore animation technology is very good to be adopted to present the results of research. Center for Scientific Documentation and Information, Indonesian Institute of Sciences (PDII-LIPI) developed the animation for disseminating the research information especially appropriate technologies.

One of the project developed in technology education for the community in coastal and small island in Indonesia is animated video creation with the contents are the appropriate technology of building solar drying cabinet (SDC) and sealer, and constructing ground reservoir (Yoganingrum, Soeprihantoro, Martosudirdjo, & Maryati, 2016). This is the succesful project of technology educating which has been done by PDII-LIPI in small island in Indonesia. This project conducted in the village of Tanjung Batang, sub-district of Pulau Tiga, District of Natuna, Indonesia. The communities were taught how to use technology to empower their natural resources to become more valuable. The education used the animated video as a media for accompaniment. This community achieve the goal to imitate the technology without advisory intermediaries.

This successfull project can imitate in other areas in coastal and small island in Indonesia that have the same characteristic. The similarity of information receiving level can be seen from the level of Information Literacy level. The acceptance of information services and education is closely related to the level of information literacy. Egunjobi (2014) use the information literacy as a predictor of community information services utilization in south western Nigerian public libraries. Therefore, it is necessary to explore the level of information literacy as one of factors that cause the community successfully imitate the technology presented with multimedia without advisory intermediaries. Information literacy is the capacity of people to recognize their information needs, locate and evaluate the quality of information, store and retrieve the information, make effective and ethical use of information, and apply information to create and communicate knowledge. The result of this study is used as a guide to predict whether the information services applied in this area can also be applied in other similar areas. The level of information literacy can be used as a standard for apply this model in other area. Therefore it is necessary to see the level of information literacy in District of Natuna as a coastal area and small island.

The purpose of this research is to determine the information literacy level of the community in District of Natuna, Indonesia . This paper report the information literacy level of coastal and small island community in Indonesia in accepted the technology education about processing of marine resources and fresh water management with animation base.

THE STUDY

Information literacy level used the UNESCO standar (Catts & Lau, 2008) (Isfandyari-moghaddam & Kashi-nahanji, 2011). Survey method is used to colect the self assessment data. The respondent is the community of 100 people in the village of Tanjung Batang, sub-district of Pulau Tiga, District of Natuna, Indonesia. The data was collected in April 2015. In 2015, the real condition of the level of information literacy of community is measured before it is influenced by animation-based information services. Descriptive statistics are used to process and conclude the data.

Measuring information literacy level used two indicators (education and skills) as a measurement parameters. Level of education starting from level 0 (kindergarden) up to the level 6 (research). The Skill level is measured by self assessment. The set of question is used to assess the skill level. The questions related to the ability of information literacy to manage marine resources and fresh water management. Both issues will be educated for through appropriate technology that can improve people's competitiveness. Statement using Likert scale 1-5 with the scale 1 is weak agreement statement and scale 5 is strong agreement statement. Set of question as on the Table 1.

Table 1. The skills level and test question measurement

Skill	Test Question
1. Definition and articulation of information need	Q1. Do you need information about processing of marine resources (fish, shells, etc) and fresh water management? Q2. Whether information available on processing of marine resource and fresh water management meets your need?
2. Location and access of information	Q3. Do you know where to find information about processing of marine resources and fresh water management?
3. Assessment of information	Q4. Do you understand the language on the available information? Q5 Whether the available information about processing of marine resources and fresh water management is clear and easy to understand.
4. Organization of information	Q6. Do you searching and managing the information about processing of marine resources and fresh water management?
5. Use of information	Q7. Do you use the information that you got for processing marine resources and managing fresh water?

The education level is as follows:

Level 0 = Kinder garden

Level 1 = Elementary

Level 2 = Junior High

Level 3 = High School

Level 4 = Post Secondary

Level 5 = Undergraduate

Level 6 = Research

Table 2. Measurement indicators of information literacy level publish by UNESCO (Catts & Lau, 2008)

Level of Information Literacy	Education Level	Skill
Basic	Level 0 - 2	Skill 1-2
Medium	Level 2 - 3	Skill 2-3
High	Level 3 - 4	Skill 3-4
Advance	Level 4 - 6	Skill 4-6

FINDINGS

This study resulting the description of the information literacy level in District of Natuna as a coastal and small island area in Indonesia in receiving the education of technology about processing marine resource and fresh water management. Factors affecting the level of information literacy in this area discussed in detail as follows.

Demographic Information of Respondent

Demographic information shows that most of respondents are in the poverty level from economical income. The community in rural in generally used the natural resources as their livelihood and source of income (Schwarza & Zeller, 2005). Therefore improving their ability to process and manage natural resources become important. Use of simple applicable technology can influence the value of their product and achieve the goal to improve their income.

The low level of income in community also affect on their facility for access the information that also affect on the

level of information literacy (Bai, 2014). The community can afford to buy a means of communication (ex: smartphone), but they have no cost for subscribe to the internet. Facility of information services as a library also not available. Information services are needed to overcome the limited facilities.

Educational status also become the main problem in the information literacy skill. Tabel 3 shows that even 15% of the community have no education. This will affect the ability to receive educational technology offered. Animation base can be used to meet the information need of community that have oral tradition in communication such as in rural. This study limited to the data about ability of reading in this community.

On the other hand, there are also 17% of people with education at high levels. This will affect to technology education for the community. Advisory intermediaries that is required for technology transfer process based on theory of Theodorakopoulos, Nicholas; Bennett, David; Sanchez (2014) can be done in stages. The people with higher levels of education can act as intermediaries. Information services through an animation base can be translated by a small proportion of people with high level education to most other communities with low levels of education. This can overcome the problem of limited number of researchers and advisory mediaries in educating technology to rural communities, especially those on coastal and small island. Demographic information of respondent can be seen in Table 3.

Table 3. Demographic information of respondent

Heading	No. of Respondents	Percent
Sex		
Male	63	63%
Female	37	37%
Monthly income in 1000 Rupiah (USD)		
Less than 1.000 (less than 75 USD)	40	40%
1.000-5.000 (75 – 373 USD)	55	55%
5.000-10.000 (373 – 746 USD)	3	3%
Above 10.000 (above 746 USD)	0	-
Educational status		
No education	15	15%
Primary	40	40%
Higher secondary (Junior high and High school)	28	28%
Bachelor's degree	17	17%

Information Literacy Level Based on Education Indicator

The result shown that most community (67%) are at basic level of information literacy based on education indicators. Other small part of community are at the medium level (16%) and at the higher level (17%). According to Tan & Gorman (2012) the same level of education can result different level of skill depending on the area of the origin. Urban student in generally have a higher information literacy than the rural student. However, a small amount at a high level of information literacy in this area still adequate for a community to receive technological education. It can be concluded that to apply educational technology with animation based in rural area especially in coastal and small island areas it is required at least 17% of the community with the high level of information literacy based on education indicator.

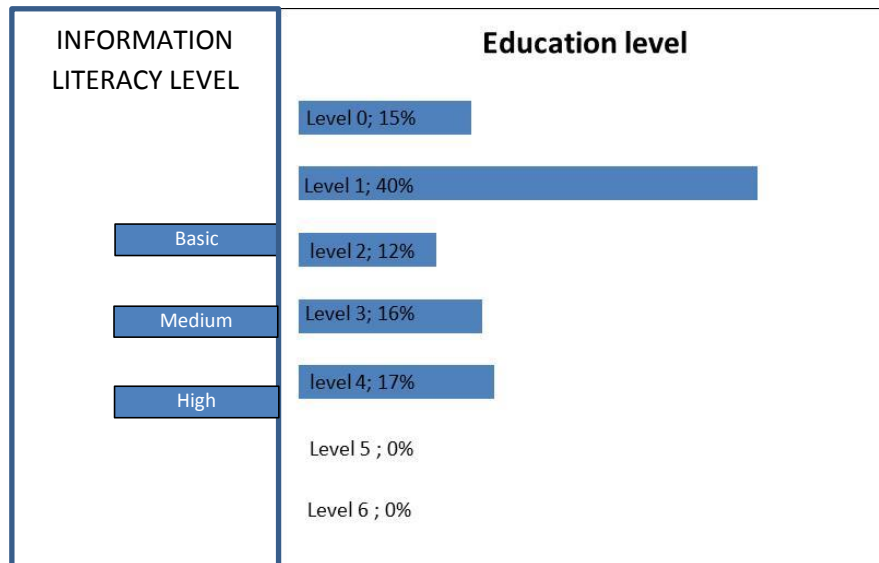


Figure 1. Measurement of information literacy level based on education level

Information Literacy Level Based on Skills Indicators

The study shows that the skill that is most recognized by the community in Natuna Island is the skill at the basic level of information literacy. A total of 81 people out of 100 people states that they have the ability to definition and articulation of their information needs (statement at Likert scale >3 with the average 4,03). This skill is needed to determine what information that the community needs to improve its competitiveness by utilizing marine resources and managing fresh water. It is important to have and be the basis in utilizing the information service that will be given. Education technology provided will not succeed if the public does not know the information needs. Skill 2 (location and access of information) and skill 3 (assessment of information) present the medium level of information literacy. Only 26 people out of 100 people of the community state that they have the ability to determine the location for accessing the information they need. Only 34 people out of 100 people state that they have the ability to assess the information. The ability judge from the statement at the scale >3 . It can be conclude that most of community recognize that the available information about processing of marine resources and fresh water management is not clear and difficult to understand. This shows that the information service that has been done has not reached the public. Education technology in the form of animation will overcome the limitations on skill 3 that is understand the information content submitted. This is in line with the previous study that information repackaging process can overcome the lack of information literacy in the rural community (Maryati, Ira; Yoganingrum, 2015).

Skill 4 (organization of information) and skill 5 (use of information) can be the trigger of their success in obtaining technological education. A number of 50 out of 100 people recognize that they doing searching the information and 43 people out of 100 use the information about processing of marine resources and fresh water management for their activity. Both skills (4-5) present the high level of information literacy. This is somewhat contrary to some statements that the higher the education will be the higher the skills of information literacy owned (Bucciarelli, Odoardi, & Muratore, 2010) (Bai, 2014). In this case it can be seen that people who have high education level only as much as 17%, however the numbe of people which skill 4 and 5 reached 50%.

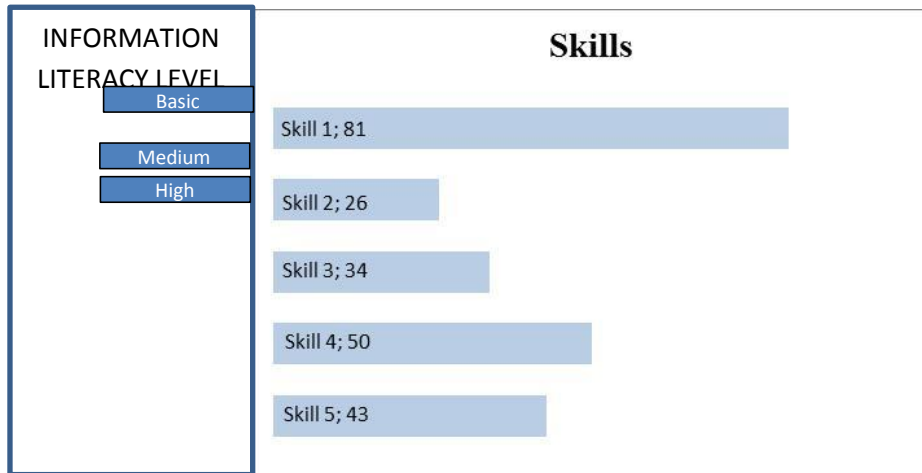


Figure 2. The number of people with the strong statement (>3) to each skill of they have

Overall it can be concluded that the community know their information needed but they have no access to the location and they do not understand the content of the information but if the information presenting in a form they understand easily they will use the information about processing marine resources and fresh water management for their activity. It shows their sincerity in trying to improve their lives by utilizing the natural resources they have. The study conducted by Parvathamma & Pattar (2014) state that the community in rural in generally know the information needs but can not access to the information because of the lack of facilities such as internet and other communication media. Unfortunately, many rural area have the lack of ICT which are cause by electricity (Chaklader, Alam, Islam, & Sabbir, 2013) including in small island in District of Natuna. Low cost network infrastructure base on solar powered can be offered as a solution to overcome the lack of ICT. The average skills of the community on Natuna Island can be seen on the Figure 3 and Table 4.

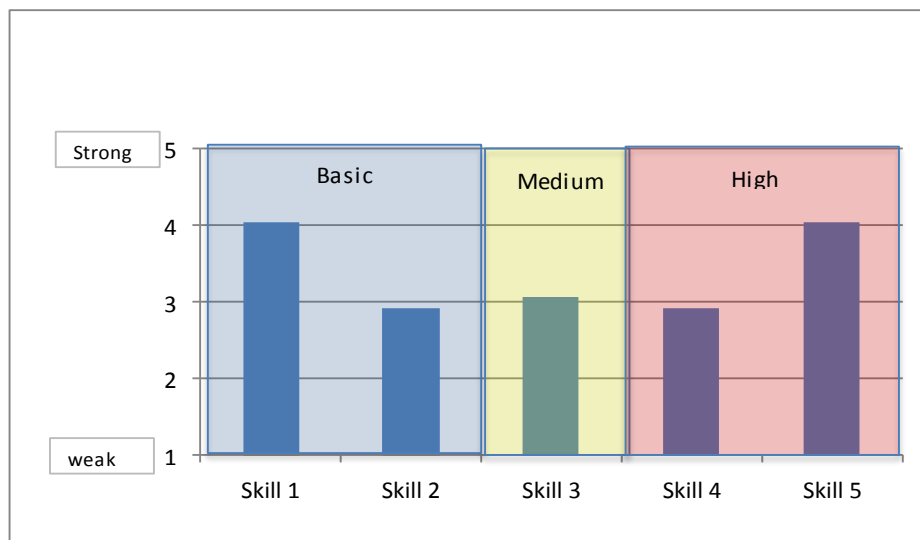


Figure 3. The number of people with the strong statement (>3) to each skill of they have

Table 4. The average of self assessment statement value of the community in Natuna Island

No	Skill	\bar{x}	SD
1	Definition and articulation of information need		
	Do you need information about processing of marine resources (fish, shells, etc) and fresh water management?	4,04	1,97
	Whether information available on processing of marine resource and fresh water management meets your need?	3,83	1,73
2	Location and access of information		
	Do you know where to find information about processing of marine resources and fresh water management?	2,93	0,82
3	Assessment of information		
	Do you understand the language on the available information?	3,06	0,93
	Whether the available information about processing of marine resources and fresh water management is clear and easy to understand.	3,05	0,96
4	Organization of information		
	Do you searching and managing the information about processing of marine resources and fresh water management?	3,17	0,97
5	Use of information		
	Do you use the information that you got for processing marine resources and managing fresh water	4,00	1,01

CONCLUSIONS

Most of the community in District of Natuna, Indonesia have a level of education in the basic level of information literacy (67%). Other small part of community are at the medium level (16%) and at the higher level (17%). Educational technology with animation based in rural area especially in coastal and small island areas require at least 17% of the community with the high level of information literacy based on education indicator. This amount of people is required for replacement the advisory intermediaries. In generally, the community in this area have a skill to recognize the information need but do not have the ability to locate and access the information, and they do not understand the content of the information. However if the information presenting in a form they understand easily they will use the information about processing marine resources and fresh water management for their activity. This facts leading to a recommendation that education of technology presenting in animation based can be used in other rural area especially in coastal and small island in Indonesia that has a basic level of information literacy in term of education level and skills.

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Initiative Taking Levels of School Principals*

Naciye Denizer

*Milli Eğitim Bakanlığı, Lefkoşa, Kıbrıs
fkiralp@eul.edu.tr*

F. Sülen Şahin Kırarp

*European University of Lefke, Faculty of Education,
Department of PDR, Lefke, Kıbrıs
sulensahin@gmail.com*

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ABSTRACT

The word initiative is widely used in everyday language (as "take initiative"). Especially in critical and complex events and in crisis situations it is usually the decision and the action of implementation of the person who is in charge. While this word is used, it has many meanings such as taking responsibility, taking risks, strength, self-confidence as well as having an active performance in practice.

The main purpose of this study is to examine the level of personal initiative use of school principals working in state secondary schools in the Northern Cyprus according to the principal, assistant principals, and teachers. This study was designed in accordance with the descriptive method. Since sampling was easy to achieve, no samples were taken and the entire universe was reached (43 principal and 108 assistant principal). Because of the number of teachers, 499 randomly selected teachers represented the relevant universe. Personal Initiative Measurement Tool for School Principals (Akin, 2012) was used to determine personal initiative use scores in the research. There are three sub-dimensions of the scale: self-starting, proactivity, persistency. In the analysis of the data, the t-test was used for the binary variables and F test was used for more than two variables to determine the difference between the groups. To find the source of the difference between the variables, the Scheffe significance test was applied.

When the averages of the responses to the statements of the self-initiated dimension examined, it was seen that both principals and teachers fully participated and the deputy principals were largely extent the idea of the managers have taken the initiative in this sub-dimension. In terms of pro-activeness, principals, deputy principals, and teachers were found to fully agree that managers were taking initiative in proactivity. On the aspect of persistence, it has been seen that the principals of schools have fully participated in the statements which the managers have taken initiative in insistence, but the deputy principals and teachers have greatly participated in these statements. According to the second sub-problem of the research, there was a statistically significant difference in the self-initiation, proactiveness and persistency subscales. The views of school principals, assistant principals, and teachers regarding the use of initiatives by school principals differed significantly according to their seniority and according to their level of education. Appropriate recommendations are given in the light of this data.

INTRODUCTION

The term of personal initiative is often used in administrative implementations. It can be said that the concept of personal initiative contains many leadership notions in itself. For this reason, this concept is examined in terms of management science. Schools are educational organizations administered by school principals. School principals have a great responsibility to guide the creation of a school culture that incorporates a vision, mission, and core values to make the school organization productive, successful, and effective. Therefore, it is considered to be an important issue in the field of educational sciences as well. In this study, the term of the personal initiative was taken in terms of school principals who are the leaders of school organizations.

In educational organizations, school principals are responsible for school management. For this reason, school principals' role in managing and directing their school's educational activities is of vital importance. Today, it is becoming increasingly important for school principals to take personal initiative. Likewise, as mentioned by Şimşek (1999) having personal initiative is defined as a leading leadership feature. The fact that the principal is

able to take personal initiative for the vision and mission of the school in an effective manner is expected to positively affect many aspects of the school, including organizational health.

The word initiative is widely used in everyday language (as "take initiative"). Especially in critical and complex events and in crisis situations it is usually the decision and the action of implementation of the person who is in charge. While this word is used, it has many meanings such as taking responsibility, taking risks, strength, self-confidence as well as having an active performance in practice (Denizer, 2016). There are 3 sub-dimensions of personal initiative: self-initiated behavior, proactive behavior and persistence. These sub-dimensions can be explained briefly as follows.

Behaviors that the employee performs beyond the behavior required by his or her own role are defined as self-initiated (starting) behaviors. A self-initiated employee will be personally committed, highly self-confident, successful and motivated (Frese, 2001).

Proactive behavior can be described as taking the initiative to develop existing situations or to create new ones. In a sense, it is a kind of rebellion rather than adaptation to the passive situation. Proactive behavior, in a sense, also includes innovation and change. By creative solutions it means taking the initiative to develop current situations or to create new solutions. In other words, it is an open attitude to innovation rather than adaptation in a passive way (Denizer, 2016).

Persistence is a leadership feature that allows you to reach a conclusion by acting in a determined and patient manner when performing an objective or task (Denizer, 2016). An initiated and ongoing work may be interrupted by economic or other reasons. Resisting insistently rather than giving up in such adverse situations is seen as an important leadership feature (Morgan & Hull, 1926 as cited in Akin, 2012).

School principals must use all available resources to achieve the goals of the school. For this cause, he/she should cooperate and communicate with teachers, students and employees. Concurrently, school principals must have active, responsible, committed to the school, strong, innovative and persistent personality traits that can follow events and problems (Karshi, 2016). Besides, there are studies that show that self-efficacy is positively related to personal initiative (Speier & Frese, 1997) as well as research that self-efficacy is positively related to personal initiative (Akin, 2014). Both are necessary for effective school management. For this reason, it is necessary to investigate the concept of personal initiative.

This subject has never been investigated in North Cyprus before and this reveals the importance of research. With this information in mind, the main purpose of this study is to examine the level of personal initiative use of school principals working in state secondary schools in the Northern Cyprus according to the principal, deputy principals, and teachers. In order to analyze this main objective, the following sub-problems were examined.

- 1) Is there a meaningful difference between the views of school principals, deputy principals, and teachers on the level of personal initiative which is taken by school principals?
- 2) Do the seniority, the level of education, and the time work with the principal, differentiate the views of teachers and deputy principals on the level of personal initiative of the principal?

THE STUDY

This study was designed in accordance with the descriptive method. Descriptive research is aimed at casting light on current issues or problems through a process of data collection that enables them to describe the situation more completely (Fox & Bayat, 2007). Due to it is easy to reach the principal and deputy principal population, no sample has been taken and the entire population has been reached (43 principal and 108 deputy principal). The abundance of the teachers at secondary education institutions made sampling an obligation. For this reason, 499 teachers selected with stratified method and random sampling represented the relevant universe. The distribution of sampled participants depending on independent variables is as follows: based on professional seniority, 79.1% of school principals, and 56.5% of deputy principals are working at their school for 21 years or more. In addition, it is seen that 28.9% of teachers are in the profession for 16 to 20 years. According to the education level variable, 67.4% of principals, 79.6% of deputy principals and 77.6% of teachers have undergraduate degrees. After obtaining the necessary permits from the Ministry of National Education, the researchers personally collected the data.

In the study, the information form which was developed by the researcher was used to obtain the necessary data about the characteristics of the school principal, deputy principal and teachers and the schools they work in. In the second place 'Principals' Personal Initiative Measurement Tool' (Akin, 2012) was used to determine personal

initiative scores in the research. The scale consists of a total of 32 questions. There are three sub-dimensions of the scale: self-initiate, proactivity, persistency. Persistence sub-dimension aims to measure persistent personality structure while Proactive sub-dimension aims to measure proactive personality structure and self initiation sub-dimension aims to measure self-willing behavior in actions. Cronbach Alpha internal consistency coefficient for the self-initiation subscale was 0.88, for the proactivity dimension was 0.83 and for the persistence dimension was 0.89. The reliability of the scale was calculated as 0.86. As a result of the analyses made for this research, it was calculated that Cronbach Alpha internal consistency coefficient for the self-initiation subscale was 0.97, for the proactivity dimension was 0.86 and for the insistence dimension was 0,77. The Cronbach Alpha coefficient for the scale validity of the Principals' Personal Initiative Measurement Tool was calculated as 0.95. Accordingly, it is concluded that the scale is valid and reliable for use in the sample of the Northern Cyprus.

In the analysis of the data, the t-test was used for the binary variables and F test was used for more than two variables to determine the difference between the groups. To find the source of the difference between the variables, the Scheffe significance test was applied.

FINDINGS

In order to display the opinions of school principals, deputy principals and teachers as regards the personal initiative usage status of school principals (as per self-initiation, pro-activity and persistence dimensions), the mean values of answers given according to scale items was used. Accordingly, when the mean values of the answers given by participants to the expressions in self-initiation dimension are examined, it can be seen that both principals and teachers agreed that principals take initiative in terms of self-initiation ($\bar{x}_p=4,76$; $\bar{x}_t=4,26$), and that deputy principles agreed considerably ($\bar{x}_{dp}=4,19$). It is observed that in the self-initiation sub-dimension, the opinions of deputy principals and teachers overlapped with those of school principals considerably. Accordingly, it can be said that principals and teachers think that school principals take self-initiative without waiting for the orders and directives in order to perform their school-related duties. In addition, the fact that teachers completely agree that school principals perform self-initiation and launch their duties on their own indicates sufficient cooperation between principals and teachers. There are research findings in the literature which support these data (Akin, 2012). The fact that the belief that school principals take initiative is that parallel and high shows that, as indicated by Bursalıoğlu (2015), school principals have behaviours that comply with their leadership role and that the responsibility at schools rests with the principals.

When the mean values of the answers given by participants to the expressions in pro-active behaviour dimension are examined, it can be seen that principals, deputy principals and teachers agree that principals take initiative in terms of pro-activity ($\bar{x}_p=4,87$; $\bar{x}_{dp}=4,27$; $\bar{x}_t=4,36$). As a result, it can be said that school principals perform their duties with an innovative and entrepreneur attitude. In addition, it can be commented that school principals are seen by teachers as leaders with high organizational commitment who can take personal initiative and perform their duties. It is seen that there are studies in the literature which support the results of this research. In Akin's study (2012) it is displayed that the expressions with the highest and lowest agreement by school principals, deputy principals and teachers at pro-activity dimension coincided with each other.

When the mean values of the answers given by participants to the expressions in pro-active behaviour dimension are examined, it can be seen that principals agree that principals take initiative in terms of persistence dimension ($\bar{x}_p=4,72$) but that deputy principals and teachers considerably agreed with the judgment ($\bar{x}_{dp}=4,12$; $\bar{x}_t=4,11$). Accordingly, it can be claimed that principals take initiative, act as pioneers and work with insistence so that they can perform the tasks and expectations related to the school, and bring their school change, development and innovation. The finding that initiative-taking level of school principals at persistence sub-dimension has high mean values can be associated with the fact that persistence is accepted as an essential attitude in the path to success.

In order to find an answer to the first sub-problem of the research, an examination is made to see whether there is significant difference between the opinions of school principals, deputy principals and teachers in terms of self-initiation, pro-activity and persistence dimensions of the school principals.

Table 1 Anova test results for the use of personal initiative according to the views of the principal, deputy principal and teachers.

	Duty	N	\bar{x}	ss	sd	F	P	Sig
Self initiation (si)	Principal	43	4,765	,35230	,5372	12,780	,000	Prin/D. Prin
	Deputy principal	108	4,1903	,76184	,7331			Princ/teach
	Teacher	499	4,2577	,65282	,2922			
Pro-activity (pr)	Principal	43	4,8671	,25592	0,3903	16,165	,000	Prin/D. Prin
	Deputy principal	108	4,2544	,70387	0,6773			Princ/teach
	Teacher	499	4,3548	,61445	0,2751			
Persistence (p)	Principal	43	4,7302	,40446	,06168	8,468	,000	Princ/teach
	Assistant principal	108	4,3204	1,59999	,15396			
	teacher	499	4,1106	,88328	,03954			

As can be seen in table 1, there is significant difference in favour of school principals in the opinions of school principals, deputy principals and teachers in terms of self-initiation, pro-activity and Persistence dimensions of the school principals [$F_{si} = 12,78$, $p < 0,05$; $F_{pr} = 16,16$, $p < 0,05$; $F_p = 8,46$, $p < 0,05$]. Akın (2012) reached similar findings in his study. According to the obtained findings, it can be claimed that school principals find their school-related efforts adequate, are aware of their duties and do not need any external motivators, pay effort to improve the existing situation and work until the end in order to perform their duties. As a result of analyses, it can be thought that the found difference means that the efforts of principals are not noticed by deputy principals and teachers or not shared by principals adequately. This result can be associated with the fact that the tasks that participants are performing have different circumstances. As can be seen from the table, school principals agree more than deputy principals and teachers that they take active part in personal initiative-taking. As stated by Freese and Fay (2011), using personal initiative means self-initiation, being proactive and sedulous. Accordingly, it can be said that school principals are using initiative.

As regards the second sub-problem of the research, one-way ANOVA test was used to analyse whether there is significant difference between initiative-using levels of school principals in secondary education institutions based on the opinions of school principals, deputy principals and teachers according to their seniority and education level and the results are shown in table 2.

Table 2 Anova test results for the use of personal initiative according to the seniority and education level of the principal, deputy principal and teachers.

Seniority	N	\bar{x}	ss	sd	F	P	Sig
1-5 year	88	4,2330	,55918	,05961	2,392	0,049	11-15/>21
6-10 year	83	4,3261	,63852	,07009			
11-15 year	98	4,1199	,62288	,06292			
16-20 year	175	4,3059	,60211	,04552			
21 and up	206	4,3526	,74216	,05171			
Total	650	4,2854	,65488	,02569			
Education Level	N	\bar{x}	ss	Sd	F	P	Sig

Bachelor	502	4,2938	,65435	,02921	5,363	,05	Bach/PhD Master/PhD
Master	140	4,2156	,65299	,05519			
PhD	8	4,9767	,03235	,01144			
Total	650	4,2854	,65488	,02569			

As can be seen in table 2, there is significant difference between the opinions of school principals, deputy principals and teachers on initiative-taking by principals according to their seniority [$F = 2,39$, $p = 0.04 < 0.05$]. Post-Hoc Tukey test results were examined in order to understand the seniority level which generated this difference. Participants with 21 and more years of professional career ($\bar{X} = 4,35$) tend to think that school principals are taking initiative compared to participants with 11 to 15 years of career ($\bar{X} = 4.23$) which, in turn, indicates that the experience of teachers in their profession has a positive role on their viewpoint and understanding. Although there are no studies which display the relation between direct initiative and career, there are studies which show that seniority is an essential variable in organizations (Tor, 2011; Katipoğlu, 2014); on the other hand, some other studies show that it does not make any difference (Bilgiç 1998).

According to analysis results, there is significant difference between the opinions of school principals, deputy principals and teachers on initiative-taking by principals according to their level of education [$F = 5,36$, $p = 0,05 = 0,05$]. Post-Hoc Tukey test results were examined in order to understand the seniority level which generated this difference and it was seen that those with PhD degree show higher agreement with the expression that principals take personal initiative. In the light of this information, it can be expressed that level of education has positive impact on personal development and that educators with higher level of education enjoy the opportunity of viewing professional subjects from a wider perspective.

CONCLUSION

According to the perception of school principals, deputy principals and teachers working at secondary public schools in TRNC, school principals totally use personal initiative while performing their duties. In the study, it was found out that school principals totally and deputy principals and teachers considerably agreed with the expression that school managers show self-initiation, persistence and pro-activity in personal initiative-taking. These findings indicate that school principals at secondary schools have initiative-taking characteristics which is an essential leadership skill. In addition, it can be claimed that school principals do not refrain from advancing upon work-related problems, notice opportunities and evaluate them for the benefit of their school, insist on performing hard tasks and pay effort to improve the existing situation, and do all the foregoing with professional ethics without external pressure. Moreover, it is witnessed that as the level of education and seniority of teachers, school principals and deputy principals' increase, they have more positive opinion on the initiative-taking of school principal.

In summary, it can be claimed that the concept of personal initiative, which is evaluated as an effective behavioural role in especially managerial applications today, consists of several powerful leadership concepts (Denizer, 2016). Accordingly, principals of our schools are managers who are open to innovation, aware of their role and responsibilities, and ready to undertake the tasks that their role requires in the eyes of the teachers and deputy principals.

In order to sustain and even upgrade this situation, on-the-job training can be provided to all personnel within the education-management-supervision. It is believed that with such training activities, school principals, deputy principals and teachers will benefit from information and education that coincide with innovations and requirements. In addition, it is believed that the laws and by-laws which lose their functionality within years should be reviewed and especially the authorities and rights of principals should be examined. It is also believed that regular performance evaluation of employees and awarding the personnel so as to increase success at and devotion to their schools should be launched so that healthier school organizations can be obtained, which, in turn, requires managers who can take personal initiative.

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Innovation of Education in Risk and Crisis Management

Katarína BUGANOVÁ

Faculty of Security Engineering, University of Žilina, Slovakia
katarina.buganova@fbi.uniza.sk

Valéria MORICOVÁ

Faculty of Security Engineering, University of Žilina, Slovakia
valeria.moricova@fbi.uniza.sk

ABSTRACT

The importance of risk and crisis management in the current economic situation depends on all the efforts of organizations to increase the overall security of countries, citizens as well as business entities. Developments in the international relations are dominated by uncertainties and negative risks (turbulence in the global economy, the economic crisis in Greece, the conflict in Ukraine and a range of conflicts in the Middle East, the migration crisis, Brexit etc.). Working with risks requires the necessary knowledge that managers can acquire through university studies but also through lifelong learning and practice. The Faculty of Security Engineering at the University of Žilina (FSI UNIZA) is constantly striving to update education within the problematic areas on line with the latest information in the research field, theory and practice, and by training and preparing experts who are able to apply risk and crisis management to different areas other than public sector and within business activities. The aim of the article is to bring out the possibilities of education in the section of risk and crisis management at the FSI UNIZA.

Keywords: risk management, crisis management, innovation, education, university.

INTRODUCTION

Globally higher focus is given to training for handling crisis phenomena such as floods, landslides, earthquakes and many other natural disasters, technology and pollution incidents, fires, leakage of chemicals, cutting off the supplies of strategic materials or energies, terrorism, danger of critical infrastructure efficiency or rather negative consequences of economic crisis, international refugee migration and others.

From the point of view of company those situations present especially problem with interruption of business, loss of markets, customers and as a result growing costs not only for renewal but also for covering the losses. The state is trying to get prepared for solving the possible crisis phenomena in all of the spheres of its field of activity through legal norms, establishing specialised formations in the section of rescue systems, civil defence or in some cases by armed forces.

Within this issue experts are trained by FSI UNIZA which strives to connect theory with practice, take into consideration peculiarities of security environment and security system of Slovakia on one hand and requirements of the present time and strategic partners on the other hand. FSI UNIZA is managerial-technical faculty has been acting in the system of academic education for more than sixty years and develops educational and scientific and research activities in providing complex safety for society and individual citizens. It is focused on educating crisis managers, workers of fire and rescue forces, experts dealing with management of people and property protection processes in all of spheres of society life and managers of transport ensuring of crisis situations.

The faculty has established stable position in a professional security community in Slovakia and in abroad with the emphasis on EU countries. It has developed contacts and broadened cooperation with educational and scientific and research institutions, public administration authorities and business subjects which are acting in this sector. Faculty students go places in home and international competitiveness within competitions of students' scientific activity. They were awarded with many various awards and within the mobilities they are allowed to study at chosen universities in the EU countries. Absolvants of FSI UNIZA occupy the job positions in the system of crisis management in state administration and self-government and also in business sector.

The interest for studying this field of study is proven by developing number of applicants for studies which has radically increased during the last two years (Figure 1). This increase is connected with introduction of faculty's new marketing strategy. FSI UNIZA made the presentation of academic study programs in faculty more attractive in 2016 by innovative instruments of marketing and newly-made information and study materials oriented on target group of secondary schools' students with the potential of studying academic study programs in the security sector. Coefficient of attractiveness of studies (ratio of registered and accepted students) has in FSI UNIZA positive value 0, 94 (Annual Activity Report FSI 2016).

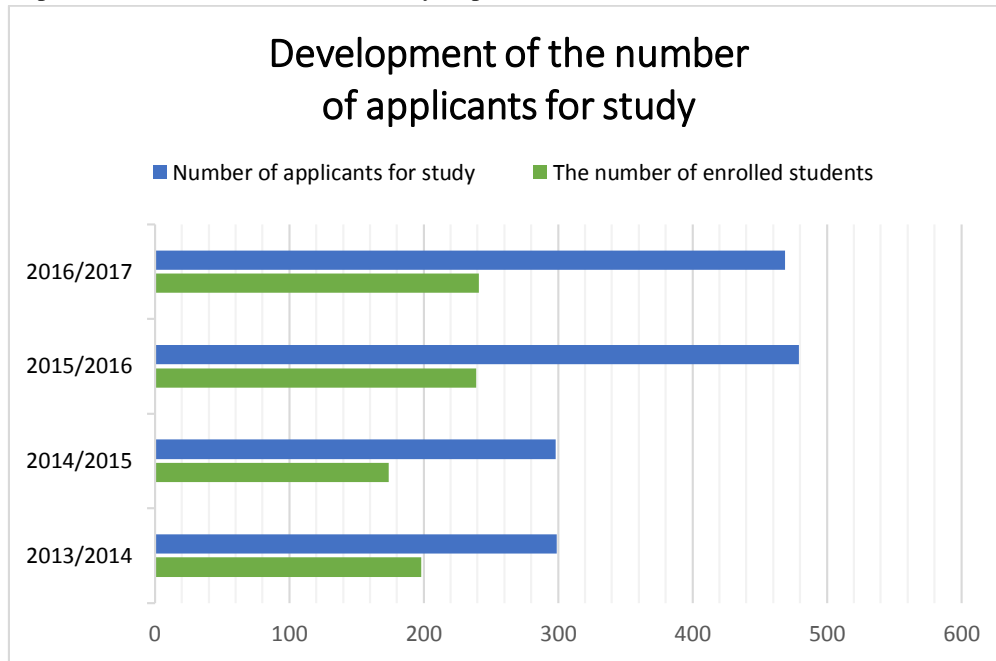


Figure.1: Progress in numbers of applicants for studies in the years 2013 – 2017
(Annual Activity Report FSI 2016)

FSI UNIZA secures academic bachelor, engineer and doctoral studies and many various forms of lifelong learning in accredited study programs in which scientific and research activity is creatively formed and its results are presented in its publishing.

Educational process is provided by these faculty departments:

- department of security management,
- department of crisis management,
- department of fire engineering,
- department of technical sciences and informatics.

Absolvent of study program “safety management” acquires knowledge in the field of theory and practice of people and property protection is able to analyse internal and external safety environment and within managing the risk to identify, analyse and evaluate risks and solve its reduction. On the basis of theoretical knowledge in the field of people and property protection cultivates intellectual abilities, practical skills and personality features which help to prepare and realize technical safety projects in his own.

Absolvent of study program “safety and protection of critical infrastructure” acquires knowledge from the theory of protection of critical infrastructure with the impact on energetics and transport. Absolvent is also able to suggest and to realize precautions, monitor and analyse the development of risk and crisis factors and prepare adequate reaction on arising crisis phenomena.

Absolvent of study program “crisis management” is able to identify risks and dangers in the natural, social, agricultural and technological processes, to analyse them and evaluate them as a complex, suggest procedures and forms of its reduction. Absolvent is able to lead complex response for occurred crisis situation and to make renewal of systems after eliminating crisis factors.

Absolvent of study program “rescue services” acquires knowledge and skills for leading rescue workers teams, assume responsibility for their activity, organize the activity during doing rescue operations by accidents, crashes, natural disasters and other extraordinary incidents. Absolvent is able to consider buildings and technological equipment with the difficult solving fire safety, knows tactical principles by doing rescue work and fire elimination.

INNOVATION OF EDUCATION IN THE FIELD OF RISK AND CRISIS WITHIN THE STUDY PROGRAM CRISIS MANAGEMENT

Long-term work in strenuous conditions restricts human awareness, increases the risk of wrong perception of the information and its misinterpretation. In order to define the necessary skills and competencies for a manager, it is important to know what is expected of them in terms of the elements of internal and external environment such as levels of management, authorities of state administration on any particular level, executive subjects of the organization, co-operating organizations, directly befallen public, general public, media or society. Risk or crisis manager solving a crisis situation, security events or problems, has, above all, these roles (Loveček et al. 2016):

- He decides about resources, tasks, particular measures, he solves arising problems quickly with the objective to eliminate the consequences of the crisis and to restart the function of the organization.
- He ensures the function of crisis information system, enables effective exchange of information inside the organization, between the co-operating elements and between management and public.
- He directs activity of all who take part in solving the crisis; decisively eliminates negative social phenomena, is responsible, consistent and decisive leader and coordinator.

One of the possible ways of how a potential crisis or risk manager can acquire generic or special competence is participation on practical occupations, exercises or workshops, development of own innate physical and mental characteristics, but especially their education, which can have different forms, content and extent (e.g. secondary education, college education or lifelong education, internal or external form of education) (Loveček et al. 2016, Moricová et al. 2016).

Study program Crisis management in the branch of study Civil security provides students of FSI UNIZA the opportunity to acquire needed knowledge for employment in the system of crisis management and management of risk in private or public sector. Study program includes various specialised subjects within which students get needed appropriate knowledge from the economics, management and theory of risks. At the beginning of the studies students need to become aware of the sphere of social life in which they would like to work and by appropriate choice of optional lessons they would develop their knowledge in this sphere such as risk management or crisis management.

The department of crisis management as the other departments of FSI UNIZA, within the preparation for complex accreditation reassessed and actualised the content of teaching specialised subjects within all accredited study programs. The aim of it was to assimilate to much more demanding in the best way given on education in the field of crisis management and risk management. Innovations are not avoided by the way of providing pedagogical process itself.

Effective solution of crisis situations requires from authorised commanding subjects except of basic leadership abilities also others which result from specificity of crisis situation. Each crisis regardless its cause involves eking, behaviour and making decisions of people. Crisis situation involves directly all control processes. Besides other things by menacing health and lives of people, their property and by that causes the feelings of uncertainty and fear, endangers working of individual systems which makes the need of urgent solving, the need of pushing or cancelling less important activities and to concentrate on basic questions.

The need of being informed is rising inside the organization and also from the side of surroundings which can start unexpected behaviour of people, panic, chaos and it requires restriction of cater of the needs of people cooperating on crisis solution and also people who are affected by crisis, it allows crossing to directive leadership and one-way communication, increases requirements for team harmony, cooperation ability and others (Mika 2010).

Specific tasks or leading of special departments need a certain modification of required qualifications. In connection with the need of solving emergency or crisis situations it is possible to delimit certain specific tasks or activities of managers in individual positions e.g. Crisis manager (manager of risk) – as one of roles of each

managers (e.g. managing director or city mayor), or as specially prepared specialist for solving crisis situation in the corporation or as a leader – specialist, chairman of emergency committee, worker of crisis commanding of public administration or individual emergency subjects. He is prepared to analyse possible risks and threatens, coordinate the preparation of crisis plans, in the case of crisis situation appearance to lead effectively going of rescue operations and renewing works, to communicate wisely with people affected by disaster, with public and especially with the media (Hudáková - Lusková 2015, Mika 2013).

Recommended content and subject of study program Crisis management in the first degree of academic studies (Bc.) should contain after the complex accreditation in the study plans specific subjects providing knowledge from the risk and crisis management as in public administration as in business activity (chosen subjects are in the Table 1) (Bugarová, K. 2016).

Table 1 Choice of subjects providing knowledge in the field of risk and crisis management
(1. degree of academic studies)

Academic year	Academic year	Academic year
<i>Economy</i>	<i>Management</i>	<i>Crisis situations agricultural</i>
<i>Business economy</i>	<i>Risks management</i>	<i>Crisis situations environmental</i>
<i>Introduction to crisis management studies</i>	<i>Civil protection</i>	<i>Protection of critical infrastructure</i>
<i>Mathematics</i>	<i>Occupational health and safety</i>	<i>Dangerous substances and tools</i>
<i>Informatics</i>	<i>Radiation, chemical and biological protection</i>	<i>Medicine of disasters</i>
<i>Environmentalism</i>	<i>Basics of fire engineering</i>	<i>Crisis management in the public sphere</i>
	<i>Managers statistics</i>	<i>People and property protection</i>
	<i>Marketing</i>	<i>Small and middle business</i>
	<i>Finance and accountancy</i>	<i>Managers communication</i>
	<i>Personnel management</i>	
	<i>Economic analysis</i>	

Absolvents of bachelor studies in branch of study Civil safety of study program Crisis management have preconditions to work as qualified experts in the state administration or business subjects in the department of crisis management. They know principles and procedures of managerial commanding of crisis management, environment, people and property protection. In the private sector, they will use knowledge from economics, management, accountancy, statistics, personnel management, leading of small and middle business and managerial communication. Preconditions to use principles of leadership risks and agricultural crisis in business sphere provides them management of risks and crisis management (SP CP CM – Bc. 2015).

Within engineer studies students have the possibility of choosing many subjects which provide them to broaden their knowledge from the point of methods and equipment of risk management in the department of quality, finance, projects and so on. To the content of subjects Issue of risk management is needed to be integrated and to point out its possible connection with this issue.

Recommended content and subject structure of study program Crisis management in the second degree of academic studies (Ing.) are various compulsory and optional subjects (Table 2), which are useable in the field of risk and crisis management (Bugarová, K. 2016).

Table 2 Choice of subjects providing knowledge in the field of risk and crisis management
(2. degree of academic studies)

Academic year	Academic year
<i>Crisis management</i>	<i>Business risks</i>
<i>Ethics of crisis situations</i>	<i>Risks of industrial processes</i>
<i>Terrorism protection</i>	<i>Crisis planning</i>
<i>Managerial methods and techniques</i>	<i>Theory, processes and methods of crisis management</i>
<i>Insurance industry</i>	<i>Legal environment of crisis situations</i>

<i>Reliability and security of technical systems</i>	<i>Economics of crisis situations</i>
<i>Management of change</i>	<i>Management of quality</i>
<i>Financial management</i>	<i>Project leadership</i>
<i>Corporation strategy</i>	<i>Prognostication and planning</i>
<i>Managerial information systems</i>	
<i>Reliability and security of technical systems</i>	
<i>World economy</i>	
<i>Psychology</i>	

There is a line of specifically skills and specific studies existing which confirm that the often result of manager's failure is not professional competence but the fact that in workload, crisis situations proven ways of his commanding activity are failing and the manager is not able to handle this situation psychically. That is why this fact shows the need of preparation of managers for risk and crisis situations (Mika 2013).

All departments are now profiled commanding departments with the guarantee of preparing experts for risk and crisis management, rescue forces, people and property protection and protection of critical infrastructure. Coordination and solving of projects of science and research is provided by department of security research (Long-term development FSI 2014 – 2020).

Improving of risk management, crisis and security management in the private and public-sector needs:

- incessantly actualising and creating general theory in the department of safety and tools for consideration safety environment,
- complex consideration of risks, creating steps for their analysing and creating precautions of managerial and technological character in the social, business, technical, technological and natural environment,
- material, technical, financial, informational, and human resources for solving crisis situations and extraordinary events in natural, agricultural and social environment,
- optimizing of emergency planning and their ecological results,
- consideration of critical infrastructure functionality and providing its safety in crisis situations,
- solving of current tasks within integrated emergency system with the impact on effectivity of risking and tools for solving extraordinary events.

Prerequisite for raising the level of fire safety is:

- improving fire safety of buildings,
- improving the effectivity of tactics of emergency activity of fire and emergency service,
- solving of environmental impacts of emergency activity on environment,
- modelling of fire of automobiles and suggesting measures for raising its safety,
- application of fire simulating programs in the place where emergency is being held.

Effective complex people, property, information and environment protection needs:

- creating and developing the theory of safety organization management,
- development of theoretical base for criminalistics and criminology with the focus on preventive projects,
- projecting, evaluating and implementing systems for objects protection,
- evaluating the quality of safety systems and human potential in the field of private safety services,
- developing issue of the system of leading the information safety and its implementation into the practice.

Science and research on faculty are developed inwardly of academic freedom – free investigation, research, development and other creative potential. On the basis of up to now results in scientific and research activity, projects from home or foreign granted schemes, projects from structurally funds, project of University Science Park of University of Žilina, created centres of excellence is the priority way of research at faculty FSI UNIZA in Žilina, within priority ways of research at the University of Žilina it is creating of complex safety society, crisis management and people, property, information and environment protection, improving the level of critical infrastructure safety, safe and ecological traffic road and transport. Gained results of research are connected for improving education process from the point of view of content and forms of teaching.

CONCLUSIONS

Each organisation which works in the current dynamic environment should be focused on rising of security of its activities and processes. The reason for that is not only its primary effort for gaining positive agriculture results but also for its responsibility which is held by management towards all involved parties. Employees, customers, shareholders, regions, state and many other subjects have profit from results of business activity and small and middle corporations. Raising the awareness about possibilities and ways in risk and crisis management support the success rate of realised activities, development of regions and last but not least also the state. Risk and crisis management in the phase of prevention is the prerequisite of raising realised activities of organization from the point of safety of sustainable development.

The need of knowing and leadership the risk or more precisely to pretend crisis and ability to handle crisis situations requires specific knowledge not only in the field of risk and crisis management but also in the sector of risk occurrence e.g.: crisis phenomena. Each manager working with risk should be able to apply risk and crisis management principles in organization and to organise work for chosen team. He should know how to use information from the other managerial systems of organization and to know how to connect them during the prevention and reactions within leading risk or crisis.

Preparation of managers for solving crisis situations has to be understood as a multilateral process focused on forming general knowledge, for making specific commanding knowledge and skills as for forming individual skills which help the acquired knowledge and skills to be used creatively and adequate in various situations.

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Innovative Technologies in Educational Process of Teaching Computer Graphics

Zamirgul KAZAKBAEVA

*Kyrgyz-Turkish University Manas,
Kyrgyzstan, Bishkek,
zamira.kazakbaeva@manas.edu.kg*

Kamchybek SYDYKBEKOV

*Kyrgyz State University of Construction, Transport and Architecture named after Isanov,
Kyrgyzstan, Bishkek
ksydykbekov@gmail.com*

ABSTRACT

The purpose of this article is to show the importance of the application and use innovative technologies in educational process. This article considers the problems of teaching 2D- and 3D-computer graphics technologies in the higher educational institutions. Support of independent works of students for project creation. The paper also presents personal original video tutorials developed in the Kyrgyz-Turkish University Manas and shares the experience of video lessons creation. However, one of the main problems at secondary schools and higher educational institutions is the lack of video lessons in the Kyrgyz language. Therefore, we use our original video tutorials and other Internet applications in classroom.

During the lesson we use Net Support School Professional, which helps to plan effective lessons and promote active learning.

INTRODUCTION

Teachers actively use innovative technologies in educational process. Information technologies (IT) are increasingly used in education all around the world. In most parts of the world, the most effective forward leap has been for applying IT in the higher education since 1990. IT includes gathering, organizing, storing, publishing and using the information in the form of sound, picture graphic, text, number, ... by using the computer and telecommunication tolls... (Stensaker, 2007).

The examples of such application are massive open online courses, learning management systems, e-courses, e-books, video lectures, learning assessment tools etc.(Kazakbaeva, 2005)

Video lessons help to increase the interest of students in the subject and their activity throughout the lesson. Today video lessons are the quickest and efficient method of teaching, which leaves all other methods far behind by the price/quality criterion. It has been long ago established that textual information is digested much worse than visual information. Students usually remember only 10% of what they read, 20% of what they hear and 70% of what they participate in.

When the teaching is arranged in a video format, a student is involved and participates in it, because he can repeat all actions directly after the instructor. Students can rewind the video-teacher and listen to him as many times as necessary. They are involved in the process. All the information they see and hear can be immediately applied into practice.

Pedagogical advantages of video lessons:

- You can start watching video anytime when it is comfortable for you;
- You don't need to spend money on tutors;
- You can watch video lesson by yourself or with your classmates under teacher's control;
- In video format student can repeat all actions of teacher, who has designed the course;
- You can play forward the "Video teacher" and watch so many times as it is needed;
- You are in the process and you are watching each action (movement) and word of "video teacher";
- You can practically use all material you have learned;
- Result is well-learned knowledge, fixed skills and work experience with video material.

THE STUDY

As an example of ICT application in computer graphic lessons, we describe the lessons ("Design basics in Computer Graphics", "3D Graphics and Animation", "Multimedia Technology"), in which we address theoretical basics and practical applications of computer graphics. We describe mathematic tools and methods of geometric modeling based on them and reproduce the best known algorithms for solving various problems of visualization and image processing. (Kazakbaeva, 2016)

Computer graphics lessons in the Kyrgyz-Turkish University Manas are conducted at two levels - user and algorithmic. The user level implies using of application software. Programming of graphics is usually done in the Visual C ++ development environment using the OpenGL and DirectX graphics libraries. (This is included as a compulsory course "Computers Graphics I, II" – 2 semesters in the 2nd year). This course further allows students to develop computer graphics design skills.

The purpose of the course "Design basics in Computer Graphics " is the familiarization of students with methods, tools, main filters and effects during processing of digitalized images. The outcomes of the course include the following skills:

- drawing trademarks and logos by following the basic laws of composition, see [figure 1];
- use of client's color preferences and advantageous coloring;
- working with the illusion of space and depth in images;
- creating specialized fonts by using texture.



Figure 1. Designing of logo and composition.

Under the agreement on scientific cooperation between the Chair of Computer Engineering of the Kyrgyz-Turkish University Manas and the "Laser Technologies Lab" of the Institute of Physical and Technical Problems and Materials Science of the National Academy of Sciences of the Kyrgyz Republic, students and postgraduates of the University have trainings and internships at "Laser Technologies Lab" with possible subsequent employment in Companies working in the field of laser technology, see [figure 2].

Examples of using applied skills and habits, depicted in the following pictures, see [figure 1-3].

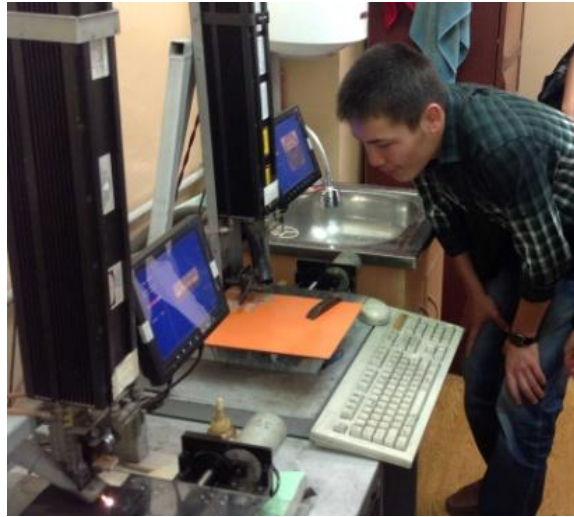


Figure 2. Practical learning of students in the "Laser Technology Lab".



Figure 3. Laser processing of material (from the left - processing and synthesis of the image on the computer; from the right - laser cutting on the skin)

The purposes of the course "3D Graphics and Animation" are:

- familiarization with the basic concepts of computer graphics and image processing of 2D and 3D graphics.
- studying the methods and means of computer graphics using the package 3D Studio Max and Autodesk Maya.
- familiarization with computer animation.
- acquisition of the skills of forming a three-dimensional image and creating animation objects.

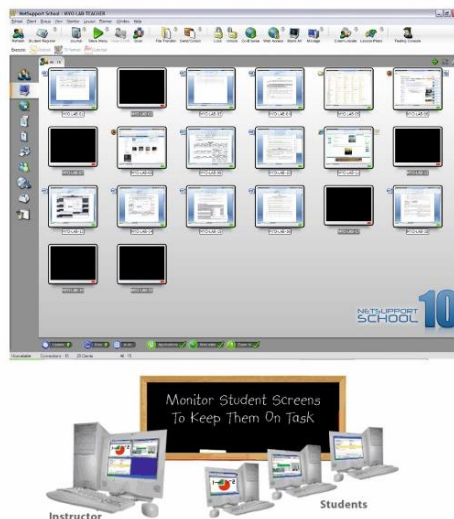
We would like to share our experience on how to make lessons interesting using special application software package and graphic suites, and demonstrate our own video courses.

In these video tutorials we share our experience connected with creation of video lessons, which will be useful for teachers. In order to prepare these lessons, we can use modern computer graphic and audio editing suites like Adobe, Corel, Sony etc. They are used for processing raster graphics, vector graphics, video, animation and multimedia. The task of every teacher is to make each lesson interesting, attractive and up-to-date.

The creating of video lesson is composed from next stages:

- information and material gathering including from book magazines, social media, web sites and other sources;
- structuring of video lesson;
- preparing of pictures (Adobe Photoshop CS6, Corel Draw X8, etc.);
- material recording and editing with using multimedia programs: audio recording, sound edition (Adobe Audition, Sound Forge Pro);
- visualization (Adobe Illustrator, Corel Draw Graphics Suite);
- animation (Autodesk 3ds Max, Autodesk Maya);
- editing of whole tools for preparing video (Adobe Premiere Pro, Camtasia Studio, Corel Capture, Power Point, etc.)

During the lectures, we actively use NetOP School – an interactive computer-based classroom management tools, which is also used for monitoring and presentation, see [figure 4].



- Demo Any Screen to Student PCs-Everyone has A Front Row Seat
- Highlight Areas of Interest-Pass Demo Control to Any Students
- Monitor Student Screens to keep them on Task
- Hand Out&Collect Coursework, Files&Tests
- Lock-Up Student PCs to get&Hold their Attention
- Chat Using Text or Audio-Even Hold Group Discussions
- Control, Log off or Shut Down Student PCs

Figure 4. NetOP School software for Networked Classrooms

CONCLUSIONS

In today's world education needs modern, moderate and simple technologies in order to meet its needs for its arrival and correct use. The article is related to the role and place of information technologies in the modern educational system.

The paper presents personal original video tutorials developed in the Kyrgyz-Turkish University Manas and shares the experience of video lessons creation. Perspective possibilities of information technologies in the modernization of the educational process of teaching computer graphics, as well as in solving number of methodological problems are discussed. The professional experience is stated in the introduction of information technologies in the educational process in the conduct of laboratory classes.

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Integrated Moral Values in Standard-Based Assessment: Opportunities and Challenges of Computer-Based Test in Indonesian National Assessment

Bambang SURYADI

bambang.suryadi@uinjkt.ac.id

Yuli RAHMAWATI

yulir@gmail.com

ABSTRACT

The paper portrays the opportunities and challenges of the computer-based test in Indonesian national assessment. As the country holds standard-based education system, Indonesia faces the challenges, including implementation of standard-based assessment with different characteristics throughout the country. The policy of the national assessment system has been changed within several years for both solving technical and substantial problem, including cheating behavior. The computer-based test, as an innovative solution, was proposed by Board for National Standard of Education and the Ministry of Education and Culture which faced the challenges and observed the opportunities. This research employed qualitative method with observation, interviews, and document analysis as data collection. The results show that there are opportunities and challenges in the educational system, teachers' reflections, students' learning, and their moral values. The implementation of the computer-based test has been empowering students' integrity and teachers' reflections. In the educational system, it has proven significant improvement in reducing bureaucracy chain, time and cost as compared to paper-based test. However, there are challenges of technical and substantial problems including computer facilities, students' computer skills, access to remote areas, and reluctance from opponents. Therefore, the government continuously improves the national assessment system. Based on these findings, the paper delivers the future implementation of the computer-based test in Indonesian national assessment.

Keywords: standard-based assessment, national examination, computer-based test, moral values

INTRODUCTION

Developing students' moral values is the most important issue in education. The importance of moral values in education has been the focus of study for several decades ago (Sanderse, 2013; Niebuhr, 2013; Bower, 2015; Peters, 2015; and Suryadi, 2017). Essentially, the findings of these studies indicated that moral education should help students give respectable contributions to the community and the country. Therefore, educators have to inculcate moral values in their students, regardless of the subject matter. Considering the importance of moral values, it becomes one of the national education aims in Indonesia as stated in national Law No. 20, the year 2003 on National Education System, Article 3. The national educational goal is to develop students as generations and citizens who have faith and fear of God Almighty, and who are noble, healthy, knowledgeable, skilled, creative, independent, democratic and accountable. The community expects that the education can contribute positively to the students' moral education. However, the education system in Indonesia is facing the challenges of integrating these moral values in different components of education from teaching and learning to assessment.

Since 2003, the government of Indonesia has implemented standard-based education for improving the educational quality. According to Government Regulation No. 19, year 2005, the national education standard consists of eight standards which are graduate competency, content, process, assessment, facilities and infrastructure, educators and education personnel, management, and finance standards. Referring to the assessment standard, there are three types of assessment, namely, classroom assessment conducted by a teacher, school assessment conducted by schools, and national assessment conducted by the government. The assessment conducted by the government is in the form of national assessment as clearly stated in Law No. 20, the year 2003 on National Education System. The implementation of national assessment is also regulated by Ministry Decree No. 23, the year 2016 on the Assessment Standard for Primary and Secondary Education. Of the three types of assessment, the most popular issue is national assessment which is conducted in May for junior secondary

schools (year 7-9) and in April for senior secondary schools (year 10-12) every year.

The primary purpose of assessment is to determine students' achievement (assessment of learning) which in a way also determines the effectiveness of programs and teaching method, therein enabling students to realize their potentials. All forms of assessment should be viewed as continuous and essential to teaching and learning (assessment for learning). It should be planned in advance and be an integral and meaningful part of the instructional process (Mohd Noor, 2008). In the Indonesian context, the national assessment aims to measure the achievement of competency in specific subjects nationwide with reference to the standards of graduates' competencies (BSNP, 2017a). In the senior secondary schools, there are six subjects tested, namely, Indonesian language, Mathematics, English, and three subjects according to students' interest in sciences and social sciences. While in junior secondary schools, there are four subjects tested, namely Indonesian language, Mathematics, English, and Science.

National assessment questions are written in the form of multiple choices and are conducted in the form of paper and pencil based test (PBT), as well as, in the form of computer-based test (CBT). According to American Educational Research Association (2014), computer-based test or computer-administered test is a test administered by computer; that indicates test takers respond by using a keyboard, mouse, or other response devices. In broader concept, the implementation of CBT in national assessment is also seen as the means to revolutionize education and build human character (Mohd Noor, 2008). In Indonesia, the implementation of CBT in national assessment was initiated in 2015 and was expanded in 2016 onwards. Ministry of Education and Culture puts the emphasis on using CBT in the national assessment for improving the quality of education and integrating moral values through the implementation of the integrity index. Integrity index means the students' level of honesty in taking the national assessment which is measured from their response patterns in the national assessment (Puspendik, 2016). Thus, the integrity index is considered as an important component in the national assessment.

Data from Center for National Assessment (Puspendik) revealed that out of 97,000 schools with 7.6 million students had taken the national assessment in 2016. There are four categories of schools based on the national assessment results. First, about 21.16 percent of schools fell into high integrity index with high results. Second, about 50.96 percent of schools fell into high integrity index with low results. Third, about 13.61 percent of schools fell into low integrity index and results. Fourth, about 14.27 percent of schools fell into low integrity index and high results (Puspendik, 2016). This means that there is a critical issue related to student cheating behavior in national assessment as long as it is conducted in PBT.

In addition, a Program for International Students Assessment (PISA) survey in 2015 further indicated that Indonesian students had low performances in science, mathematics, and reading, as compared to the students of other countries who took part in this survey (PISA, 2016). Out of 72 countries taking part in PISA 2015, Indonesian students secured the position of 65 in mathematics, 66 for reading, and 64 for sciences. Unfortunately, this position is far behind as compared to Vietnam, which held the position of 22 in mathematics, 33 in reading, and 8 in the sciences. Meanwhile, Malaysia held the position of 44 in mathematics, 49 in reading, and 49 in the sciences. The first position in all three areas was secured by Singapore with a score of 564 for mathematics, 535 for reading, and 556 for sciences.

The above-mentioned reports clearly indicate that Indonesia faces serious internal and external challenges in term of quality education, although different approaches and policies, especially standard based education, have been implemented more than a decade ago. These challenges need to be addressed by all education stakeholders, including central government, local government, and school level. The present study was aimed to address the following research questions: (1) What are the opportunities faced in implementing computer-based test in Indonesian national assessment?; (2) What are the challenges faced in implementing computer-based test in Indonesian national assessment?; and (3) What are the solutions taken to face the challenges?

The findings of this study reveal that the policy of the national assessment system has been changed within several years for both solving technical and substantial problem, including the cheating behavior. The computer-

based test as an innovative solution had successfully reduced the student cheating behavior in the Indonesian national assessment. However, there are challenges of technical and substantial problems including computer facilities, students' computer skills, access to remote areas, and reluctance from opponents. Therefore, the government continuously improves the national assessment system. Based on these findings, the paper delivers the future implementation of the computer-based test in Indonesian national assessment.

METHOD

This research employed qualitative method with observation, in-depth interviews, and document analysis as data collection. The observation was conducted during the national assessment period in the selected schools in certain provinces, such as Jakarta, East Java, West Java, Banten, South Sulawesi, and West Sumatera. The purpose of this observation was to gain information about students' behavior during the implementation of the national assessment. It was also aimed at finding out the obstacles faced during the implementation of the national assessment.

In-depth interview was carried out involving prominent figures from the Ministry of Education and Culture, school principals, teachers, and students. They were asked about their opinions on issues related to the national assessment. The selection of student interviewees in this study was based on the subject interest, namely sciences and social sciences. For interview purpose, guideline and structured questions were prepared and about 30 minutes were taken from each respondent.

The document analysis in the study included the law on the national education system, government regulations, ministry regulations, and other documents related to the national standard of education and standard operating procedure of national assessment issued by BSNP. Comparing, contrasting, criticizing, and synthesizing techniques were used for analyzing the data.

FINDINGS AND DISCUSSION

The findings of this study are presented in the following subheadings in accordance with the above-mentioned research questions. Certain issues were discussed and highlighted in relation to the current relevant research.

1. Opportunities of Implementing CBT in Indonesian National Assessment

Indonesia is well known as the world's largest archipelago, which represents more than 17,000 islands from Sabang in northern Sumatra to Merauke in Irian Jaya. Indonesia is connected with the sea with a total area of 1.910.931.32 km² and a total population of 248.818.100 and has 34 provinces (Central Board of Statistics, 2014). Besides the geographical conditions, Indonesia has around 300 ethnic groups which have different values and beliefs. In short, Indonesia is a multicultural nation and this condition has developed differences in Indonesia, including pictures of education in each area. There are about 208.965 primary and secondary schools across the country (Table 1).

Table 1: Number of schools in Indonesia based on levels and status of public and private schools

Level	Public	Private	Total
Primary School (SD)	132.609	14.904	147.513
Junior Secondary School (SMP)	22.209	14.309	36.518
Senior General Secondary School (SMA)	6.232	6.281	12.513
Senior Vocational Secondary School (SMK)	3.250	9.171	12.421
Total	164.300	44.665	208.965

Source: Ministry of Education and Culture (2015).

Data in Table 1 show that out of the total number of schools in Indonesia (208.965), the number of public schools is higher than the number of private schools with a percentage of 78.62 percent and 21.37 percent respectively. This indicates that school management in Indonesia is done by both government and private sectors including non-government organizations, i.e. Muhammadiyah, Nahdhatul Ulama, and Nahdhatul Wathan for

Islamic organizations or Petra and Pangudi Luhur for Catholic schools. The number of students in those schools is shown in Table 2.

Table 2: Number of students in Indonesia based on level and status of public and private schools

Level	Public	Private	Total
Primary School (SD)	23.138.933	2.993.208	26.132.141
Junior Secondary School (SMP)	7.402.381	2.528.266	9.930.647
Senior General Secondary School (SMA) and Senior Vocational Secondary School (SMK)	4.888.851	3.554.966	8.443.817
Total	37.008.608	11.843.582	48.852.190

Source: Ministry of Education and Culture (2015).

The data in Table 2 further indicate that the number of students from primary to senior secondary school is 48.852.190. This number is considered as opportunities on one side and challenges on the other side. It is an opportunity because those young generations will continue the leadership of the nation in future if they are well educated during the school life. On the other hand, they become challenges for educators to double their efforts in nurturing and preparing them with certain competencies.

According to Law No. 23, the year 2014 about Local Governance, the management of senior secondary schools (SMA and SMK) is under the authority of Provincial Education Offices, while the management of primary and junior secondary schools (SD and SMP) is under the authority of District Education Offices. Therefore, the national assessment is a national government responsibility, ranging from central government to local government. Coordination and united efforts are required in order to make the national assessment a success. Educational streaming consists of formal education, non-formal education, and informal education. Basic education is the compulsory education from year 1 to 9. Basic education takes the form of primary schools (SD) and secondary schools (SMP). Secondary education is the continuation of basic education. Secondary education comprises general secondary education and vocational secondary education. Secondary education takes the form of senior general secondary schools (SMA) and senior vocational secondary schools (SMK).

To achieve the national education aims as mentioned earlier, Indonesia implemented standard based education. According to Government Regulation Number 19, the year 2005, Board for National Standard of Education (BSNP) is an independent and professional agency which has full authority in developing the national standards of education, organizing national assessment, and evaluating school textbooks. Teachers are key persons in implementing the national standards of education and its curriculum as well as in conducting classrooms and school assessment. In addition to classroom and school assessment, the government also conducted a national assessment.

Until 2014, the national assessment received numerous criticisms. There were pros and cons in the existence and the urgency of the national assessment. The main criticism was that, there was students' cheating behavior during the implementation of the national assessment, especially when it is conducted in the form of PBT. Therefore, those opponents of national assessment wanted to demolish it and give the full authority of assessment to the school. Prior to 2015, the national assessment was conducted in the form of PBT across the country. However, since 2015, the government introduced the implementation of computer-based test (CBT) for the first time. This policy was clearly stated in the Ministry of Education and Culture Regulation Number 5, year 2015, about the criteria of student graduation and the implementation of the national assessment. However, due to certain circumstances, only a limited number of schools had implemented the computer-based test for the national assessment.

As shown in Table 3, about 555 schools had implemented CBT in 2015. In 2016, the number of schools implementing CBT in national assessment increased to 4.371 schools and in 2017, drastically increased to

32.221 schools (Puspendik, 2017). The increase in a number of schools implementing CBT due to the awareness among students, teachers, parents, and government authority on the importance of using ICT in classroom assessment, school assessment, and national assessment.

Table 3: Number of schools Implementing CBT in National Assessment

Level	2015		2016		2017	
	PBT	CBT	PBT	CBT	PBT	CBT
SMP/MTs	56,152	42	55,215	979	45,098	11,096
SMA/MA	20,422	135	20,556	1.292	10,905	9,652
SMK	12,131	378	12,507	2.100	2,680	9,829
Program of Package B	4,600	-	4,600	-	3,835	765
Program of Package C	4,427	-	4,427	-	3,548	879
Total	97,732	555	97,305	4.371	66,066	32.221

Source: Puspendik (2017)

As an effort to make the CBT a success, BSNP has conducted dissemination of the national assessment policy, including the need of CBT. One of the important aspects highlighted in the dissemination was the advantages of CBT over PBT. According to the results of monitoring national assessment conducted by BSNP (2016), there were certain advantages of CBT as compared to PBT.

Firstly, from the perspective of implementing committee duties and responsibilities, CBT is more efficient in terms of time, material preparation, scanning, and delivery of test results. There is no need for an auction of procurement of goods and services as the process takes two to three months. There is no need for distribution of test materials involving many parties, including the police. For the school principals as the head of the assessment committee at the school level, they do not need to take the assessment material from the place of storage at the transit point and return the test answer sheet to the District Education Office. From the observer's observation, many headmasters left home before dawn and performed the morning prayers at the transit point, because they did not want to be late to start the national assessment in their own schools.

Secondly, from the participants' perspective, the students prefer to take the national assessment with CBT rather than PBT. Students do not need to blacken the answer sheet with a pencil, but simply click the cursor on the correct option. If they want to change the answer, they do not need to delete the answer, but simply switch the cursor from the original answer to the desired answer. Similarly, students do not need to carry a lot of stationery, such as pencils and erasers. Students do not have to bother to separate the answer sheet from the questionnaire, or worry that the answer sheet of the paper can be damaged. Thus, students can focus more on answering the national assessment.

Thirdly, from the perspective of the complexity of the assessment implementation and business process, there is no shortage of assessment questions or manuscript errors as often happens with PBT, for example, the title on the envelope does not match the contents of the envelope. *Fourthly*, in terms of assessment items, PBT items can only be used once, while CBT items can be used more than once because all the questions are stored in the computer and are encrypted. Thus, the confidentiality of the assessment items in CBT becomes assured. *Fifthly*, in terms of item variation or package, item packages for PBT are very limited. So far, the item variation consisted of 20 items packages in accordance with the number of examinees in one room. Conversely, for CBT the item package is unlimited because it is a computer generated item package. The implication is, with the availability of various assessment items, CBT can be implemented at any time, in accordance with the readiness of learners.

Sixthly, in terms of CBT application used in the national assessment, CBT application is very user-friendly and simple. Those who are habitual of using gadgets like tablets and mobile phones, will not have difficulty in taking CBT. *Seventhly*, in terms of scoring, technically, the results of CBT can be obtained after the participants finished the assessment. However, given the fact that until 2017, there are still two modes of national assessment implementation, the CBT results are released along with the PBT results. Finally, in terms of integrity, it is very hard to find cheating behavior among students taking CBT because each student did unique assessment items. In contrast, PBT is still fraudulent in many ways and methods. High school national assessment results in academic year 2014/2015 show that the integrity index of schools implementing CBT is relatively non-existent (Zero). This showed that students taking the national assessment were concerned with moral values rather than results (BSNP, 2015).

From the above-mentioned description, it can be concluded that the implementation of CBT in national assessment is more effective and efficient in terms of time, cost, energy, and human resources as compared to PBT. Hence, the results of national assessment using CBT were empirically proven to be more objective, credible and acceptable than the national assessment results of PBT. In summary, the differences between PBT and CBT are presented in Table 4.

Table 4: Differences between Paper Based Test and Computer Based Test

Aspect	Paper Based Test	Computer Based Test
Assessment item	Single-use	Multiple-use
Item variation/package	Limited	Unlimited
Type of items	Checkpoint	Various items
Item administration	Fixed timetable	Flexible can be conducted many times
Bidding process for preparing assessment item	Long time (2 months) and expensive	No bidding, cheap
Item production	Long time (2 months) and expensive	Speed and cheap
Item security	Physical security and expensive	Soft copy, easier, and cheaper
Assessment invigilation	Complicated and involving many parties	Much easier and direct
Scoring process	Long time (1 month), expensive	Soft copy, easier, and cheap
Accountability	Complicated and involving many parties	More transparent
Cheating behavior	Easy and frequently happened	Difficult to happen

Source: BSNP (2017b)

Indonesian national assessment is not only aimed to measure students' performance in certain subjects but also to analysis their integrity in completing the national assessment as part of moral education. In other words, the use of CBT is intended to inculcate moral values in term of answering the questions among students taking the national assessment. This notion is based on the evaluation done by BSNP (2016) that student cheating behavior was frequently happening during the national assessment, especially in PBT. However, it is important to note that the integrity index is not a manifestation of the whole students' integrity as it only measured students' behavior during the national assessment only.

The national assessment integrity index was introduced by the government since 2015 where CBT was initially

implemented in national assessment. Since that year, the analysis of national assessment results was done not only to measure students' academic achievement but also to measure their integrity index. The National Assessment Integrity Index (NAII) was analyzed based on individual student, school level, district, provinces, and national level.

The results of BSNP Annual Report (2015) show that almost all regions indicated the occurrence of fraud in the implementation of national assessment for academic year 2014/2015, except the Special Region of Yogyakarta. In order to promote integrity in the implementation of the national assessment, the Minister of Education and Culture has announced schools with a high integrity index (≥ 92) throughout Indonesia, with a total of 503 schools, consisting of 218 SMP, 150 SMA, and 135 SMK, as presented in Table 5.

Table 5: National Assessment Integrity Index by province and school level year 2015

No.	Province	SMP/MTs		SMA/MA		SMK	
		Total	Index ≥ 92	Total	Index ≥ 92	Total	Index ≥ 92
1.	DKI Jakarta	1.323	52	533	48	597	25
2.	West Java	2.194	-	2.115	16	2.194	12
3.	Central Java	4.906	48	1.359	30	1.357	44
4.	D.I. Yogyakarta	526	23	198	8	210	15
5.	East Java	7.680	61	2.666	9	1.553	24
6.	Aceh	1.356	1	482	1	160	-
7.	North Sumatera	3.283	1	1.085	6	852	-
8.	West Sumatera	1.143	6	434	2	185	-
9.	Riau	1.597	2	601	3	225	1
10.	Jambi	960	1	379	-	136	-
11.	South Sumatera	1.621	2	703	-	218	-
12.	Lampung	1.909	4	668	2	359	-
13.	West Kalimantan	1.391	-	448	-	135	1
14.	Central Kalimantan	875	-	256	-	107	-
15.	South Kalimantan	926	-	288	8	104	-
16.	East Kalimantan	701	-	231	1	195	-
17.	North Sulawesi	727	-	226	-	152	-
18.	Central Sulawesi	1.059	1	286	-	144	-
19.	South Sulawesi	2.283	-	752	3	381	-
20.	South East Sulawesi	882	-	331	1	121	-
21.	Maluku	674	-	255	-	86	-
22.	Bali	426	6	166	6	160	5
23.	NTB	1.613	4	643	4	227	-
24.	NTT	1.446	-	408	-	167	-
25.	Papua	586	-	185	-	100	-
26.	Bengkulu	488	-	159	-	79	-
27.	North Maluku	534	-	162	-	90	-
28.	Bangka Belitung	229	-	82	-	48	1
29.	Gorontalo	389	-	84	1	47	-
30.	Banten	2.229	8	764	6	571	2
31.	Riau Islands	351	1	135	1	77	4
32.	West Sulawesi	452	-	122	-	86	-
33.	Papua Barat	271	-	101	-	42	-
34.	North Kalimantan	159	-	54	-	23	-

Source: BSNP Annual Report 2015

Data in Table 5 show very few schools for all levels achieving NAII of ≥ 92 (Very Good). This means that most students in all school levels have a low integrity index. This is mainly due to the fact that most schools in 2015

still conducted the national assessment using PBT instead of CBT. In order to encourage schools and students to improve their integrity index, President Republic of Indonesia invited all school principals with an index of ≥ 92 to have met in the Presidential Palace on December 21, 2015. They also received a certificate of appreciation from the Ministry of Education and Culture (BSNP, 2015).

Furthermore, the findings of this study show that there are certain opportunities faced by the Indonesian government in implementing CBT for the national assessment. First and most important, based on the findings of BSNP (2015), all teachers surveyed agreed strongly that the national assessment is necessary for quality control of national education. They all believed that national assessment is an effective means of motivating teachers and students in teaching and learning process. In other words, they believed the idea of assessment for learning. The main aim of assessment for learning is to support the learning process (van der Kleij, et al., 2012). It allows achievements to be recognized and helps both teachers and learners to reflect on and review their performance and progress (Berry, 2008). However, effective teaching will not happen without assessment of learning.

From students' perspective, most students in Indonesia are ICT literate because they are accustomed to use gadgets in their daily lives. ICT lessons at schools are provided to students in an integrated learning process in the classroom. Therefore, they have no difficulty in doing CBT, either for classroom assessment or national assessment. Another opportunity is the fact that there was strong support from the relevant Directorate within the Ministry of Education and Culture in the form of computer procurement budget. Data from the Ministry of Education and Culture showed about 80,000 computers were provided to schools across the country in support of the implementation of CBT (Ministry of Education and Culture, 2016).

In addition, there is effective cooperation among stakeholders, such as Mayor or Governor in each region to apply CBT in school assessment and national assessment, which was considered as another opportunity. In 2016, Surabaya city was the only city that carried out CBT in all schools. By 2017, all schools in the Province of DKI and Province of DIY implemented CBT. The characteristic of CBT application which is called as user-friendly was also seen as a great opportunity. For this reason, students who use mobile phones will have no difficulties in taking CBT during the national assessment.

Finally, the CBT business process was found to be simple and easy because it was not conducted fully online, rather it was conducted in term of semi-online way. This means that first online conductance was done about three days before the assessment implementation to download question items from the central server to local server. At the time of CBT implementation, it was done offline because it used the local server. The second online conductance was when the proctors sent student's responses from the local server to the central server. Given this fact, there is no worry about the internet connection for CBT implementation.

2. The challenges faced in implementing CBT in Indonesian national assessment

To address the second research question: What are the challenges faced in implementing CBT in Indonesian national assessment. Interview with teachers, students, school principals, and examination authority was done. The challenges were classified into three categories, namely human resources, infrastructure, and assessment items.

From the human resources perspective, it was found that Indonesian teachers' competencies are still low because they did not meet the requirements specified in Law Number 14, the year 2005 for teachers and lecturers, that is, holding a bachelor degree (S1). Data from Center for Educational Data in the Ministry of Education and Culture (2015) show that out of 3,747,947 kindergarten and high school teachers, there are 908.933 (24.25%) people who have not met the academic qualification standard as shown in Table 6.

Table 6: Teacher Academic Qualification According to School Levels

School level	School Status				Total
	Public		Private		
	<S1	> S1	<S1	> S1	
Kindergarten (TK)	6.633	8.883	166.671	174.775	355.912
School for Students with Special Needs (SLB)	2.935	8.881	4.557	15.048	31.421
Primary School (SD)	312.342	1.324.476	56.165	149.879	1.842.862
Junior Secondary School (SMP)	66.016	483.965	54.584	191.395	795.960
Senior General Secondary School (SMA) and Senior Vocational Secondary School (SMK)	86.510	286.206	152.520	196.556	721.792
Total	474.436	2.112.411	434.497	727.653	3.747.947

Source: Ministry of Education and Culture (2015)

Data in Table 6 show that the number of public school teachers who have not met the academic qualification required by law is 474.436 (22.45%), while the number of private school teachers is 434.497 (59.71%). Teachers' low academic qualifications have an impact on their ability to write test items. The results of monitoring on teachers' quality done by BSNP (2016) showed that some problems made by the teachers are still low in quality. Teachers tend to ask questions about what they have taught in the class, rather than asking what students should master. Thus, the results of school assessment were found very high, but the national assessment results were very low. This means that there is a gap between school assessment results and national assessment results. This could happen because the national assessment measured competencies that students should have, while the classroom assessment only measured what the teachers had taught in class.

In addition, other challenges are resistant attitudes of students, teachers, principals, education officials, and parents to implement CBT in the national assessment. This is because they were worried that their assessment scores will fall because of CBT as they cannot cheat on national assessment. Similarly, they also lacked in self-confidence in taking CBT because of their limited literacy in information, communication, and technology (ICT). For these reasons, resistant attitudes were found among students to take CBT in the national assessment.

In terms of infrastructure, the challenges faced by national assessment authority are the shortage of electrical power supply, especially in remote areas. Given the fact that Indonesia is an archipelago country with more than 17,000 islands, this problem has become a national concern because of the distribution of electric power in Indonesia, which is still unevenly distributed and it has to face frequent blackouts due to the limited power supply. Even in certain areas, at the time of implementation of CBT, there is still a blackout, although the Ministry of Education and Culture has coordinated with State Electricity Company (PLN) to ensure there is no blackout during CBT implementation.

In addition, for the challenge associated with the infrastructure, it was found that the central server was down during the implementation of CBT for junior secondary schools, although, finally it was successfully resolved. Most importantly, the fact that there are still many schools that do not yet have at least 20 sets of computers. The number of computers (20) in accordance with the number of examinees in one room is determined by BSNP (BSNP, 2017a). In this context, if the principle of resource sharing is applied, where schools with less infrastructure may join schools with enough infrastructure, then this problem can be overcome. However, the implementation of resource sharing was also not easy due to the presence of schools that determine the fees

charged to schools which wanted to join in taking CBT in other schools. For example, based on the monitoring results done by BSNP (2016), a school that joined other schools was required to pay for the operational cost, such as payment for electricity, committees, and computer maintenance. Due to these problems, certain schools were not willing to join other schools to implement CBT in national assessment, as a consequence they decided to implement PBT instead of CBT.

In terms of assessment questions, there are some challenges faced by the central assessment committee. First, the availability of item banking. The implementation of CBT requires calibrated items with many variations. The problem occurred in the national assessment in years 2015 and 2016, where the same assessment items were used for PBT and CBT, with different time table. Secondly, all assessment items were written in the form of multiple choices which led assessment takers to do the guessing. Thirdly, the scoring process was done using the classical theory approach. That is, the scoring method was done merely by calculating the percentage of the correct answers compared to the number of questions.

Above all, the overwhelming challenge is the fact that the results of the national assessment analysis conducted by the Center for Educational Assessment (Puspendik) have not been fully followed up by the relevant Directorates, education offices, and school units. It should be noted that every year Puspendik conducted an analysis of national assessment results. The analysis sections included students' achievement in each test subject based on schools, regional and national units. Unfortunately, the planning units of the Directorates or sectors, have not been fully addressed to the results of the national assessment analysis, when they prepared the yearly action plans. In short, as Hamilton (2003) said, the decision makers should consider national assessment as instruments for promoting educational changes.

3. The solutions taken to face the challenges

In this section, solutions to the challenges faced in implementing CBT in Indonesian national assessment are highlighted. These solutions are classified into policy decision making, assessments, technical aspect categories.

In relation to policy solutions, the Government, in this case, the Ministry of Education and Culture and BSNP has to establish a national assessment system for both short and long term by empowering the present institutions, both BSNP and Center for Educational Assessment (Puspendik) to be an assessment authority. The institution, as Umar (2008) proposed, should be equipped with personnel whose competencies should be in three things, namely assessment methodology, assessment technology, and assessment management. In addition, the institutions should be equipped with enough facilities needed for an assessment institution. Therefore, there is a need to do benchmarking to other assessment institutions in other countries, such as University of Cambridge Local Examinations Syndicate (UCLES) in the United Kingdom, CITO in Netherlands, Malaysian Examinations Syndicate (MES) in Malaysia, or Australian Council for Educational Research (ACER) di Australia. In addition, the government has to prepare a road map for CBT implementation in national assessment. The roadmap is operationally defined into technical matters and activity programs. Furthermore, both the Ministry of Education and Culture, as well as, BSNP have to socialize the road map to educational stakeholders, from the central government to the regions. Thus the national assessment as an annual activity can be clearly understood from the beginning by the stakeholders. Within feasible limits, the relevant technical information is made available so that those involved in policy decisions may be fully informed.

The teacher's low competence can be overcome in two ways. First, teachers in service positions are asked to continue further studies to complete the undergraduate program. The government needs to allocate scholarships for them. Secondly, by providing in-service training to teachers, then they have to take a competency test and those who pass the test are given recognition certificate for their competencies, which is the recognition that they have equalized an undergraduate degree. The importance of teacher training and capacity building has been pointed out by Stigler & Hiebert (2009) who said that school learning will not improve markedly unless teachers are given the opportunity and support they need to advance their craft by increasing the effectiveness of the methods they use. In addition, to be effective teacher training, school leaders need to use a combination of transformational leadership behavior to improve teaching and learning (Thoonen. et al., 2011).

As said earlier, there was resistance from students, teachers, principals, education officials and other parties to the use of CBT in national assessment. Research has found evidence that computer anxiety is negatively related to such variables as attitudes towards computers. A study by Wiechmann & Ryan (2003) revealed that resistance to computers can be due to resistance to change, fear of the unknown, and most likely due to a lack of exposure and experience with computers. This challenge can be overcome by providing comprehensive information on the importance of CBT in national assessment. This can be realized through discussions, dialogues, or brochures about CBT. The main goal is to make a change of mindset for those who are resistant. Students who are currently in schools are called as Y-generation who are characterized by ICT literacy (Suryadi, 2015). Therefore, assessment techniques for them also need to use ICT, instead of paper and pencil test.

With regard to infrastructure issues, particularly related to power supply shortage, the government should provide enough power supply throughout the nation. So far, the power supply is still concentrated in Java Island. In addition, personal computers (PC) used for national assessment are recommended to be equipped with UPS or by using a laptop instead of a PC. In case of power outage, UPS or laptop battery can still function for two or more hours. Thus, students can still do the national assessment without any interruption. Similarly, the government also has to allocate specific budgets for investment in providing more credible central servers to accommodate the need of CBT in nationwide coverage.

Furthermore, the implementation of CBT in national assessment needs to be improved, especially the availability of national assessment items and timetable. First, since the implementation of national assessment is done in two patterns, namely PBT and CBT, it is necessary to have different assessment item packages; one item package for CBT and another item package for PBT. Secondly, the implementation of CBT in national assessment can be done at different times, unlike PBT which is done simultaneously and massively. Therefore, the availability of assessment questions becomes very important to ensure that the national assessment can run smoothly. In this context, it is important to take into account what American Educational Research Association (2014) stated that in developing the test, there are four standards of test design and development as a basic requirement to fulfill. These are the standards for test specification, item development and review, developing test administration and scoring procedures, and for test revision. If these standards are firmly followed and satisfactorily done by the Center of National Assessment, Ministry of Education and Culture, the future of Indonesian national assessment is promising in improving the quality of national education.

Finally, the results of the national assessment analysis done by Center of Educational Assessment, Ministry of Education and Culture, have to be followed up by stakeholders such as educational directorates, provincial and regional education offices, and school units. In this case, national assessment analysis was done in terms of item difficulty which is classified into low, middle, and higher order thinking skills. If the results of this analysis are made as a reference in designing annual programs and activities of the Directorate in the Ministry of Education and Culture, there will be alignment between program designs and the result of national assessment analysis. When examining the use of national assessment, it is critical to take into consideration the purpose of the testing system. Hamilton (2003) noted three broad purposes for the large-scale-achievement tests: (a) assessment to assist learning also called formative assessment; (b) assessment of individual achievement, also called summative assessment, and (c) assessment to evaluate the quality and effectiveness of educational programs. This means that CBT is considered as the effective way to build up teachers' capacity in conducting classroom and school assessment. The increasing number of schools implementing merely CBT is not meaningful if it is not followed by the improvement of teaching and learning process.

CONCLUSIONS

Standard based education with its supporters and opponents has played important role in improving educational quality in Indonesia. The numerous challenges in Indonesia have provided opportunities to the government for implementing the policy. The national assessment as a standardized test implemented every year in Indonesia has faced challenges, not only the students' achievement but also students' integrity. The policy of CBT in national assessment has stimulated students' awareness of their competence and integrity. This policy has also increased the credibility, accountability, and acceptability of the national assessment. If they can't be honest in taking national assessment, it will be difficult for them to integrate the honesty in their lives. Putting the achievement as main priority has led to students' cheating in the national assessment. Thus the policy of analysis of index integrity and implementing the computer-based test as a system has led to the change for national assessment scoring and portray the systemic integrity. This could only be implemented in the Indonesian context within its characteristics and could not be implemented in other countries. The data have shown the changes in this context of moral values in character education. However, Indonesia is still facing the challenges in implementing standard based education, especially in national assessment with the computer-based test. In responding to these challenges, the Indonesian government has to put efforts to improve the educational quality within standard-based education system. Most importantly, within feasible limits, the policy makers should make reasonable efforts to satisfy and follow the standards and should encourage others to do so.

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Integrating Assessment For Learning Strategies Into Online Learning Environments: A Case Study Of Teaching Secondary Ict

Yiu Chi LAI

The Education University of Hong Kong

Hong Kong

yiuchi@eduhk.hk

ABSTRACT

Research findings show that Assessment for Learning (AfL) have great potential in regard to teaching and learning (Assessment Reform Group, 1999, 2002). On the other hand, Lai and Ng (2010, 2011) confirmed that Web 2.0 tools such as wikis can facilitate different forms of feedback and self- and peer-assessment, in addition to multidimensional assessment methods that are advocated in AfL. These online tools allow students to work together outside school hours in order to explore common interests and feed back to each other regarding their experiences. On a practical level, teachers hope to discover how Web 2.0 tools can make AfL strategies applicable to learning activities. This study aims to explore the ways in which AfL strategies can be integrated into wiki-based learning activities for teaching ICT in secondary schools. By the end of the study, guiding principles for using AfL in wiki-based activities will have been developed. The research design and implementation will be able to provide an exemplar of good practice of e-learning implementation in schools.

INTRODUCTION

Research findings also show that Assessment for Learning (AfL) have great potential in regard to teaching and learning (Assessment Reform Group, 1999, 2002). On the other hand, Lai and Ng (2010, 2011) confirmed that Web 2.0 tools such as wikis can facilitate different forms of feedback and self- and peer-assessment, in addition to multidimensional assessment methods that are advocated in AfL. These online tools allow students to work together outside school hours in order to explore common interests and feed back to each other regarding their experiences. On a practical level, teachers hope to discover how Web 2.0 tools can make AfL strategies applicable to learning activities. Furthermore, although AfL and Web 2.0 are recognized as two promising tools for enhancing teaching and learning, very few empirical studies on such interdisciplinary study can be found. It would be interesting to investigate the synergistic effect of Web 2.0 in education and AfL. This study aims to explore the ways in which AfL strategies can be integrated into wiki-based learning activities for secondary school students. By the end of the study, guiding principles for using AfL in wiki-based activities will have been developed. The research design and implementation will be able to provide an exemplar of good practice of e-learning implementation in schools.

LITERATURE REVIEW

Information Technology (IT) for Learning in a New Era: Five-Year Strategy 1998/99 to 2002/03 was published in November 1998 and marked the beginning of the first phase of structured development of IT in education in Hong Kong. Learning to Learn: The Way Forward in Curriculum Development suggested that “schools should put more emphasis on assessment for learning, a process in which teachers seek to identify and diagnose student learning problems, and provide quality feedback for students on how to improve their work” (Curriculum Development Council, 2000).

Learning and assessment have traditionally been treated as two separate issues; the latter is conducted after the former in order to evaluate what learners have imbibed, thereby enabling instructors to accurately rank their ability. However, assessment is one of the basic components of a curriculum and is often used for more than one function. Additionally, assessment should be designed to support learning rather than to select learners, and be embedded in the learning process with formative feedback (Berry, 2008; Biggs, 1996; Black et al., 2003, 2004; McInerney, Brown, & Liem, 2009; Morris, 1995). Morris (1995) further explains that teachers often require information from their pupils on an immediate basis, which aids them in planning their lessons and, consequently, in obtaining rapid feedback on their pupils’ learning. Similarly, Berry (2008) points out that the fundamental principle of assessment for learning is making a strong connection between assessment and learning. She also suggests that assessment should be used to promote, induce, and reinforce learning.

Self-assessment and peer-assessment also attract attention in higher education (Falchikov & Boud, 1989; Falchikov & Goldfinch, 2000). Peer-assessment is recognized as a meaningful process through which to foster learning effectiveness and develop learners' sense of ownership (Orsmond, Merry, & Reiling, 2000). Well-constructed self-assessment and peer-assessment exercises also have the potential to provide valuable learning experiences and encourage lifelong learning (Berry, 2008). On the other hand, feedback, questioning, dialogue, and the sharing of successful criteria are also considered to be characteristics of AfL (Hodgen & Webb, 2008; Spendlove, 2009; Swaffield, 2008). It was also pointed out that, if teachers are to raise the standards of their students, they should make Assessment for Learning (AfL) an essential component of classroom work (Assessment Reform Group, 1999, 2002; Berry, 2008; Black et al., 2003, 2004; Black & William, 1988; James, 2008; Marshall & Drummond, 2006). The capability and potential possessed by IT undoubtedly fits the requirements of providing timely feedback. Indeed, the effectiveness of conducting peer-assessments online has been examined in detail and subsequently analyzed and confirmed by various studies. These studies show positive results for online collaborative assessment (Buchanan, 2000; Kwok & Ma, 1999; Thelwall, 2000).

Web 2.0 concepts have led to the development and evolution of many web-based communities and hosted services, including weblogs (blogs), wikis, podcasts, Really Simple Syndication (RSS), and social networking sites (O'Reilly, 2005). Although huge numbers of people are informally involved in various Web 2.0 communities and many researchers believe that these communities provide invaluable research opportunities, in reality, only a handful of researchers have conducted verified small-scale research in this area (McLoughlin & Lee, 2007). Lai and Ng (2010, 2011) have conducted studies examining the extent to which Web 2.0 provides a good environment for fostering learning and teaching. One of the studies involved two classes of student teachers giving virtual presentations of their final assignment in video or in any another preferred digital format, as an alternative means of assessment. The majority of student teacher participants expressed their enthusiasm for this new experience and affirmed that they did not encounter any obstacles in creating a virtual presentation (Lai & Ng, 2010). Another case study, which examined student teachers' learning and assessment using wikis, involved an empirical study on the applications of Web 2.0 in teacher education. The results of the study uncovered the potential of using wikis to develop student teachers' knowledge and skills in several areas: IT skills, organization skills, collaboration skills, knowledge of subject contents, knowledge of pedagogy, and assessment skills (Lai & Ng, 2011). The findings of their studies stated that, on one hand, new assessment strategies for online learning environments need to be explored. On the other hand, Web 2.0 features, such as wikis, can facilitate different forms of feedback and self- and peer-assessment, as well as multidimensional assessment methods that are advocated in AfL. In summary, it is worthwhile for educators to further explore how to integrate AfL strategies in wiki-based learning activities at the school level, especially if AfL is one of the focuses of curriculum reform.

RESEARCH METHODOLOGY

There are not many empirical studies that investigate the synergistic effect of online learning environments and AfL. Therefore, the aim of this study is to explore how to integrate AfL strategies into a selected online learning environment. In our case, the study focused on wiki-based learning activities at the school level. The following research questions are posed:

RQ1: What kind of Assessment for Learning (AfL) strategies can be effectively integrated into wiki-based learning activities?

RQ2: What kinds of learning models are suitable for Web 2.0 tools such as wikis?

Approach and study design

This study was a design-based research study (DBR) that adopted a mixed method approach; the qualitative data will be triangulated by the quantitative data collected. DBR is characterized as a research paradigm that blends empirical educational research with the theory-driven design of learning environments (Design-Based Research Collective, 2003; Bell, 2004). Barab (2006) points out that DBR is less a method than it is a collection of approaches that involve a commitment to researching activity in naturalistic settings. DBR usually involves multiple iterations or progressive refinement, and each design cycle includes *design*, *implementation*, *analysis*, and *re-design*. Four design cycles were conducted in this study in order to produce

sharable theories that had implications for practitioners and designers, with a focus on design in authentic settings (Collins, Joseph, & Bielaczyc, 2004; Strobel, Jonassen, & Ionas, 2008). Mixed methods were used; in each design cycle, both qualitative and quantitative data have been collected. Robson (1993) argues that one important benefit of multiple methods is in the reduction of inappropriate certainty. Multiple methods in investigation also allowed us to perform triangulation.

In this article, a case study on teaching Information and Communication Technology (ICT) in senior forms will be discussed in detail. In this case, qualitative data sources were extracted from dialogue exchanges and contents constructed on the wiki platform, focus group interviews of sample students for tracking attitudes towards the new teaching approach, and reflections from teachers. The quantitative data sources also included the log data on the wiki platform, such as the number of comments posted and the media elements uploaded by the students. These data will be used to triangulate the qualitative data for examining the effect of AfL on teaching and learning. Based on the findings in the first cycle, the AfL strategies applied in the second cycle were refined. The same process was repeated for the next cycle. By the end of four design cycles, an attempt to answer RQs and develop a basic model for integrating AfL in wiki-based learning activities was made. Figure 1 shows the conceptual framework for each design cycle of the study.

For the entire project, the research team extended the study to four primary and four secondary schools, once the project had been completed. The scale was justified by the funding to be claimed and the time span of the proposed project. The richness of data produced should be able to answer the research questions.

Participants

This reported case is to demonstrate the design and implementation of the new teaching approach in secondary sector. A class of students took part in a wiki-based learning activity in each cycle. As the design aimed to improve the learning model that will be applied to wiki-based learning activities, there was no need to ask the same class to undergo four design cycles. Furthermore, it would not have been a practical arrangement in local secondary schools. Thus, the class chosen depended on the teaching duties of the project teacher. The study has been run for two school years and four design cycles have been performed. At the beginning, the project teacher was required to attend professional development workshops on using online learning environments in teaching and learning and about AfL strategies in classrooms.

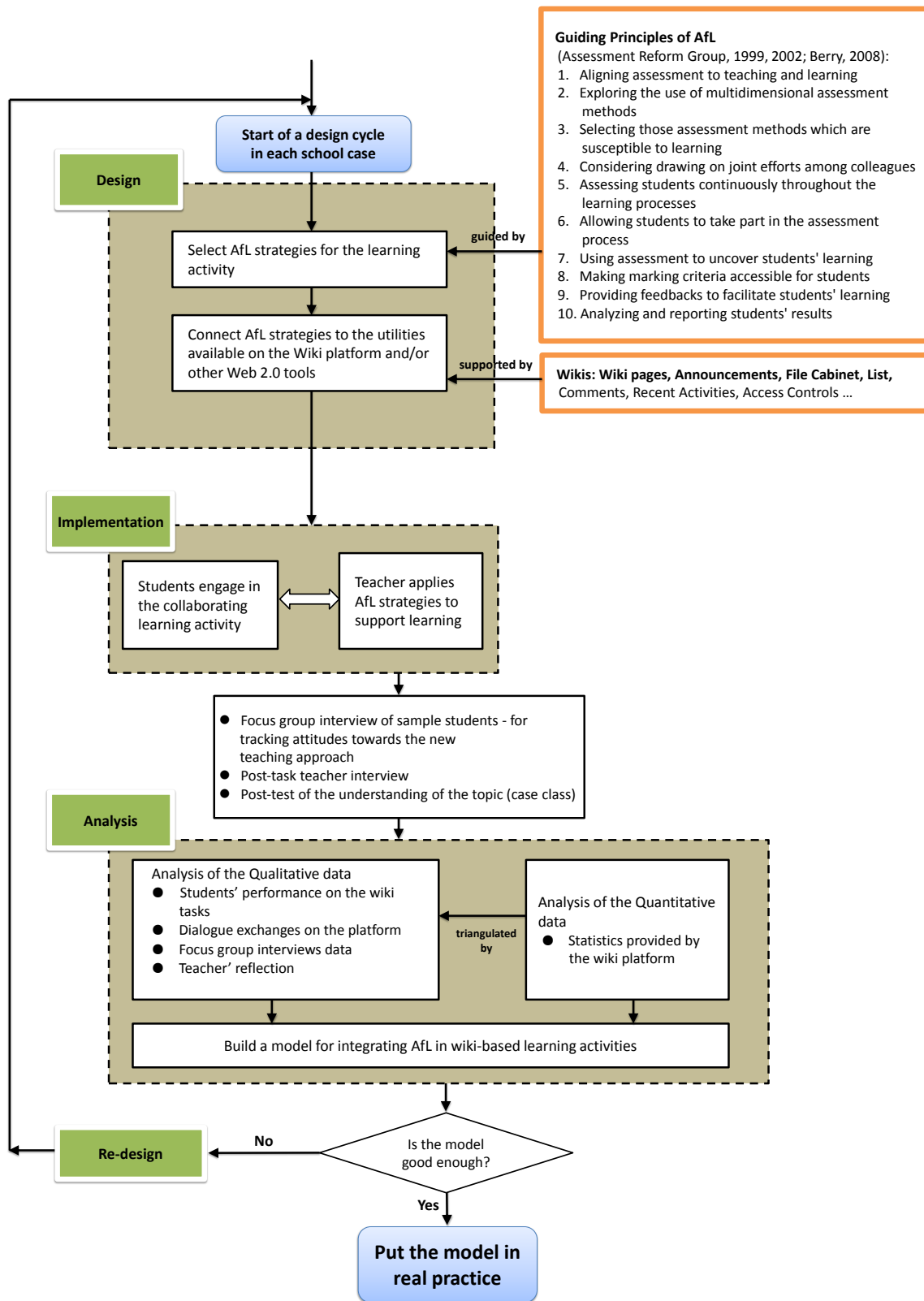


Figure 1. Conceptual Framework of the Study for each design cycle

IMPLEMENTATION

The DBR plan consisted of four cycles. In each cycle, a class of students taught by the teacher was required to complete an online learning activity. The project teacher was an ICT teacher, so the topics for the learning activities were selected from the senior form ICT curriculum. At the design stage, the project teacher was also required to decide which topics would be more appropriate for conducting learning activities on wikis. As “Google sites” is a free wiki service and easy to use, it was adopted for the study. In each task, the students were required to work in groups and complete a wiki-based learning activity designed by the teacher. In each cycle, the project teacher was asked to find out how to integrate appropriate AfL strategies into the online tasks. The strategies were adopted from the ten guiding principles of AfL proposed by Berry (2008):

1. Aligning assessment to teaching and learning;
2. Exploring the use of multidimensional assessment methods;
3. Selecting those assessment methods which are susceptible to learning;
4. Considering drawing on joint efforts among colleagues;
5. Assessing students continuously throughout the learning processes;
6. Allowing students to take part in the assessment process;
7. Using assessment to uncover students’ learning;
8. Making marking criteria accessible for students;
9. Providing feedbacks to facilitate students’ learning;
10. Analyzing and reporting students’ results;

The framework of the wiki project had been set up by the project teacher. Further guidelines and feedback were given by the teacher during the project period. Each design cycle in the case included four stages: design, implementation, analysis, and re-design. In each design cycle, two types of data were collected: qualitative and quantitative. The qualitative data included the students’ performance in regard to the wiki tasks, the dialogue exchanges on the platform, the focus group interviews of case classes, interviews of sample students for tracking attitudes, and teachers’ reflections. This enabled the researchers to explore how to connect AfL with the wiki-based learning activities. Statistics provided by the wiki platform also allowed the researchers to triangulate the findings from the qualitative data. The findings from first design cycle enabled the researchers to adjust the AfL strategies in wiki-based learning activities. The steps of analysis for the first design cycle have been repeated for the next cycle, and so on.

In the following sections, the researchers will illustrate how the project teacher attempted to integrate AfL strategies into wiki-based learning activities. The first design cycle was a simple introduction for the project participants, while the fourth design cycle showed an improved design for the learning model. In the next section, a summary of the four design cycles shows the major AfL strategies used and the refinement for each cycle.

The First Design Cycle

Subject: Senior Form ICT

Topic: ISP

Purpose

This cycle aimed to help the project teacher learn how to design wiki-based learning activities and integrate appropriate AfL learning strategies into the learning activities.

Learning Objectives

After completing the learning activity, the students should be able to:

1. Describe the services provided by Internet Services Providers and understand the cost of acquiring services from these providers;
2. Select appropriate service plans offered by ISPs.

Design and Implementation of the Learning Activity

In each learning activity, the students were encouraged to work in groups as follows:

- Forming a group of three to four students;

- Searching for information on the assigned topic;
- Consolidating the collected information and presenting the findings on the project wiki through collaboration;
- Inviting classmates from other groups to comment on the wiki;
- Reviewing and giving comments on the reports of other groups.

Every group had the responsibility of adding appropriate and updated contents to the wiki project. All project participants were also encouraged to give encouragement to their peers and write constructive comments on their work. In order to achieve the learning activities, the teacher tried to align the learning activities with the assessment and objectives. He divided the learning activities into four parts and the students were required to complete the following learning tasks:

Part 1

- (1) List out your current ISP, service plan, and price.
- (2) Take a photo of your ISP modem and upload it to your own page.

Part 2

- (1) Browse your ISP homepage and list out all the service plans under your own page.
- (2) If there are add-on services or gifts provided with the basic plan, please state them as well.

Part 3

- (1) Use the OFTA (Office of the Telecommunications Authority)'s speed testing tool (<http://speedtest1.ofa.gov.hk/speedtest.php?lang=trad>) to test your broadband speed.
- (2) Is the speed the same as your current plan? If not, what is a possible reason for that?

Part 4

- (1) Compare your current service plan with your ISP promotion. Would you still choose it? Why?
- (2) Compare your current service plan with other students' ISP promotions. Which one will you choose? Why?

As this was the first cycle, it aimed to help the project participants understand the underlying principles and the learning activity was kept as simple as possible. The teachers created a wiki site using Google Sites for the project, which enabled the participants to browse and create their own wiki pages. The learning tasks were uploaded to the wiki and the students were asked to follow the guidelines to complete the assigned tasks (see Figure 2).

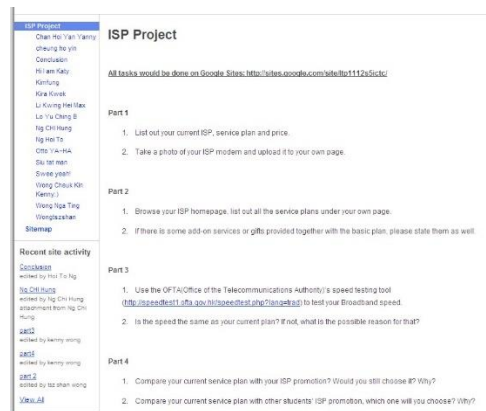


Figure 2. Wiki-based learning activities designed by the project teacher

Student Performance

As the project wiki were constructed with Google Sites, the participants could be assigned different roles within the learning activities. For each learning activity, the teacher was the owner of the wiki site and could assign different roles to their students: *owner*, *collaborator*, or *viewer*. In order to facilitate peer-assessment activities, all students were assigned a collaborator role. They were allowed to create their own pages and edit the pages in the project wiki. Additionally, the students were able to post their responses on any pages

under the project wiki. For each part of the wiki-based learning activity, the students did not seem to have any difficulties in completing the tasks on the new learning platform. They were able to post replies, diagrams, and charts to the project wiki. Table 1 summarizes the students' participation in the learning and assessment activities.

Table 1. Students' participation in the learning and assessment activities

Learning activity	Total number of replies	Diagrams uploaded	Charts created on the pages
Part 1	15	15	/
Part 2	10	/	20
Part 3	7	6	/
Part 4	6	/	/

Assessment for Learning Strategies

In the first design cycle, the teacher attempted to integrate some simple AfL strategies into the wiki-based activities. In designing the activities, he tried to align assessment, learning activities, and the learning objectives. The contents, learning tasks, and the assessment activities were closely related and cross-referenced. The teacher also attempted to use multiple ways of assessing the students' achievements. Thus, the students were required to complete a number of assessment tasks. Furthermore, the teacher sent a questionnaire to his students in order to collect more information about their understanding of the topic, once they had completed all the tasks on the wiki (see Figure 3). In summary, the following AfL strategies were explored by the project teacher:

- Aligning assessment to teaching and learning;
- Exploring the use of mulita-dimensional assessment methods;
- Using assessment to uncover students' learning.

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Conclusion

Conclusion on ISP Project

More understanding to the HK ISPs.

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After the project, which ISP would you choose? *

☒ Netvigator (PCCW)

☐ HKBN

☐ i-Cable

☐ HGC

After the project, which way will you consider to choose an ISP first? *

(1 is the most important, 5 is the least important)

	1	2	3	4	5
Monthly Fee	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local Upload / Download Speed	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Add-on service	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Customer service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Contract length	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Promotion	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Figure 3. Questionnaires for uncovering student learning

Conclusion for the First Design Cycle

The purpose of this cycle aimed to enable the project teacher to learn how to design and implement wiki-based learning activities. It also allowed the teacher to explore how to integrate AfL strategies in the learning activities. Meanwhile, it also allowed his students to become familiar with the new learning platform and teaching approach. The design of the learning activities was kept as simple as possible and the project team

did not plan to collect too much data in this piloting cycle. In summary, after completing the learning activity, the students were able to create and edit their own wiki pages, upload photos, and use advanced formatting features to present their ideas. The platform also provided a convenient means for promoting peer learning and conducting peer-assessment activities.

The Fourth Design Cycle

Subject: Senior Form ICT

Topic: Data Control

Purpose

This was the last design cycle of the study. The project teacher tried to apply the knowledge and skills learnt from the previous cycles and integrate more applicable AfL strategies into the wiki-based learning activity.

Learning Objectives

After completing the learning activity, the students should be able to:

1. Briefly describe the important features of data control.

Design and Implementation of the Learning Activity

As in the previous three design cycles, the teachers created a new project wiki with Google Sites, to be used for conducting learning activities. The teacher still assigned a collaborator role to each student. This enabled them to create and edit their own wiki pages. Details and guidelines of the learning tasks were uploaded to the wiki and the students were asked to follow the instructions in order to complete the assigned tasks. In this design cycle, the students still worked in groups. Eight small groups were formed and tasked with preparing reports for eight different topics. The topics assigned to the groups were as follows:

- Group 1 Data Verification
- Group 2 Field Presence Check
- Group 3 Field Length Check
- Group 4 Range Check
- Group 5 Fixed Value Check
- Group 6 Format Check
- Group 7 Type Check
- Group 8 Check Digit

In order to complete the assigned tasks, the students were required to collect relevant information, including photos and videos, from the internet. Since the students were assigned collaborator roles in the wiki, they were allowed to create their own wiki pages and edit any pages under the same wiki. By the end of the activity, each group was able to create their own pages to present their findings. In order to gain an in-depth understanding of the new pedagogy, four students were interviewed together, in order to probe their views on the learning process as a whole.

Student Performance

In tackling the tasks, the students were allowed to present their findings in their own way. It could be observed that some groups attempted to use media elements to enrich their reports. In addition to using text, four groups also used photos to illustrate their findings. One group also attached a document to their report page as supplementary information. Figure 4 shows the page created by the Group 4 students. They were able to present their findings in appropriate text format and use photos to show two examples of a check digit.

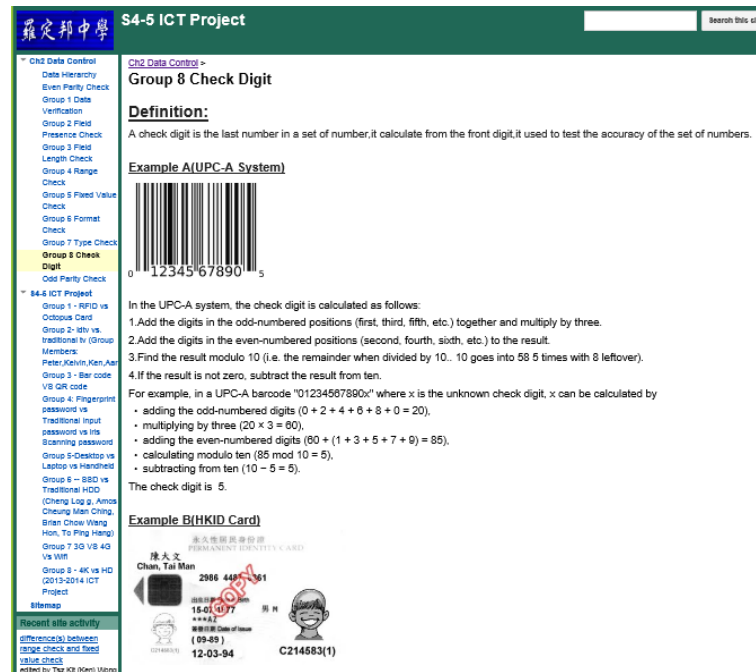


Figure 4. Students' wiki pages, presenting their report on an assigned topic

Assessment for Learning Strategies

In comparison to the previous example (the first design cycle), the project teacher here tried to refine the peer-assessment activity. At the beginning of the activity, he also posted the assessment criteria of the project (see Table 2), in order to make it accessible for students. The rubrics were used for assessing the ICT projects in the peer-assessment activity, meaning that the students were encouraged to actively participate in the assessment process. After students had completed their own pages, peer-assessment activities were conducted among groups. In this cycle, the students were required to give responses to the comments from other groups and conduct a presentation to the class. Table 3 summarizes the students' participation in the peer-assessment activity. The students were eager to give comments and suggestions to their peer groups; they showed no reluctance in making negative comments on others' work. Furthermore, the teachers continuously monitored the whole learning process and gave comments on the students' work when needed. In summary, the following AfL strategies were applied to the wiki-based learning activity:

- Aligning assessment to teaching and learning;
- Exploring the use of multidimensional assessment methods;
- Assessing students continuously throughout the learning process;
- Allowing students to take part in the assessment process;
- Using assessment to uncover students' learning;
- Making marking criteria accessible for students;
- Providing feedback to facilitate students' learning.

Table 2. Criteria for peer-assessment: Rubrics for assessing the ICT projects

Criteria		Level 0	Level 1	Level 2	Level 3
Knowledge and Understanding (30%)	<ul style="list-style-type: none"> • Introduction to your topic. • Explain how it works. 	<ul style="list-style-type: none"> • No explanation of your topic. • No explanation of your items. 	<ul style="list-style-type: none"> • Simple explanation of your topic. 	<ul style="list-style-type: none"> • Brief explanation of your topic. 	<ul style="list-style-type: none"> • Detailed explanation.
Thinking	<ul style="list-style-type: none"> • Show 	<ul style="list-style-type: none"> • No examples. 	<ul style="list-style-type: none"> • One 	<ul style="list-style-type: none"> • Two to three 	<ul style="list-style-type: none"> • More than

and Inquiry (30%)	<i>examples to explain its usage.</i> • <i>Introduction to the examples about the topic in a real situation.</i>	• No explanation.	example with explanation.	examples with explanations.	three examples with explanations.
Communication (20%)	• <i>Comment on the other group's content and improvement.</i>	• No comment given.	• At least one suggestion for improvement made.	• At least two suggestions for improvement made.	• At least three suggestions for improvement made.
Conclusion (20%)	• <i>Conclusion of the topic.</i>	• No conclusion given.	• Brief conclusion.	• Conclusion but not focusing on the main theme. • No more than five wrong spellings.	• Conclusion and presentation are well-organized. • A clear comparison is seen.

Table 3. Students' participation in the peer-assessment activity

Group	Total responses made by the group members	Types of responses					Teacher's feedback for the group
		<i>Positive feedback</i>	<i>Negative feedback/suggestion</i>	<i>Positive/negative feedback or suggestion</i>	<i>Query</i>	<i>Feedback on feedback</i>	
1	18	0	4	10	4	0	0
2	21	3	6	10	2	0	0
3	16	4	1	10	1	2	1
4	16	0	7	9	2	1	1
5	19	3	0	16	0	0	0
6	18	0	16	2	2	0	2
7	18	2	8	8	0	0	1
8	15	6	2	6	2	2	2

Conclusion for the Fourth Design Cycle

This was the last design cycle of the study. The project teacher and the students were familiar with the learning platform and the teaching approach adopted by the teacher. It could be observed that the project teacher was able to apply the knowledge and skills learnt from the previous cycles. More appropriate AfL strategies were applied to the design of the wiki-based learning activity.

As the second and third design cycles were quite similar, they will not be discussed in detail. In the next section, there will be a concise summary of the major components of the four design cycles.

Summary of Findings

Table 4 shows a summary of the details of each design cycle. The project attempted to align the leaning objectives, learning activities, and AfL strategies in each design cycle. It can be observed that more and more AfL strategies were applied to the wiki-based learning activities.

Table 4. Summary of the four design cycles

Design Cycle	Topic	Objectives	Learning Activities	AfL Strategies
1	Understand Services Provided by ISPs	<ul style="list-style-type: none"> Describe the services provided by ISPs and understand the cost of acquiring services from these providers. Able to select appropriate ISP service plans. 	<ul style="list-style-type: none"> The teacher gave instructions on the project wiki. Ask students to present their answers on the wiki. Students' presentations can be in text, diagram, or chart form. 	<ul style="list-style-type: none"> Aligning assessment with teaching and learning/ Exploring the use of multidimensional assessment methods. Using assessment to uncover students' learning.
2	ICT Computer System Project	<ul style="list-style-type: none"> Understand and compare the features of different types of computers. Able to select appropriate computer systems for different situations. 	<ul style="list-style-type: none"> The teacher posted a task on the project wiki. The students were required to complete the task in groups and conduct peer-assessment activities. 	<ul style="list-style-type: none"> Aligning assessment with teaching and learning. Exploring the use of multidimensional assessment methods Allowing students to take part in the assessment process. Using assessment to uncover students' learning. Providing feedback to facilitate students' learning.
3	Understand New Mobile Technologies	<ul style="list-style-type: none"> Understand new mobile technologies through learning some new ICT terms. 	<ul style="list-style-type: none"> Students worked in groups. Different groups were assigned different tasks. They were required to collect relevant photos, videos etc. on the internet. After students had completed their own pages, peer-assessment activities were conducted among the groups. The students were required to make a presentation to the class. 	<ul style="list-style-type: none"> Aligning assessment with teaching and learning. Exploring the use of multidimensional assessment methods Allowing students to take part in the assessment process. Using assessment to uncover students' learning. Making marking criteria accessible for students. Providing feedback to facilitate students' learning.

4	Data Control	<ul style="list-style-type: none"> • Understand the important features of data control. 	<ul style="list-style-type: none"> • Students worked in groups. • Different groups were assigned different tasks. • There were required to collect relevant photos, videos etc. on the internet. • After students had completed their own pages, peer-assessment activities were conducted among the groups. • The students were required to give responses to the comments from other groups. • The students were required to make a presentation to the class. 	<ul style="list-style-type: none"> • Aligning assessment with teaching and learning. • Exploring the use of multidimensional assessment methods • Assessing students continuously throughout the learning process. • Allowing students to take part in the assessment process. • Using assessment to uncover students' learning. • Making marking criteria accessible for students. • Providing feedback to facilitate students' learning.
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Student Interviews

Except from during the first design cycle, several students were invited to attend a focus group interview after completing the learning activity in each cycle. This helped the researchers probe the students' views on the learning process as a whole, in addition to their attitudes towards the new learning approach. Here are some advantages and drawbacks about using wikis and the new design of learning activities, as pointed out by the students:

Advantages:

- Multiple approaches to learning
 - Student 1: *We can learn new knowledge through the internet.*
 - Student 3: *We are required to do hands-on work searching for information on the internet. This can complement the information we have learnt from others' presentations. The process helps me learn a lot.*
 - Student 4: *Since I need to search for information from the internet, consolidate the collected information, and present findings on the wiki, this let me learn a lot during the process. Learning in wiki-based learning activities is more convenient and efficient than just reading books.*
- Wikis are a convenient and efficient learning platform.
 - Student 1: *I can share my work through the project wiki during the class. It allows every participant to see my post immediately and there is no need to make printed copies for sharing. Furthermore, we can review our work at home after school.*
 - Student 4: *I feel happy with the platform as it allows me to amend my work without any delay.*
- The wiki platform facilitates peer-assessment activities.
 - Student 1: *Sometimes, we feel more comfortable communicating with others on the platform than using a face-to-face mode. It seems that we have no reluctance to give negative comments to our peers and even criticize their work.*

Drawbacks:

- Internet access is vital for participating in the wiki-based learning activities.
 - S03C2S1: *We cannot participate in any online activities if we do not have internet access.*
 - S03C2S3: *If the home computer is not available for me, I cannot respond to others' questions immediately.*

Conclusions and Limitations

The main objective of the study was to examine how to integrate AfL strategies in wiki-based learning activities and then develop a feasible model for designing and implementing these kinds of activities with Web 2.0 tools. The findings led to answers to the study's two research questions.

RQ1: What kind of Assessment for Learning (AfL) strategies can be effectively integrated into wiki-based learning activities?

From the findings of the four design cycles (see Table 4), the following AfL strategies have been identified:

- Aligning assessment with teaching and learning;
- Exploring multi-dimensional assessment methods;
- Selecting assessments susceptible to learning;
- Assessing students continuously;
- Allowing for students' participation in the assessment process;
- Using assessment to uncover learning;
- Making marking criteria accessible;
- Providing feedback.

The study confirmed that these are applicable to the wiki-based activities and the students agreed that these types of learning activities are efficient for acquiring new knowledge. It can be observed that two guiding principles proposed by Berry (2008) cannot be tested in this case study:

- (1) *Drawing on joint-efforts amongst colleagues* – This AfL strategy could not be applied in the study as only one project teacher was involved in the study. However, this also reflects the practical situation in teaching secondary schools. There may be only one senior form ICT teacher in most secondary schools.
- (2) *Analyzing and reporting results* – As the duration of each cycle was short, the researcher did not track the teachers' work after the work was completed. However, the teacher reported that he would retain the wiki site for further analysis when he had more free time.

RQ2: What kinds of learning models are suitable for Web 2.0 tools such as wikis?

With reference to the implementation details, a simple workflow model has been built. This model can be used as a guide for integrating AfL strategies into wiki-based learning activities (see Figure 5).

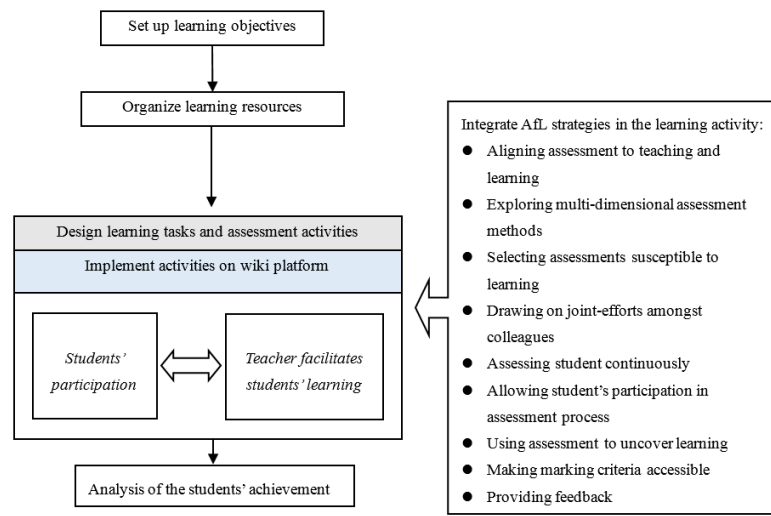


Figure 5. Workflow model for integrating AfL strategies into wiki-based learning activities

In the study, the researchers have performed some important ground work for the interplay of AfL strategies and Web 2.0 tools. However, there are still a lot of unknowns requiring further investigation. The guiding principles will be better formulated if more and more cases can be carried out in the future. This will also help refine the learning model, which can be applied to different subjects and different Web 2.0 tools.

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Integrating Software Development Courses in the Construction Curriculum

Afolabi, ADEDEJI

Covenant University, Ota, Ogun State, NIGERIA
adedeji.afolabi@covenantuniversity.edu.ng

Ojelabi, RAPHEAL

Covenant University, Ota, Ogun State, NIGERIA

Oyeyipo, OPEYEMI

Bells University of Technology, Ota, Ogun State, NIGERIA

Tunji-OLAYENI, PATIENCE

Covenant University, Ota, Ogun State, NIGERIA

Omuh, IGNATIUS

Covenant University, Ota, Ogun State, NIGERIA

Amusan, LEKAN

Covenant University, Ota, Ogun State, NIGERIA

ABSTRACT

Researchers have largely revealed the importance of ICT/Software in changing the economy of a nation and achieving sustainable goals. The present youth population are a result of the computer/internet age and these characteristics should be harnessed. The study examined the integration of software development courses in the construction curriculum, specifically in the business of resource management. The study employed the use of a cross-sectional survey design using the instrument of questionnaire to obtain data. A total of thirty (30) educationist in the built environment participated in the study and were selected randomly through a convenient sampling method. The data obtained were analyzed using SPSS v21.0. Descriptive and Inferential statistics test of Factor Analysis, One-way ANOVA and Kruskal wallis were conducted. Results revealed that the factors that engender learning of software development courses in the construction curriculum are grouped into three (3) namely teaching support factors, learning Support factors and the regulatory support factors. The study revealed that poor delivering method, poor internet connectivity and low patronage of indigenous software are significant barriers to the integration of software development courses in the construction curriculum. In conclusion, there was no significant difference among construction professionals on the benefits of integrating software development courses in the construction curriculum. The study recommended the speedy integration of software development courses in the construction curriculum, carefully aided with adequate teaching and learning facilities. In addition, government should support and patronize locally developed software in order to aid the growth of the industry in the sub Saharan Africa.

Keywords: Construction Education, Teaching support, Resource Management, Software development, Learning methods.

INTRODUCTION

A surgical look at the revolutionary impact of the internet and the advent of online applications in social media and e-commerce or e-business makes it important to consider what it could do to the business of construction and other professions. The construction sector has been seen as the provision of shelter and infrastructure rather than been seen as this and much more. The business side of the construction sector must be critically examined. Not seeing the construction sector as a business would largely affect time, cost and the quality requirements of a building. Yagmuroglu, Gunaydin and Arditi (2009) asserted that contractors fail because they lack business knowledge of construction projects. Every contractor's aim is to make profit, by this he/she employs the construction professionals to achieve this purpose. But, sadly to infer, construction professionals have not judiciously helped contractors and investor to achieve this sole purpose.

In recent years, the construction industry has been using many softwares on construction project in preparing construction time and cost needs. But, this has not led to project success on many construction projects in Nigeria. The high incidences of cost overrun, time overrun, abandonment of projects, large piles of construction waste, delay, non-payment of workers etc. have marred the image of the Nigerian construction industry. This has led to adversarial relationship between many investors, clients and contractor/construction professionals. This can be largely attributed to contractor/construction professionals' neglect of controls and quality (Bamisile, 2004). The argument may be that most of the construction softwares are not developed by construction professionals and therefore makes it hard to incorporate certain controls.

But how can construction softwares measure quality? It is opined that when construction softwares are used to prepare construction documents, it is for the plan that is set in the future. Nevertheless, there is need for controls to be set in place. Yagmuroglu *et al.* (2009) argued that construction managers are meant to make plans and assess the status of the plans thereafter. Plans are activities set for the future, while controls are set to cope with the changes that will invariably occur in the actualization of these plans. Bamisile (2004) referred to this as having a progressing system for the resource conversion process. Jimoh (2012) explained that this is the act of checking, measuring and recording of progress in comparison with planned requirements. Construction softwares can help to ensure quality of attaining cost and time requirements which are of enormous benefits to all stakeholders in the construction industry. This can be achieved by measuring plans, controls and the changes that occur eventually. Construction softwares that helps to put controls and ensure quality are either scarce, not user friendly or not available in the Nigerian context.

Lately, the Nigerian curriculum has receive some bashing from different quarters for its rigidity and not been able to measure with the needs of the times (Asaolu, 2012). There is need for the Nigerian curriculum to adapt to the new trends and sustainable goals of modern society. Studies of curriculum development such as introduction of sustainability in construction education, entrepreneurship, video learning, occupational health and safety, OSHA etc. shows that if well implemented, can lead to a better performing construction industry. Therefore, the study aims to examine the integration of software development courses in the area of resource management in the construction curriculum. The following research questions would form a guide for this study;

- What factors engender learning of software development courses in the construction curriculum?
- How significant are the barriers to the integration of software development courses in the construction curriculum?
- Of what benefit is the integration of software development courses in the area of resource management in the construction curriculum?

RESOURCE MANAGEMENT

Resource management is the soul and heart of any construction project. According to Ziaidoostan, Ghaneh, Amanin and Gholipor (2013), no task or activity in the construction industry can be performed without various construction resources. Nagaraju, Reddy and Chaudhuri (2012) defined resources as an entity that contributes to the fulfillment of project assigned tasks such as manpower, material, money, equipment, time or space. While management involves planning, organizing, commanding, coordinating and controlling. Simply put, resource management is the process of using management skills and techniques in planning, organizing, commanding, coordinating and controlling of resources.

The construction industry is known to consume large amount of resources and energy (Ekanayake and Ofori, 2000; Nagaraju *et al.*, 2012). These resources makes the major cost of construction projects. It is worthy to note that these resources have their own inherent high risk and uncertainties, which makes it necessary to manage them well. According to Mendoza (1995), manpower, equipment and materials are important project resources which requires close management attention in order to ensure a satisfactory conclusion to a construction project.

The Nigerian construction industry has exhibited attributes of large amounts of waste (Enshassi 1996; Garas, Anis, and Gammal, 2001), delays (Odeh and Battaineh, 2002), cost overrun, time overrun, poor productivity (Hai, Yusof, Ismail and Wei, 2012), conflicts and dispute (Okoye, Ngwu and Ugochukwu, 2015) etc. which are major characteristics of mismanagement of resources and adds no significant value to the client or investor. Apart from mismanagement, other negative aspects which affects construction projects in terms of its resources are unavailability of resources, theft and vandalism, use of sub-standard resources, delivery of wrong quantities. These

undesirable qualities can invariably cripple contractors and construction firms. In Nigeria, there are two main categories of construction firms; the few multinationals and the indigenous firms (National Bureau of Statistics, 2013). These multinationals which controls large chunk of the mega projects engage the use of some prime foreign or in house developed ICT tools in carrying out its business of resource management and as thus realized great gain from it (Jimoh, 2012).

According to Jimoh (2012) executing construction projects are becoming more complex and challenging by the day. Effective resource management is the key to construction project success which can largely be achieved through the integration of information and communication technology in its diverse phases (Haddad, 2015). In spite of the growing problem and the implications of poor construction resource management, most indigenous construction businesses still manage these critical resources—and all of the data surrounding them—with nothing more than spreadsheets, paper forms and human memory. As a result, these organizations are incurring unnecessary costs and taking on risks that are impeding their ability to grow and compete in an industry where there is very little room for error. The areas in resource management are wide, ranging from material management, money management, human (manpower) and non-human (equipment) management, time management and space management. Material management alone, can be broken further into Material estimation, budgeting, planning & programming, Scheduling, purchasing & procurement, Receiving & inspection, Inventory control, storage & warehousing, Material handling & transport and Waste management (Thomas, Riley and Messner, 2005; Stukhart, 2007). These are areas burgeoning the need for further ICT and software development.

SOFTWARE DEVELOPMENT IN DEVELOPING ECONOMIES

Information is an asset. Information and Communication technology has been identified as a key driver for the socio-economic development of developing economies like Nigeria (Soriyan, Mursu, Akinde and Korpela, 2001; Misra, 2015). Olaore (2014) stated that it can engender global competitiveness and national development. According to Okonta (2006) investment in ICT is able to create wealth to an ailing economy. Countries such as Japan, India and Israel are major exporters of software technology as a primary product in its economy (Momodu *et al.*, 2007). Therefore, ICT should be high priority sector to aid any economy's plan of diversification (Soriyan *et al.*, 2001).

Presently, some Nigerian institutions have incorporated the use of ICT into their curriculum. The aim was that when students grow up in an ICT environment, they may gain many hours of experience using ICT facilities (Olaore, 2014). Even though the institutional framework for the adoption of ICT has been there since 1989 by the Nation University Commission, Idowu and Esere (2013) noted that the adoption has been slow due to resistance to change, inadequate ICT infrastructure and lack of qualified personnel.

ICT is taking over the construction process, right from the inception to the completion (Onyegiri, Nwachukwu and Onyegiri, 2011). This arose from the need to be more client oriented, large data being transferred and the competitive nature of the industry (Weippert, Kajewski and Tilley, 2003; Peansupap and Walker, 2005). Apart from the hardwares, internet and the World Wide Web (WWW) been used by the Nigerian construction industry, some commonly used softwares include Autocad, Archicad, Studiomax 3D, Revit, BIM, Primavera and Microsoft Office programs (Onyegiri *et al.*, 2011). Other innovative tools have been developed but are not frequently in use in the industry. For example, Menzel *et al.* (2006) developed an innovative tool of e-resource sharing tool for sharing idle resources among construction companies. Appropriate software packages and organizational information systems for African settings must thus be developed locally, even if a foreign package can be used as a starting point for adaptation (Heeks, 1999). The huge nature of the industry calls for more indigenous software applications and web based technologies to tackle the challenges facing the Nigerian construction industry from design to the construction phase.

According to the United Nations Educational, Scientific and Cultural Organization, UNESCO (2003) education helps in developing the knowledge and skills needed for a sustainable future. Therefore, the built environment education required for the management and administration of the Nigerian construction industry in the twenty-first century calls for diverse skills required in achieving optimum goals (Ameh *et al.*, 2010; Afolabi *et al.*, 2016). Skills emphasizing entrepreneurship, workplace skills, competency skill, softs skills (Chapman, 2004), craftsmanship, occupational health and safety administration, OSHA (Afolabi *et al.*, 2016) and ICT skills can help satisfy the needs of the industry. The effective management of construction projects calls for continuous improvements of skills required such as software development. Construction students can be armed with programming skills with the knowledge of the construction process to produce cost effective, user friendly construction softwares.

Momodu *et al.* (2007) defined the software industry as a relatively low-investment, environmentally friendly, high-growth global industry. Osofisan and Osunade (2005) noted that the Nigerian software development sector of the ICT sector is on the rise. But, a huge gap still exist due to the dependence on foreign softwares used in different Nigerian industries (Asaolu, 2012). According to Misra (2015) apart from the local consumption that can be provided for by indigenous software development, Nigeria can become a Global Software Development (GSD) location due to its language, high youth population trained in IT disciplines and the reduced cost of producing software products. Momodu *et al.* (2007) opined that if the industry is properly managed it can result in economic boom and engender sustainability for the nation. It is hoped that in the years to come, Nigeria will become an offshore software outsourcing destination (Osofisan and Osunade, 2005; Momodu *et al.*, 2007; Misra, 2015). This can be achieved through proper funding/management, staff training, curriculum review, student involvement and academia-industry cooperation (Asaolu, 2012).

METHODOLOGY

The empirical nature of the study employed the use of a cross-sectional survey design using the instrument of questionnaire to obtain data. The study location was carried out in Lagos state, which is one of the most technologically advanced cities in Nigeria. Lagos State also has the largest ICT (hardware and software) market domiciled in Ikeja referred to as Nigeria's Silicon Valley. Through a convenient sampling method, a sample size of sixty (60) educationists comprising of architects, builders, quantity surveyors and civil engineers in the built environment were contacted for the study. However, a total of thirty (30) questionnaires were returned and carefully scrutinized that they did not have any form of error. Non probability convenience sampling method was adopted; this is a sampling method according to Teddlie and Yu (2007) and Collins *et al.*, (2007) that involves choosing from a sample that is not only accessible but the respondents are willing to take part in the study. The data obtained were analyzed using SPSS v21.0. Descriptive and Inferential statistics test of Mean, Factor Analysis, One-way ANOVA and Intra-Class Correlation coefficient were used for the study.

FINDINGS AND DISCUSSION

In this section, the study examined the factors that engender learning of software development courses in the construction curriculum, examined the significant barriers to the integration of software development courses in the construction curriculum and identified the benefits of integrating software development courses in the area of resource management in the construction curriculum.

Factors that engender learning of software development courses in the construction curriculum

Literature identified nineteen (19) factors affecting the learning of indigenous software development in construction education and thus assessed by the use of Component principal analysis (CPA) also called factor analysis. From the analysis as shown in Table 1, the KMO and Bartlett's test of sphericity show good factorability features.

Table 1. KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.217
Bartlett's Test of Sphericity:	
Approx. Chi-square	517.282
Degree of freedom	190
Significant level	0.000

The Bartlett's test of sphericity gave a chi-square value 517.282 at 190 degree of freedom, significant at 5%. This shows correlation among the identified factors, hence a supportive criterion for factorability. CPA indicates 6 components (out of the 19 possible components) with Eigen value of at least 1. The first component has an Eigen value of 7.827 while the sixth has 1.073. These are the variation each of the linear components can explain. The percentage of variance explained by each of these components is given in the third column while their cumulative is in the fourth column. The first component explained the highest variation of 41.197% while the last explained 5.646%. Altogether, the sixth explain 86.774% variation by their linear components.

Table 2. Total Variance Explained before and after rotation

Initial Eigenvalues	Extraction Sums of Squared Loadings	Rotation Sums of
1	7.827	41.197
2	3.145	16.553
3	2.145	10.971
4	1.573	8.031
5	1.145	5.871
6	1.073	5.646
7	.827	4.231
8	.783	4.011
9	.727	3.731
10	.673	3.451
11	.627	3.231
12	.573	2.951
13	.527	2.731
14	.473	2.451
15	.427	2.231
16	.373	1.951
17	.327	1.731
18	.273	1.451
19	.227	1.231

							Squared Loadings(a)
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	7.827	41.197	41.197	7.827	41.197	41.197	6.503
2	2.661	14.003	55.200	2.661	14.003	55.200	5.215
3	2.160	11.368	66.568				
4	1.483	7.804	74.372				
5	1.284	6.755	81.127				
6	1.073	5.646	86.774				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Kaiser's criterion suggests the extraction of 6 factors, but 6 factors are too many given the communality of the components. However, scree plot was resorted to and rotated 3 factors with point of inflection showing Eigen values of above 2.

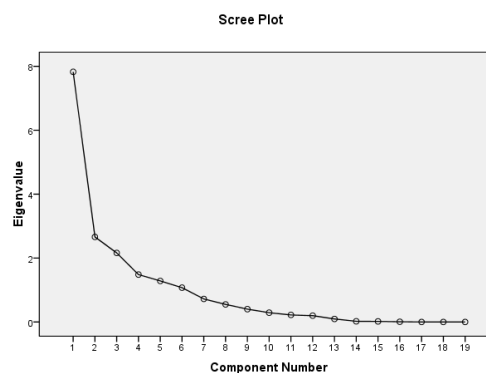


Figure 1. Scree plot

The items are loaded at different degree on each of the variables, but item(s) with high loading is/are considered (item with highest coefficient and those close to that with same theme).

On the first component, academic management support, software development trained personnel and training software packages were highly loaded while on the second component, availability of internet connection, availability of personal computers and teaching methods were highly loaded. On the other hand, funding, government support and curriculum review responsibilities were the highest loading co-efficient on the third component. The highest loading items on the same components therefore suggests factor's name to be given to such component, and in line with this, the three components obtained in this analysis are named thus; 1) Teaching support factors, 2) Learning support factors, 3) Regulatory support factors.

Table 3. Rotated Component Matrix

	Component		
	1	2	3
Academic management support	.904		
Software Development trained personnel	.892		
Training software packages	.850		.329
Student involvement	.818		
Knowledge of the construction process	.745	-.390	
Interest of Construction Students	.733	.302	
Academic-Industry cooperation	.727		
Programming language to be used	.692	-.360	

Needs of the construction industry	.681	-.437	.330
Funding	.575		.533
Construction curriculum review	.572	-.365	.496
Curriculum Regulators	.520	-.504	
Availability of Internet connection	.666	.675	
Availability of Personal Computers	.319	.638	
Teaching methods	.499	.544	
Increased patronage of few local software	.323	-.418	
Foreign software	.475		-.655
Previous ICT skills of students	.441		-.635
Government Support		.386	.486

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

The three (3) main factors derived for Table 3 are discussed;

Factor 1: Teaching Support factors – The teaching support factors are defined as those factors necessary to aid the teaching delivery methods to the students either via the lecture environment or lecture instruments to be used. Factors such as academic management support, software development trained personnel and training software packages are considered under this category. The academic management support could come in form of well-equipped computer laboratories, provision of up-to-date training software packages and trained personnel. The trained personnel must be up-to-date in the knowledge of recent software packages. Idowu and Esere (2013) stated that most institutions lack computer literate teachers and ICT experts that would support and manage the internet connectivity and/or application of computing in the teaching-learning process. Having a suitable teaching support system would help ensure that the students adequately grasp the concept of software development in the higher institution environment. In addition, the limited training software suitable for this climate is a factor that should be considered. Aduwa-Ogiegbaen and Iyamu (2005) noted that due to the differences in education standards and requirements, the foreign softwares do not integrate into curriculum across countries. Software that is appropriate and culturally suitable to the Nigerian education system is in short supply. There is a great discrepancy between relevant software supply and demand in developing countries like Nigeria (Aduwa-Ogiegbaen and Iyamu, 2005).

Factor 2: Learning Support factors – The second category of supporting factors engendering learning of software development courses in the construction curriculum are based on the variables such as availability of internet connection, availability of personal computers and teaching methods. These are facilities that aid the student in learning of software development. According to Oyovwe-Tinuoye and Adogbeji (2013), in Nigeria, most ICT facilities are not sufficient to enhance quality education to learners and teachers, even where it exists there are not sophisticated enough to stand the test of time like the ones acquired in developed countries. Nwosu and Ugboho (2012) stated that problems of quality and lack of resources are compounded by the new realities faced by higher education institutions battle to cope with every increasing student's numbers.

Factor 3: Regulatory Support factors – This category comes about from the variables of funding, government support and curriculum review. Essentially, it requires the collaboration of the academic institution and the government through the national commission to ensure the take-off and the continuity of the programme. Software development is heavily capital intensive in the short term and therefore the issues of funding needs to be adequately catered for. According to Uzodinma (2015) experts have argued that emerging indigenous software companies are not effectively being encouraged. They believe that the government must guarantee their survival by charging them with the responsibility of either coming up with their own solutions or demonstrating that they can develop or implement software solutions proposed by the government. The overall educational system is under-funded (Taiwo, 2004) therefore available funds are used to solve more urgent and important survival needs by the institutions. Oyovwe-Tinuoye and Adogbeji (2013) suggested that funding and maintenance of the ICT tools should not be neglected or politicized. The institutions management must be interested and fully involved in implementation and maintenance of ICT equipment and the Internet connectivity. Idowu and Esere (2013) opined that adequate funding is necessary for tertiary education in general and development of ICT in particular. To this end, government should increase funding for the entire educational sector. Government can play several roles in support of the development of software exports and in the application and diffusion of software or ICT in private sectors of the economy. For

example, Momodu et al. (2007) suggested that government can create of a supportive regulatory environment for telecommunication and internet; protection of intellectual property rights; targeted investments in software education and research; and broad promotion of ICT literacy programmes and action that would promote long-term progress in both domestic and export activities.

Barriers to the integration of software development courses in the construction curriculum

A one-way between-groups analysis of variance was conducted to compare the means between the four (4) groups used in the study on barriers to the integration of software development in construction education. The test was to examine the effect of each group on the listed barriers. The decision rules that when p value < 0.05 , the listed variable(s) is termed significant and vice versa. Table 4 revealed the ANOVA results on barrier to the integration of software development in construction education. This is inferred from their p -value which is less than 0.05 (5% level of significance), signifying they are significant. From the twenty-three (23) variables identified in literature, the variables of poor delivering method, poor internet connectivity and low patronage of indigenous software are significant. In Nigeria, there are few Internet providers that provide internet gateway services to Nigerians. According to Aduwa-Ogiegbaen and Iyamu (2005), many of these companies provide poor services to customers who are often exploited and defrauded with the few reputable companies, which render reliable services charging high fees thus limiting access to the use of the Internet. Uzodinma (2015) argued that a serious problem affecting the Nigerian software industry is the lack of believe in locally made software in that government and IT companies have not done much to show they believe in the ability of their citizens. For instance the Chinese government hires local citizens to build alternative to expensive unaffordable software systems, aiming to produce a cheaper one for its citizens. This raises the morale of the youths who are in the industry or aspiring to join the industry as they are certain there is an available job and market for them. Kwacha (2007) noted that, the most common problems associated with the effective implementation of ICT are lack of qualified ICT personnel, cost of equipment, management attitudes, inconsistent electric power supply, inadequate telephone lines, particularly in rural areas and non-inclusion of ICT programmes in teacher's training curricula and at the basic levels of education. Pelgrum (2001) stated that the obstacles for ICT implementation include the following: Insufficient number of computers, teachers' lack of ICT knowledge/skills, difficult to integrate ICT to instruction, scheduling computer time, insufficient peripherals, not enough copies of software, insufficient teacher time, not enough simultaneous access, not enough supervision staff and lack of technical assistance. In addition, Lewis and Smith (2002) summarized these barriers as limited equipment, inadequate skills, minimal support, time constraints and the teacher's own lack of interest or knowledge about computer. Majorly, it is evident that the tools and the encouragement is lacking in the system which are major barriers to the integration of software development in the construction education.

Table 4. ANOVA results on barrier to the integration of software development in construction education

		Sum of Squares	df	Mean Squar e	F	Sig.
Low interest from students	Between Groups	.833	3	.278	.609	.615
	Within Groups	11.867	26	.456		
	Total	12.700	29			
Inadequate curriculum to cover the area	Between Groups	.933	3	.311	.436	.729
	Within Groups	18.533	26	.713		
	Total	19.467	29			
Lack of software development trained staff	Between Groups	.183	3	.061	.171	.915
	Within Groups	9.283	26	.357		
	Total	9.467	29			
Lack of tools and practical facilities	Between Groups	.983	3	.328	.711	.554
	Within Groups	11.983	26	.461		
	Total	12.967	29			
Low commitment from stakeholders	Between Groups	2.633	3	.878	1.324	.288
	Within Groups	17.233	26	.663		
	Total	19.867	29			

Insufficient time to acquire knowledge	Between Groups	1.683	3	.561	.366	.778
	Within Groups	39.817	26	1.531		
	Total	41.500	29			
Poor funding	Between Groups	1.933	3	.644	1.855	.162
	Within Groups	9.033	26	.347		
	Total	10.967	29			
Emphasis on Theory	Between Groups	3.000	3	1.000	1.408	.263
	Within Groups	18.467	26	.710		
	Total	21.467	29			
Inability to communicate skills to the students	Between Groups	2.583	3	.861	1.557	.224
	Within Groups	14.383	26	.553		
	Total	16.967	29			
Inability to quickly grasp the knowledge	Between Groups	3.833	3	1.278	1.255	.310
	Within Groups	26.467	26	1.018		
	Total	30.300	29			
Tedious nature of programming	Between Groups	3.533	3	1.178	1.204	.328
	Within Groups	25.433	26	.978		
	Total	28.967	29			
Inability to understand its importance	Between Groups	2.200	3	.733	1.771	.177
	Within Groups	10.767	26	.414		
	Total	12.967	29			
Epileptic power supply	Between Groups	3.250	3	1.083	2.757	.063
	Within Groups	10.217	26	.393		
	Total	13.467	29			
Low patronage of Indigenous softwares	Between Groups	3.567	3	1.189	5.330	.005
	Within Groups	5.800	26	.223		
	Total	9.367	29			
Insufficient book materials on programming	Between Groups	.933	3	.311	.488	.693
	Within Groups	16.567	26	.637		
	Total	17.500	29			
Poor internet connectivity	Between Groups	9.733	3	3.244	4.190	.015
	Within Groups	20.133	26	.774		
	Total	29.867	29			
Dominance of foreign softwares	Between Groups	7.333	3	2.444	1.890	.156
	Within Groups	33.633	26	1.294		
	Total	40.967	29			
Low government support	Between Groups	.633	3	.211	.236	.870
	Within Groups	23.233	26	.894		
	Total	23.867	29			
Poor ICT skills of students	Between Groups	.283	3	.094	.106	.956
	Within Groups	23.183	26	.892		
	Total	23.467	29			
Lack of personal computers	Between Groups	6.983	3	2.328	1.755	.180
	Within Groups	34.483	26	1.326		
	Total	41.467	29			
Rigidity of the Construction curriculum	Between Groups	4.983	3	1.661	1.281	.302

	Within Groups	33.717	26	1.297		
	Total	38.700	29			
Insufficient knowledge of the construction process	Between Groups	4.533	3	1.511	.930	.440
	Within Groups	42.267	26	1.626		
	Total	46.800	29			
Poor teaching delivering methods	Between Groups	8.733	3	2.911	3.772	.023
	Within Groups	20.067	26	.772		
	Total	28.800	29			

Benefits of integrating software development courses in the area of resource management

This section identified benefits of integrating software development courses in the area of resource management. The variables identified includes increase self-employment of students, boost self-sufficiency and self-reliance of students, increase the knowledge of construction process to the students, improve process of resource management, improve employability of students, higher productivity of the construction industry, diversification of the nation's economy, enrich the construction curriculum, reduce reliance on foreign softwares, increase entrepreneurship instincts, sustainability of the construction industry, improve supervision on construction sites, increase business opportunities, technological Improvement, increase Innovation and creativity, increase accountability and transparency in resource management and reduce waste generated during resource management. The study tested the hypothesis;

H₀: there is no significant difference about the benefits of integrating software development in the construction education.

H₁: there is no significant difference about the benefits of integrating software development in the construction education.

Kruskal wallis was used to test the significance difference of professional background on benefits of software development in construction education as presented in Table 5.

Table 5. Kruskal Wallis test for difference about the benefits of integrating software development

Benefits of integrating software development	
Chi-square	3.589
Df	3
Asymp.Sig	0.309

The table shows that there is no significant difference among construction professionals on the benefits of integrating software development measures at 95% confidence level. This implies that educationists in the fields of civil engineering, building technology, architecture and quantity surveying have the same perception about the benefits integrating software development in the construction education. Where p value > 0.05. Thus, the null hypothesis which states that there is no significant difference about the benefits of integrating software development in the construction education is accepted and the alternative hypothesis is rejected. According to Uzodinma (2015), in every nation, the importance of computer software industry in the development of the nation cannot be overemphasized. The fact that 70% of world's programmers are below 35 years shows that the youth are very important in this industry. Improving the quality of education and training is a critical issue, particularly at a time of educational expansion. ICTs can enhance the quality of education in several ways; by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training (Haddad & Jurich, 2002).

CONCLUSION AND RECOMMENDATION

The aim of the study was to examine the integration of software development courses in the construction curriculum. The study revealed that the factors that engender learning of software development courses in the construction curriculum can be categorized into three (3) main factors namely teaching support factors, learning Support factors and the regulatory support factors. The teaching support factors are factors such as academic

management support, software development trained personnel and training software packages while the learning support factors are availability of internet connection, availability of personal computers and teaching methods. The regulatory support factors were from the variables of funding, government support and curriculum review. The study revealed that poor delivering method, poor internet connectivity and low patronage of indigenous software are significant barriers to the integration of software development courses in the construction curriculum. The study revealed that there was no significant difference among construction professionals on the benefits of integrating software development courses in the construction curriculum. All professions require one software or the other to function. The level of ICT development has found its way to all spheres of life. Therefore, the dire need to tap into the unlimited resources of software development especially the indigenous one. The study recommended the speedy integration of software development courses in the construction curriculum, carefully aided with adequate teaching and learning facilities. The study posits that with the internet age students it may be easier to grasp the knowledge of coding, programming and software development in that may be applicable to the area of study or profession. In addition, government should support and patronize locally developed software in order to aid the growth of the industry in the sub Saharan Africa.

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Integration of Landscape Analysis and Assessment Methods, into Vocational Education Processes of Design and Planning Disciplines, by using R & D Projects

Gül Ash Aksu

*Istanbul Commerce University,
Faculty of Architecture and Design,
Department of Architecture, Turkey
gaksu@ticaret.edu.tr*

ABSTRACT

It is becoming increasingly important to support undergraduate and graduate levels of vocational disciplines with research projects that have the design and planning authority related to the environment such as Landscape Architecture, Landscape Planning, Architecture, Interior Architecture, Urban and Regional Planning. Particularly, these disciplines, which will have a role in design, planning and management processes of rapidly changing landscapes, need to educate their students who can approach realistic problems with current technology and methods. The acquisition of this properties is possible by integrating both individual and institutional research projects into the education system.

In this study, two research projects titled "Istanbul-Besiktas District an Ecological Planning Approach for an Urban Landscape Plan and Implementation Strategy", related to an urban landscape and "Generating Strategies for Assessing Natural and Cultural Structure Potentials of Bilecik Province, Osmaneli District" focused on a rural landscape, were evaluated in this context. Firstly, analysis and evaluation methods and outputs of these projects were shared with students by organizing workshops, course presentations and conferences. Thereafter the effect of the educational process was discussed.

As a result, findings from the research projects have made it possible to discuss basic concepts such as sustainability, holism, interdisciplinary study, public and stakeholder participation through real problems and transfer them to undergraduate and graduate level students. This approach shows that it is likely to improve the quality of education in institutions that provide vocational training for environment-related practice.

Keywords: *Design education, Holistic approach, Sustainability, Transdisciplinary process, Applicable recommendations, Research- and development- projects*

INTRODUCTION

Balances established in ecosystems over a very long time, seem to deteriorate very fast and are sometimes difficult to recycle because of interventions for use. These deteriorations are not only aesthetic overall, but also cause serious problems economically and threatens human health. Since environmental problems have reached a globally influencing dimension, "Environment" and "Sustainability" are the main agenda items of support programs of the European Union and the United Nations. From this point, it is a national even international responsibility to taking into consideration environmental potentials in the direction of sustainability principles (Aksu, 2014). Moving on from this responsibility, there is a need for handling the concept of sustainability versatile and to incorporate it into the education model, especially into design education. Therefore, the concept of "sustainability" has been considered as a general framework in the research.

Design is a concept that comes to mind in many places. As it is used in scientific or artistic fields such as architecture, industrial design, landscape architecture, painting, sculpture; it is also pronounced in everyday life. Design action is a plan, a fiction, a preliminary work to be carried out later (Aybar, 2003). Design, is a dynamic process. Shaped by real sustainable systems; design has the potential to change functions of buildings, communities and societies. Design has the power to meet needs and to add value (Williams, 2007).

Design is the deliberate shaping of matter, energy, and process to meet a perceived need or desire. Design; is a link that inevitably links cultures and nature through the exchange of materials, energy flows and land-use

preferences. When assessed from many different perspectives, it can be said that the environmental problem is actually a design problem. It is a result of how things are made, how buildings are built, how landscapes are used. Design reveals culture and culture is based on what is believed to be true about the world. Current agriculture, architecture, engineering and industrial styles derive from the theory of design knowledge, which is incompatible with nature. A blind design concept wastes energy and resources. A blind design concept is polluting is exaggerated and extremely dangerous. Unfortunately this understanding is spreading (Van der Ryn and Cowan, 1996). Miller et al. (1998) point out that the most complex challenge is to make social and cultural frameworks that allow people to optimally meet their needs without introducing social and environmental challenges for the future.

When design is considered from this point of view, it should not be evaluated independent from the environment. The design concept can be summarized as a change of environment in direction of certain purposes and environmental components should not be ignored for the sake of pure aesthetic purpose. Also sustainability is not an approach which tries to correct the deteriorated relations of an environment by design. It is of utmost importance that this awareness is placed on the educational approaches of the undergraduate level design disciplines in which these seeds are introduced. “The design itself must be sustainable.” Prior to intervening in an environment, the natural-cultural components of that environment must be considered, and the components that come to the forefront in determining the identity values of that environment must be examined in a holistic approach.

In this context, a contemporary concept of design is evolving to meet the problems and needs of current usages. According to Yeang (2012), ecodesign is able to fill important gaps in protection-utilization relations. Ecological design or eco-design is to design the built environment and lifestyles in a harmonious and perfectly integrated manner in accordance with ecological design principles and strategies, to integrate the natural environment in which the biosphere is located that hosts all the life forms on earth.

Taking into consideration these features it can be said that design education needs real problems for applicable design solutions, reasoning, a holistic view, and actual information about design processes.

To make designs applicable and to be able to evaluate relations between the space and ecological - sociological structure in a sustainable way, there is a need for holistic approach tools. It has to be known how a holistic approach can affect designs (Aksu, 2014).

As a pioneer landscape planner Ian McHarg (1992) stated his opinion as follows: “There is a creative - suitable - healthy environment available. What are its components? All these must be known to design a city for human”. Zev Naveh (2001) identifies ‘Multifunctional Landscapes’ considered as ‘Gestalt Systems’ interacting in a concrete, complex, natural, and cultural sense. They need to be studied, upscaled, managed and evaluated with the biperspectivable systems view, from the smallest mapable ecotope to the global ecosphere landscape.

A holistic design approach can only emerge in the context of sustainability. The Brundtland Report (WCED, 1987) ‘Our Common Future’ was defining Sustainable Development as: ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ and the three components of sustainability are Ecology (Environment), Sociology (Society) And Economy (Resource).

Holistic approaches show that the sum of the components of the systems is more than the whole system (Bailey, 2002).

When the basic components of sustainable development are matched with a holistic design approach, it can be seen that the relationships and interactions occur around an environment, society, and space triangle (Figure 1).

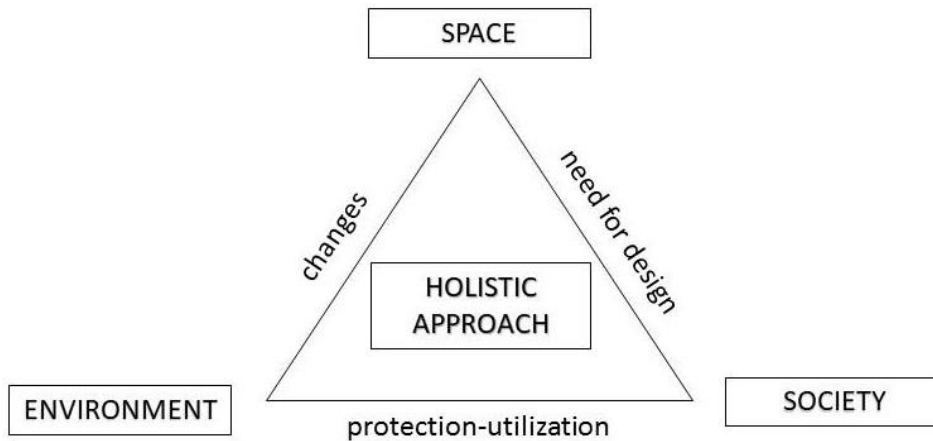


Figure 1: Holistic approach components and interactions.

Space – Environment relations give outputs about the changes in space, Environment – Society relations are important to interpret the protection-utilization balance, and Space – Society relations are important to find out the needs for using the space also the need for design.

Figure 2 shows the environment, which is the subject of planning and design in a transdisciplinary manner, and is located at the intersection of natural, social, and applied sciences.

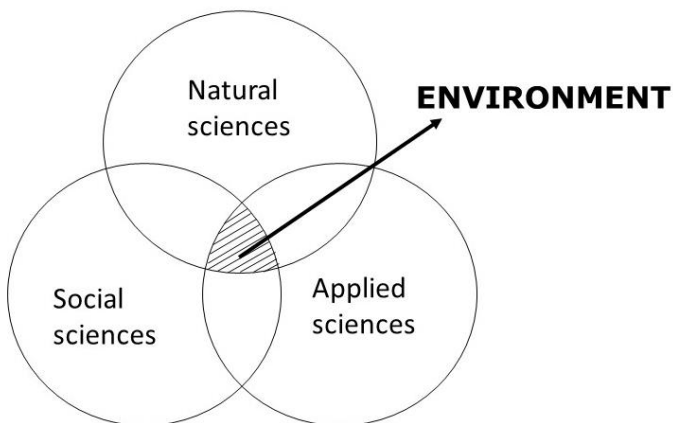


Figure 2: The environment is located at the intersection of natural, social, and applied sciences.

Depends on research topics and goals, many disciplines like landscape planning, sociology, ecology, history, biology, wildlife management, geography, urban planning, architecture, geomatic engineering etc. can be involved in this structure. The environment should be considered as a transdisciplinary object and this approach ensures that findings are deeper and more comprehensive.

The holistic and interdisciplinary sustainable design approach, which is very important in terms of protection and healthy use of the environment, needs to be transmitted and made into a habit while still at the undergraduate level. In order to ensure this flow, especially in applied courses, it is important for students to meet with defined areas in terms of their natural-cultural values. This meeting allows the design question to be interpreted and addressed within the framework of the approaches mentioned above. The presence of research and development projects focused on the analysis, planning and management of the environment being considered facilitates the selection of areas that may be design subjects.

The aim of this research is to examine the consequences of a holistic and interdisciplinary educational approach that focuses on sustainability issues for students at undergraduate level in environmental design and related professions. This article focuses on the contributions of two research and development (R&D) projects, on

undergraduate degree design studios of Architecture and Interior Architecture departments of the Istanbul Commerce University, Faculty of Architecture and Design. One of the projects focuses on urban and the other one on rural planning and management subjects. The research question is: “How can the interaction between R&D projects and undergraduate design studios affect the quality of education?”

MATERIAL

The outputs of two R&D projects are reflected into undergraduate-level design studios.

1- Urban Area (Istanbul-Besiktas): “Istanbul-Besiktas District an Ecological Planning Approach for an Urban Landscape Plan and Implementation Strategy”

Goals of the project:

- To put forth the landscape pattern and spatio-temporal landscape changes,
- to determine the green system and inconveniences,
- to identify important species living in an urban area,
- to identify important urban habitats, to find out relationships between the effects of urbanization on the user profile and the historical and cultural structures.
- implementation of strategies and design proposals based on the relationship of artificial surfaces to living environments like green bridges, vertical gardens, biological ponds, sustainable urban equipment, and furniture’s
- the establishment of an «Urban Landscape Plan» as a result of the evaluation
- to promote environmental awareness
- to create material for environmental education
- to contribute public participation

Contributing proficiencies:

- Landscape Planning,
- Geomatic Engineering,
- Architecture,
- Interior Architecture and Environmental Design,
- Ecology and Wildlife Management,
- Urban and Regional Planning,
- Geography,
- Forestry

This transdisciplinary approach has ensured comprehensive information about the research area.

2- Rural Area (Bilecik-Osmaneli): “Establishment of Strategies for Assessing Cultural and Natural Structure Potentials in Osmaneli District of Bilecik City”

Goals of the project:

- To define cultural heritage and cultural assets,
- to identify natural values,
- to identify socio-economic structure,
- to determine socio-cultural characteristics,
- to evaluate natural and cultural potentials,
- to determine sustainable tourism strategies that will play a role in the local development
- to define strategies to promote and share the results achieved by the project

Contributing proficiencies:

- Landscape Planning,
- Architecture,

- Interior Architecture and Environmental Design,
- Ecology and Wildlife Management,
- Urban and Regional Planning,
- Geography,
- History,
- Archeology,
- Meteorology and Climatology,
- Forestry

METHOD

To evaluate the urban and rural landscapes in a holistic and sustainable manner a set of multi-componential methods are used for the R&D projects. Figure 3 shows the framework.

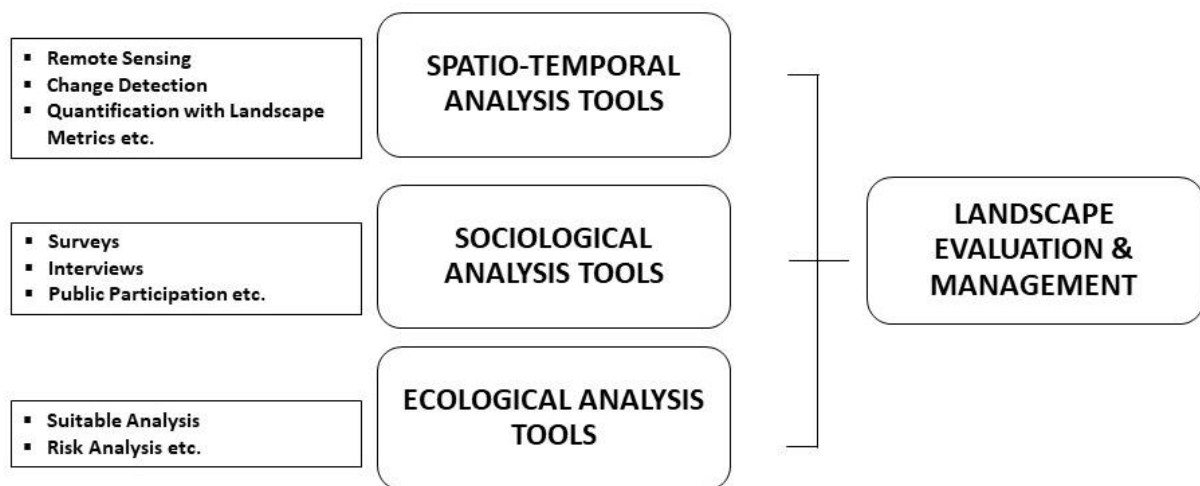


Figure 3: The framework of the methods of R&D Projects (Berg, 2001; Collins et. al, 2001; Darmstad et. al, 1996; Farina, 1998; Forman and Godron, 1986; Haines-Young, 2005; Harker and Vargas, 1987; Kutzenberger, 2001; Leitao et. al, 2006; Li, 1989; McGarigal, 2002;Turner et.al, 2001).

By using this multi-componential research technique, the research areas with their specific natural and cultural characteristics could be considered, and the components constituting the ‘Identity Values’ of the settlement were able to be described in detail. The outputs of these transdisciplinary, holistic planning and development projects have been used for design studies of undergraduate architecture and interior architecture and environmental design programs.

The database accessed through the R&D projects is shared with the students for different scopes in related courses. The researchers involved in the R&D projects shared the research findings by giving conferences as well as they participated in field surveys of the students and guided them. In addition, the initiatives established between researchers and the local administrations have provided sponsorships for student studies, such as accommodation and/or transportation. Through on side surveys, students were able to find out about the on-site investigation of the research area and to ascertain real problems from the authorities.

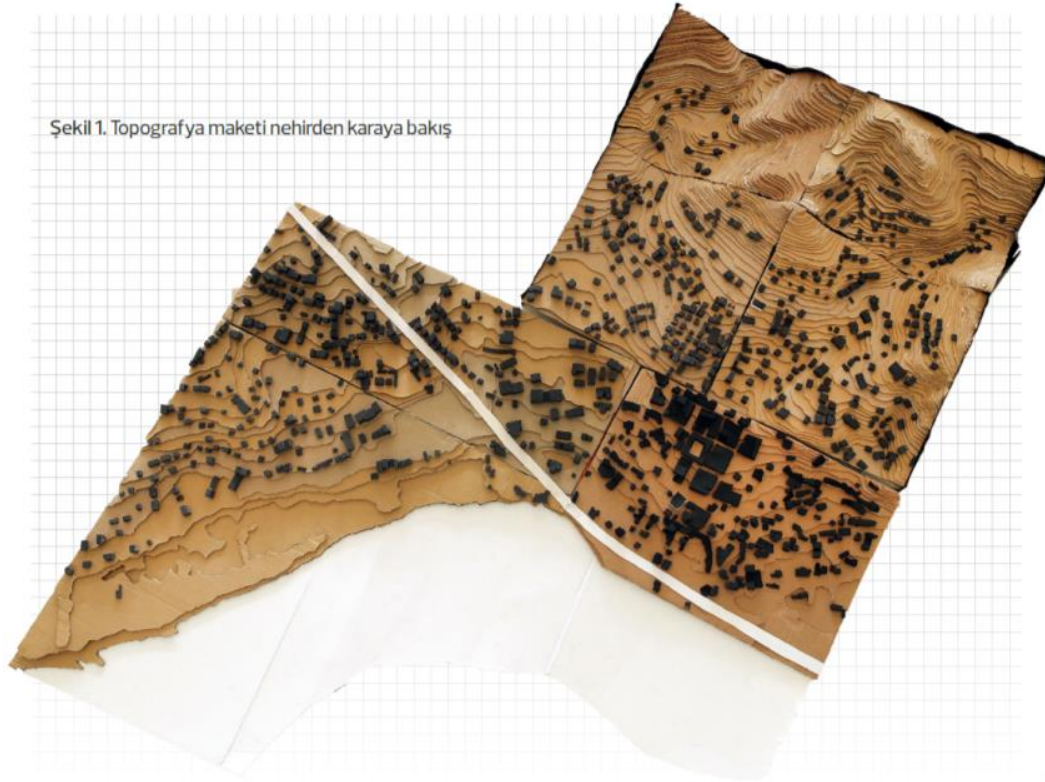
Undergraduate Design Studies Related with the R&D Projects (Figure 4):

- Design Studio 2
- Interior Architecture Studio 2
- Interior Architecture Studio 3
- Interior Architecture Studio 5
- Diploma Project

- Architecture Project 5
- Landscape Design Theories
- Landscape Planning
- Sustainability and Ecology
- Accessibility in Design
- Illumination Design



(a)



(b)

Figure 4: (a) The working group which is planning a recreation area for the Osmaneli Sakarya River side, in the scope of the Landscape Planning Course. (b) Osmaneli district centre land model built within the scope of the Design Studio 2 Course (Photo by Ersin Alok).

Workshops Related with the R&D Projects (Figure 5):

- Urban equipment that contribute sustainability
- Steps to introduce the city
- First step to urban identity

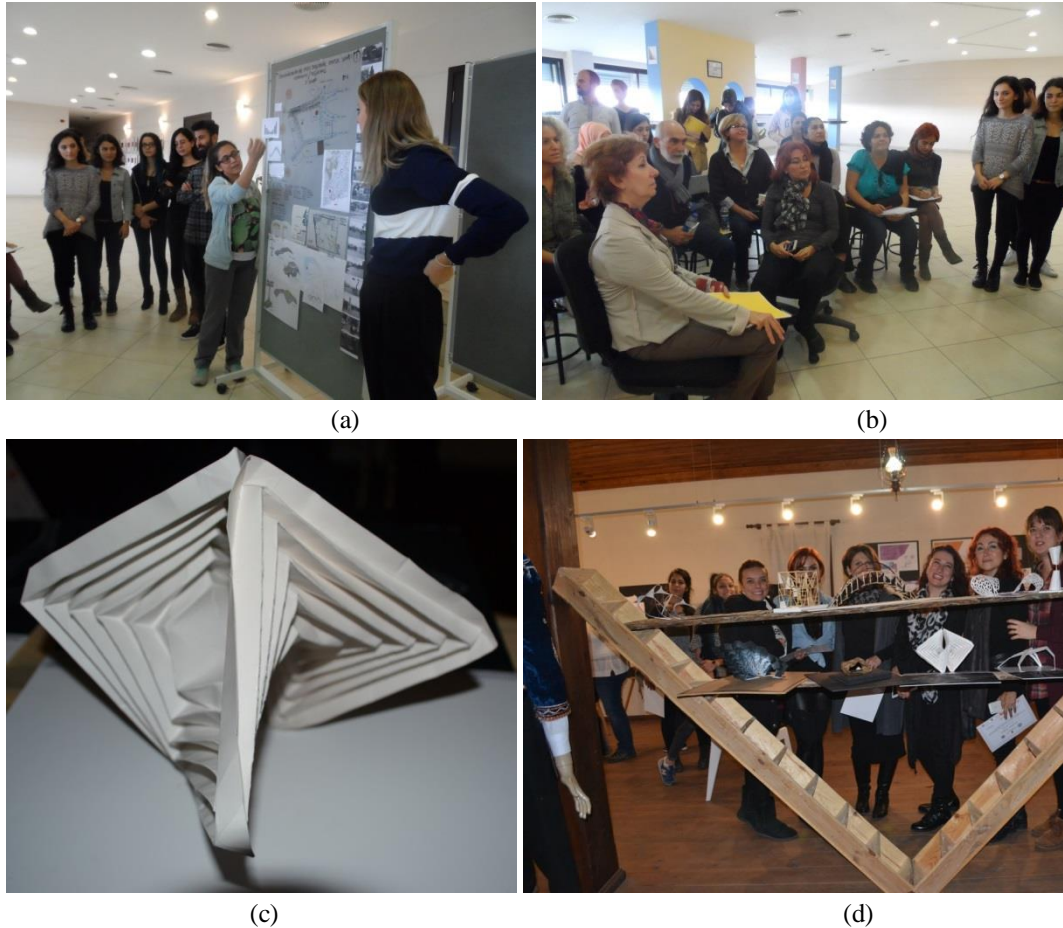


Figure 5: (a,b) Jury performance of working groups of “Urban equipment that contribute sustainability” Workshop. (c,d) Design recommendations of the “First step to urban identity” Workshop.

FINDINGS

- Research outcomes as well as design course studies were published as reports and books and presented for interested people (Aksu, 2015-a; Aksu, 2015-b, Aksu, 2015-c; Aksu, 2017-a; Aksu, 2017-b).
- Real problems have been reached by contacting the local government and the public.
- Comprehensive data sets have been achieved through On-site research
- Students have been integrated into the R&D projects.
- Under graduate students of design disciplines like landscape architecture, architecture, interior architecture, and industrial design, have had the opportunity to create holistic, realistic and applicable solutions to real problems by exploiting the research outputs.
- The students could examine the test area in different ways and assess the whole. They became familiar with the holistic approach by this means.
- Real user needs were achieved through stakeholder meetings, surveys and interviews conducted within the scope of the project.
- These outputs have contributed the production of realistic design solutions.

CONCLUSION

Considering the same area within the scope of the various courses ensured that more qualified and detailed data was attained, a healthy data source was established and so the analyses and evaluations became more realistic and applicable. This framework, contributed to the ability of students to incorporate reasoning skills into the design process and to make it easier to construct cause-effect relationships.

The holistic approach allows defining the identity values of the research area and gives important clues. The applicability of design decisions related to the holistic view is higher.

It is possible to obtain in-depth findings following an interdisciplinary approach.

It is much easier to bring the stakeholders involved in the field covered by a research project and it is more effective to imagine applications for design, such as workshops and design studios, by ensuring stakeholder participation.

Elbow contact with decision makers facilitates the flow of work.

Findings obtained by the research project will serve as a basis for design education as well as the design applications will put forward the research process. There is a mutual benefit.

Instructors who support their studies with research projects are more likely to transfer more current and realistic data to the design training.

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Integration of Social Innovation Creation in Higher Education: Case Study of Latvia

Andra ZVIRBULE

*Faculty of Economics and Social Development
Latvia University of Agriculture*

Gunta GRINBERGA-ZALITE

*Faculty of Economics and Social Development
Latvia University of Agriculture
gunta.grinberga@llu.lv*

ABSTRACT

The paper describes the role of social innovation in modern economies and presents a study of social innovation development in Latvia. The aim of the paper is to analyse opportunities how the creation of social innovations could be enhanced through higher education institutions to eliminate existing social problems and achieve higher standard of living in Latvia. The current research employed monographic method, analysis and synthesis as well as scientific induction and deduction methods to summarize the theoretical findings and basic guidelines of strategic documents. Extensive in-depth interviews with different areas social innovation implementers were conducted to promote a discussion on the problems how to integrate solving of social problems in higher education study programmes. The current research is a continuation of several related research projects implemented in scope of Latvian National Research Programme 5.2. EKOSOC-LV. The study shows that Latvian population is not ready to use opportunities of bottom-up approach giving preference to top-down approach, thus relying rather on the public participation scenario than on self-initiated scenario of social innovation creation. Interview results emphasized the need to integrate social awareness in higher education by strengthening the collaboration among universities, state institutions and enterprises, thus more efficiently involving students in searching solutions to currently existing social problems in Latvia.

INTRODUCTION

During the last decade, extensive discussions on social innovation initiatives and their enhancing in the EU Member States have taken place at the European Commission level. Social innovation has been promoted as the solution to the growing social needs, and as an innovative solution for those issues that require structural changes to promote the welfare of the population and more efficient use of financial resources. Although scientific literature analysis reflects many different views on the definition of the term “social innovation”, its role is gradually growing in the discussions on the EU policy priorities. This is evidenced by the fact that social innovation is one of the “Europe 2020” strategy’s seven flagship initiatives that the European Commission has drawn up to determine the national, European and international measures that would be implemented in the field of innovation in order to achieve the goals set by the “Europe 2020” strategy. Moreover, special attention to the social innovation is provided in scope of the European Union’s initiative “Innovation Union”, which emphasizes the need to incorporate social innovation support measures for the European Social Fund programmes in 2014-2020 (Dobele, Grinberga-Zalite, Kelle, 2015).

In 2014, researchers from several Latvian higher education institutions were involved in a national research project “Involvement of the Society in Social Innovation for Providing Sustainable Development of Latvia (EKOSOC-LV)”. This project was aimed to elaborate appropriate methodology and fundamental basis for conducting the empirical research to identify the specifics of social innovation processes in public for further development of a model that would enhance the involvement and collaboration of social players in social innovation. In the project, active collaboration of four important social innovation parties – society, policy makers, entrepreneurs and higher education institutions. In the phases of the project, the project researchers conducted studies on the development of social innovation in various industries, on promotion models of social innovation and conducted benchmarking studies on successful innovation development abroad as well as the role of higher education institutions (HEIs) in enhancing social awareness that is an important prerequisite for the developing social innovation in Latvia. The aim of the research was to analyse the problems of integration of social innovation creation in higher education studies. The specific research tasks were: 1) to reveal the importance of social

innovation for the overall economic development; 2) to describe the problems of society's passiveness for social innovation creation in Latvia; 3) to analyse opportunities for integration of social innovation in higher education based on the example of Latvia University of Agriculture.

The research employed monographic method, the methods of analysis and synthesis, for the theoretical discussion. The empirical research data were obtained by conducting a public survey of social project implementers in Latvia (n=104).

THE STUDY

Social innovation is innovative activity and /or service, motivated by goal – to meet a social need. The main difference between commercial innovation and social innovation lies in the fact that behind commercial innovation there is always a concrete target and profit oriented investor, whereas the beneficiary of social innovation is the society as a whole. If the main aim of innovation is not the welfare of society, then it cannot be regarded as social innovation. Moreover, the promotion of social innovation is much more complicated as it requires different and diverse set of support resources, including policy makers' recognition and support, and often volunteering and charity (Mulgan, Landry, 1995).

Sometimes social innovation occurs unplanned as a consequence of scientific and technological progress (e.g. worldwide web, open source software), but sometimes it can even result of violence acts (e.g. Amnesty International). However, nowadays social innovation mostly occurs due to necessary changes in developed societies. Modern society alongside with increasing welfare standards and overall economic development are exposed to various negative side-effects of modern capitalism. For instance, technology-related side effects of progress, i.e. unemployment and social exclusion. Today in many spheres of our life technology can replace human labour, thus innovative solutions how to retain workplaces and socializing of people become a problem that needs to be solved. Also obesity is mostly the problem of developed societies – the abundance of food and lack of physical activities owing to comfortable lifestyle have caused growing numbers of health problems. Thus, healthy food production and consumption nowadays is also a huge social problem, which requires multi-dimensional approach to this problem. At the individual's level, we can also mention public psychology problems in the developed societies (mental health), which are often caused by consumerism culture. Also these problems cannot be solved solely by individuals themselves. Moreover, such global problems as racism, culture clash and immigration today are social problems that cannot anymore be solved within the community, country or even a region – they need completely new, socially innovative solutions at a global scale.

The concept social innovation is closely linked with the social economy development, which is defined as a third sector among economies between the private and public sectors, which is based on democratic values, and seeks to improve social, economic and environmental conditions in a given society (Lukjanska, Cirule, 2014). In the European Union, the development of social economy is facing a number of challenges. Firstly, it is necessary to update the legislative enactments and regulations accordingly. Secondly, society and businesses still lack comprehension about the core idea and functioning of social innovation, thus there is low social recognition of this form of economic activity. Therefore, the European Commission has developed a number of policies, programmes and initiatives that have contributed to empowering citizens and organisations to address social issues (Social Innovation, s.a.), policy-makers explore ways to foster social innovation in order to achieve economic growth. The new European strategic framework for 2014-2020 focuses on intelligent, durable development, favourable to inclusion. This can be achieved by target-oriented state policy aimed at supporting social innovation because the main initiator of social innovation promotion is government that ensures particular support instruments (financial, legal, informative etc.) for promoters and implementers of social innovation (Dobele L., Grinberga-Zalite G., Kelle L., 2015).

Lately in Latvia, higher education institutions actively get involved in solving social and economic problems; and in authors' opinion, they already now have all the necessary resources and experience for creation of social innovation – intellectual capital and facilities. Liliana and Florina (2015) emphasize that educational system directly supports the creation of social innovation. The analysis of economic history gives evidence that the nations that meaningfully invested in their education system by broadening the access to preparation and by improving their educational and professional training standards have over time obtained the most spectacular and the most durable economic growths. This finding suggests that social awareness of each society individual is closely linked with higher education development and creation of social innovation. Consequently, higher education institutions today cannot be regarded just as isolated institutions that aggregate and transfer knowledge to students, but rather

the agents of changes (Liliana D., Florina, 2015; Dobele, Grinberga-Zalite, 2016).

Hence, in author's opinion, the current model of education in Latvia only partly ensures the transformation of intellectual and creative potential of humanity into such products that ensure the development of national economy. In the current model of education, the main focus is put on individual of society. It is positive that by shaping his/her abilities, the individual is able to independently and critically think, be creative, collaborate and adapt to various circumstances. However, in such model individual's social awareness turns out to be very low. The evidence for this assumption was also obtained in the public survey that was conducted in January 2017 in Latvia and involved 104 implementers of social innovation projects. As revealed in Figure 1, the main obstacle for society's involvement in social innovation creation was mentioned passiveness of society individuals and NGOs. Such attitude gradually can result in situation when the central values of the young generation are only associated with their personal success, welfare and self-actualization, which is achieved by accumulating wealth and getting power over others. However, today it is more important than ever to enhance young generation's social awareness of necessity to create such products and services that are needed in our society and are not in conflict with the principles of business ethics and sustainable development. Today sustainable development is connected not only with sustainable production issues but also with sustainable consumption, which is often less attractive for young generation as it does not give instant gratification compared with conventional products.

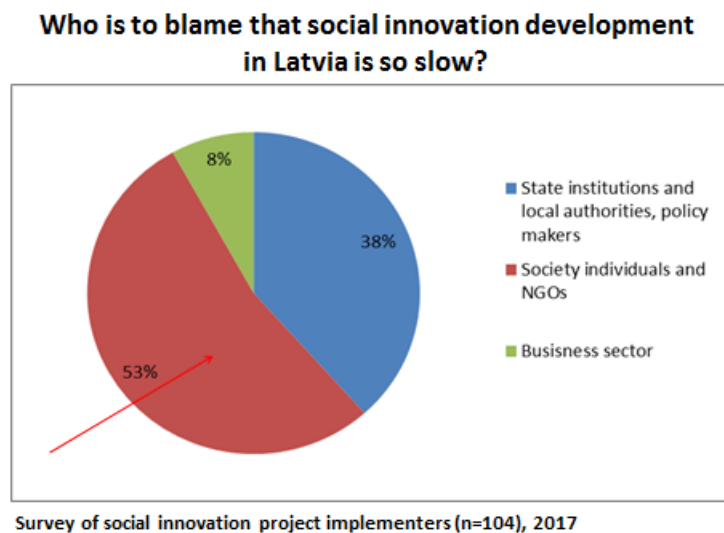


Figure 1: The reasons for low society's involvement in social innovation creation in Latvia

Source: authors' construction

Therefore, the task of higher education institutions is to develop and integrate in to study programmes such study courses that convince students of the topicality of corporate responsibility, increase their social awareness and responsibility for their country's overall development and welfare (Figure 2).

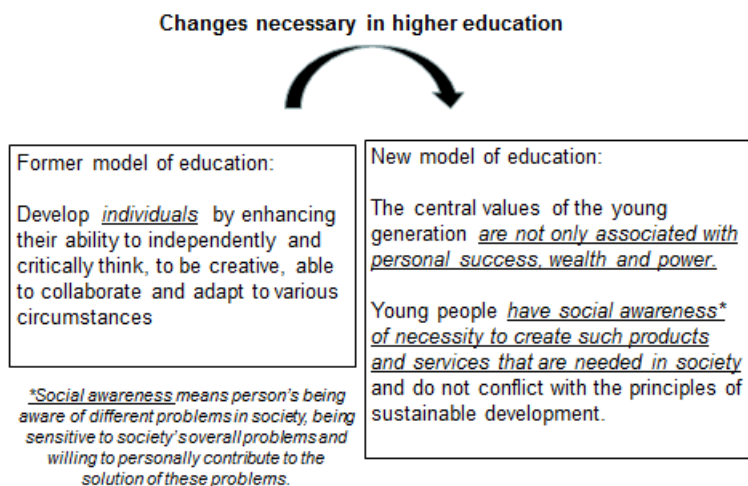


Figure 2: Changes necessary in the model of higher education in Latvia

Source: authors' construction

In higher education institutions, the one can often observe that first year students tend to replicate the viewpoints of their opinion leaders (family, friends etc.). Unfortunately, often the main interests of the becoming accountants are primarily focused on issues how to legally avoid taxes, while the becoming pharmacists are not interested in taking holistic care for peoples' health, but rather in becoming sales managers of pharmacy corporation and making profit for them thus earning good financial benefits for themselves. The becoming engineers and building constructors, in their turn, are not interested to stimulate building of safe and sustainable public buildings but to get high posts in public authorities to be able to make top deals with private sector and show personal power. Also in the eyes of becoming entrepreneurs and economists, participation in social projects is often not prestigious and is not taken seriously as a good practice. Thus, due to such attitude, social innovation development in Latvia is one of the lowest in the European Union (Dobele, Grinberga-Zalite, 2016).

In author's opinion, often students lack social awareness because they have not received a comprehensive and agile explanation of social innovation with convincing examples, case studies, and results. Due to the fact that commercial innovation offers instant gratification, often the benefits of social innovation just fade away. Moreover, social innovation attempts to replace undesirable behaviours with behaviours that require more effort, are less pleasurable or even unpleasant – reduction of personal benefits, increase in personal costs and achieve a social benefit, from which a person often receives no direct benefit. In order to better understand the passiveness, everyone should consider if we ourselves are ready to change our behaviour in such aspects as our comfortable lifestyle (e.g. reduce thermostat settings for saving electricity; give blood as a donor), spend more money on eco products (e.g. recycled paper), give up our personal leisure time (e.g. by working as a volunteer at animal shelter). There will be a number of justifications and excuses why we will not be able to do these things. Therefore, all social innovation projects should first of all be organized in such a way that they are fun, easy, and popular (Lee, Kotler, 2011). This regards also social innovation integration in higher education. In order to create a challenge and excite students with social innovation projects, first of all it is necessary to enable problem based learning approach. Problem-based learning (PBL) is a student-centred pedagogy in which students learn about a subject through the experience of solving an open-ended problem found in trigger material. Even though PBL does not always bring a clear and defined solution to the problem, it allows for the development of desirable skills and attributes (Schmidt et al, 2011). The personal experience of the authors shows that it is highly necessary to organize field work studies (e.g. visiting neglected areas, meeting with referent social groups), which requires additional financial resources (e.g. transportation facilities to the research objects are necessary). Moreover, it is highly advisable that students can practically meet with other already successful social entrepreneurs, which we are sorely lacking in Latvia. Unfortunately, currently for academic teaching staff it is much easier to teach

traditionally as except personal self-actualization, they often have no other motivation to be engaged in the process of enhancing social innovation creation (Grinberga-Zalite, Mazure, 2017). The case study of social innovation creation in Latvia gives evidence that in Latvia stakeholders of social innovation (Figure 3) use wait and see tactics, expecting a push from somebody else – local municipality, relevant ministry, Latvia Investment and Development Agency etc.

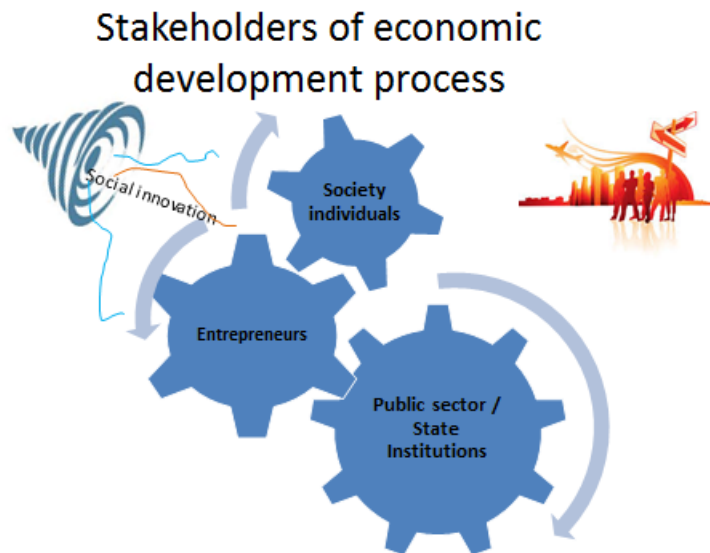


Figure 3: Collaboration of social innovation stakeholders for enhancing of economic development
Source: authors' construction

In order to enhance the comprehension of the role of social innovation, several HEIs in Latvia have already started to introduce in their study programmes such study courses as Social Entrepreneurship, Social Innovation, Social Marketing, Business Ethic, Bio-economics, Sustainability Studies etc. In all of these courses, problem based learning with case studies and field work is highly advisable and helps to better understand the topicality of the course subject. At Latvia University of Agriculture, social innovation issues are already integrated in all the above mentioned study courses that are included in bachelor and master's level studies. The first outcomes of the social innovation projects are successfully defended master's thesis "Opportunities of Social Marketing for Solution of Society Aging Problems in Latvia" and "Social Marketing Opportunities for Development of Socially Innovative Latvian Ethnography Souvenirs for Their Promotion in Jurmala Cultural Events", in which the main focus was put on searching for innovative ideas for social problems in Latvia.

CONCLUSIONS

Currently, there is low level of social awareness in Latvia and society lacks comprehension of the role of social innovation creation. The survey of 104 social innovation project implementers revealed that individuals of Latvian society and NGOs are the ones to be blamed for so slow development of social innovation in country. In authors' opinion, higher education institutions are important intermediaries between the business and public sector, which can enhance social awareness of the young generation by integration of solving social problems into such study courses as Social Entrepreneurship, Social Innovation, Social Marketing, Business Ethic, Bio-economics, and Sustainability Studies. However, although the role of teaching staff to enhance the creation of social innovation is highly important, currently it would be more topical to develop appropriate financial and information support tools for social innovation promoters and implementers in Latvia, which would motivate them to cooperate and make this cooperation process standardized.

Since the Ministry of Economics of the Republic of Latvia is the relevant state administration institution in the field of economic policy as well as in implementing and developing of innovation policy in the country, it should uptake the initiative to create the legislative framework for promoting social innovation in Latvia.

In authors' opinion, further research works should focus on conducting students' surveys to find out how they themselves evaluate their practical experience in working in social projects during their study time.

ACKNOWLEDGEMENTS

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Interaction and Communication in Education at the University: Temporal Aspect of Educational Communication and Activities and Forms of Communication

Mgr. Michaela LUKEŠOVÁ

Department of Pedagogical Sciences,

Faculty of Humanities,

Tomáš Baťa University in Zlín

lukesova@fhs.utb.cz

ABSTRACT

The paper describes the interaction and communication in teaching in higher education. In the introduction, the author briefly justifies the choice of the problem, presents the research methodology, and then presents partial results of a research and especially the temporal aspect of educational communication in university teaching and applied activities and forms of communication. These results were obtained through qualitative research strategy and by realizing videostudy at nine university teachers of field of Study for secondary schools.

Key words: Educational communication and interaction, organizational forms and teaching methods

INTRODUCTION

Educational communication in education at the university:

Educational education, as a process of interactions between individuals in a specific educational environment, has a target group. Educational communication is an important means of pedagogic interaction. Educational communication is a communication between participants in educational and teaching processes which serves to reach education-related goals (Mareš, Krivohlavý, 1995). Educational communication may take place in various environments, but as Průcha (2009) states, the most remarkable type of educational communication is a communication in school class environment. Given the fact that we only monitor communication which takes place between the teacher and pupils during a school class, we prefer the term educational communication (Šedřová, Švaříček, Šalamounová, 2012). Educational communication is thus understood as an exchange of messages between the teacher in the scope of one teaching time-unit. Higher education is, in its conception, different from the conception of education at secondary (or primary) level of education.

Nowadays, as the sector of higher education transforms, a lot of educational questions arise. They are concerned with the quality of education (what is the equality of higher education, how to assure it and how to evaluate it (Roskovec, 2009)), the new curriculum design, functioning forms and methods of education, evaluating processes, etc. Transformations of educational context and requirements for the quality of education are now in the direct relation to the emphasis to professional education of main figures in this field - the teachers. This profession is one of the most monitored professions in the Czech Republic and the preparation for this profession is located in the point of intersection of many views of both theoretical and theoretic-empirical approaches (Kasíková, 2015). There is also certain kind of criticism of higher education. It is, among other things, concerned with the characteristics of education of future teachers which is often labelled as non-functioning. The standpoints are being made towards the research of education of teachers at higher education institutions (it tends to be attributed with high level of inconsistency and low level of interconnectedness of the changes of pedagogical practice in primary education with the processes in university education (Lukášová, 2009).

Currently, there are discussions on the topic why teachers from primary schools and from secondary schools teach in traditional way. The researches (Šedřová, Švaříček, Šalamounová, 2012) that were carried out prove that at elementary schools, there is traditional IRF structure (the absence of the active communication on the side of the pupil). Thus, do future teachers have experience with other type of education? The experience with communication that students gain during pre-gradual preparation is crucial and in particular within the framework of subject curriculum (joint courses). At the university, students of teaching should obtain education of high quality, for two fundamental reasons: in order to study effectively themselves and to experience the model of education that positively affects their future professional life (Kasíková, 2015).

So, what does take place at faculties of universities? In which models of teaching and education do students of teaching find themselves? How well will future teachers be prepared for constructivist teaching? Do the students have experience with dialogical teaching?

METHODOLOGY

In the introduction, we already mentioned that in relation to the variable of higher education sector, a number of pedagogy-related questions arise, and one of them was concerned with assurance of functioning forms and

methods of work. The aim of the research is to describe, what the interaction and the communication taking place in higher education is like and to what extent the students participate in education process. However, within the scope of this contribution, we will not present the answer on the main research question, but we present constitutive results of the research. These are related to following questions:

What is the teacher's and students' time during education at the university like?

What are the activities and communicational forms during education utilized at the university?

Before we will get to the presentation of constitutive results itself, the methodology of the research will be introduced. The answers on the important research are searched for via qualitative research strategy. The legwork took place in the course of the year 2015/2016 with participation of four faculties of Moravian universities. Individual faculties were contacted with a request for collaboration on the basis of selection of the field of study Secondary School Teachers' Training which is offered on the faculties. Subsequently, individual teachers were contacted with a request to participate in the research. Given the selection of a given field of study, Secondary School Teachers' Training, we selected teachers teaching the courses from so-called joint courses. By that, we could achieve quite high level of uniformity of selected courses at various faculties. And the reason for such limitation was an assumption that communication in different subjects could be influenced by their content. Especially General didactics, Pedagogical diagnostics, Pedagogy and psychology, Pedagogical psychology, Personality psychology, etc. For the realization of the research itself, seminars concerning these subjects were selected.

We got nine teachers to participate in the research. In all cases, they are university teachers teaching students of Master's degree in the field of Secondary School Teachers' Training. We very appreciate the teachers' willingness and courage to participate in the research as well as the students'. In the course of the research, we chose a number of data-collecting methods. These were videostudies, direct observation and in-depth interviews with teachers towards the end of the research survey. In the contribution, we will focus primarily on videostudies which were crucial for the below mentioned constitutive results of the research survey. We video-taped the lessons with two video recorders and the method was the same as the one used by Šedřová, Svařiček, Šalamounová (2012). We video-taped two lessons delivered by each teacher, with exclusion of lessons that take place in the beginning and the end of the semester when organization matters are negotiated, and we chose lessons in the middle of the semester. Altogether we recorder 18 video tapes which were subsequently transcribed. In the research, we gained the data which were possible to analyse both qualitatively and quantitatively. The quantitative analysis was focused on gaining the descriptive picture about communication structures, especially for the needs of this contribution, and about what is teacher's and student's time like during education at the university and which communication forms are used in education.

RESULTS

In the following part of the contribution, we will focus on the presentation of constitutive results of the research survey which are fundamental characteristics of educational communication in education at the university. We will focus on, firstly, the proportions, which means what is teacher's and students' time like in education at the university, and secondly on the question of communication forms utilized in education.

We have to mention that this is the primary view into the issue and individual phenomena are still under more and more detailed analysis, given the fact that the data collection was finished at the end of the academic year 2016 and the analysis of the selected data was, thus, extremely time-consuming.

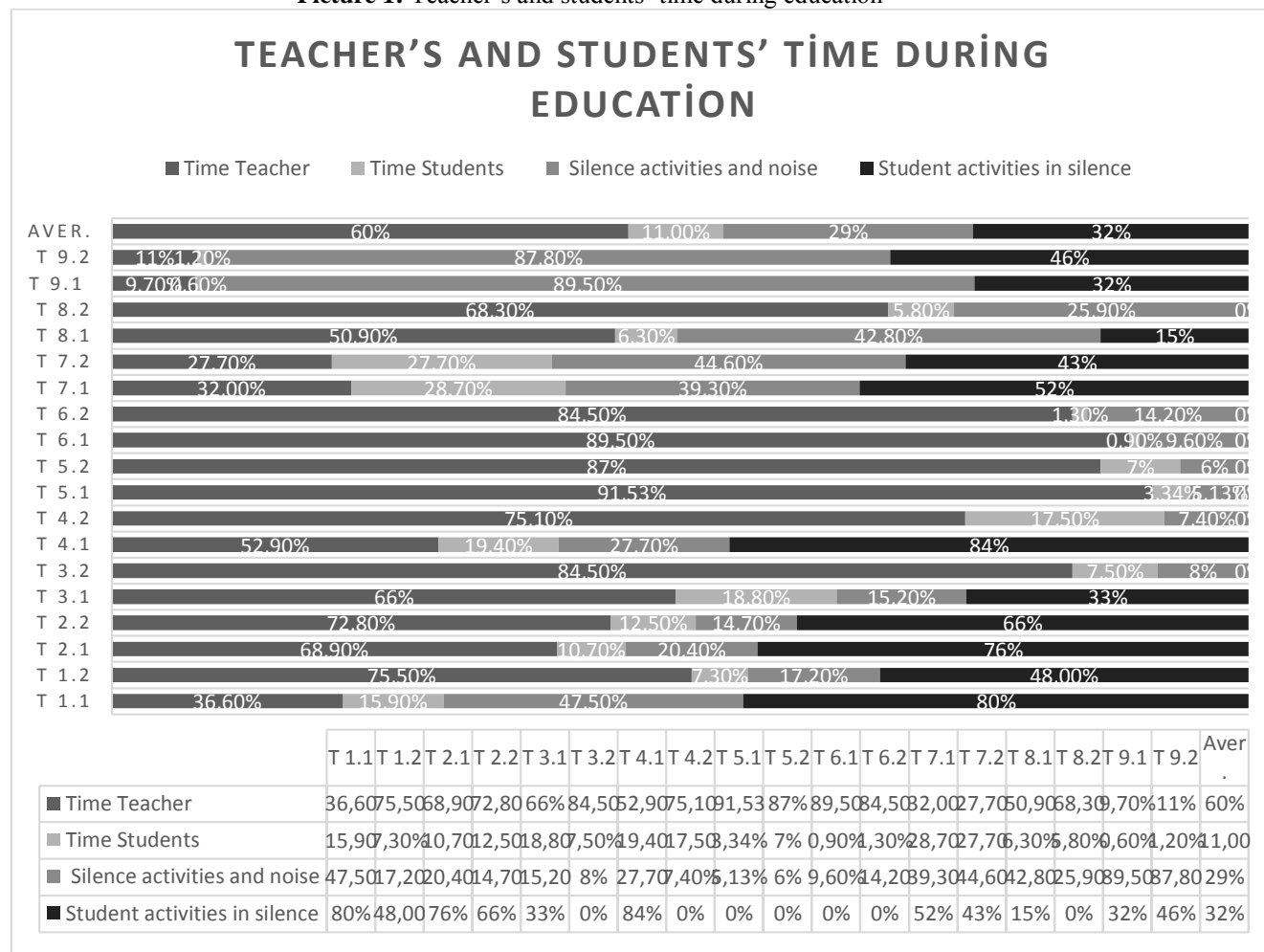
Teacher's time during the education at the university

The question of temporal perspective of the educational communication was focused on by, for example, Mareš, Křivohlavý (1995) who discussed a number of obstacles which can influence for how long students talk during education and for how long the teacher talk during education. The first obstacle lies in the difference between the planned and the actual time span spent for education. For many reasons, the part of the lesson is excluded, so the actual time span is shorter than the time set by the study plan and curriculum. The second obstacle can be in the curriculum which is to be communicated about, itself. The curriculum can be remarkably extensive for example, very extensive in relation to set time span. The curriculum can be appropriately demanding, but badly structured, some relations in it are omitted. And the final obstacle can lay in selected organization for and utilized teaching methods. Collective education with usual repertoire of teaching methods often transfers to the traditional type, so-called heterogenous lesson, during which the teacher's speech dominates and pupils' expression in terms of talking is very limited (Mareš, Křivohlavý, 1995). So, do have both teachers and students at the university enough time for educational communication?

The results gained through analysis of video tapes of education at the university shows that 71% of the time of seminars is devoted to talking. Out of this period, 60% is the teacher speaking, while 11% represents pupils'

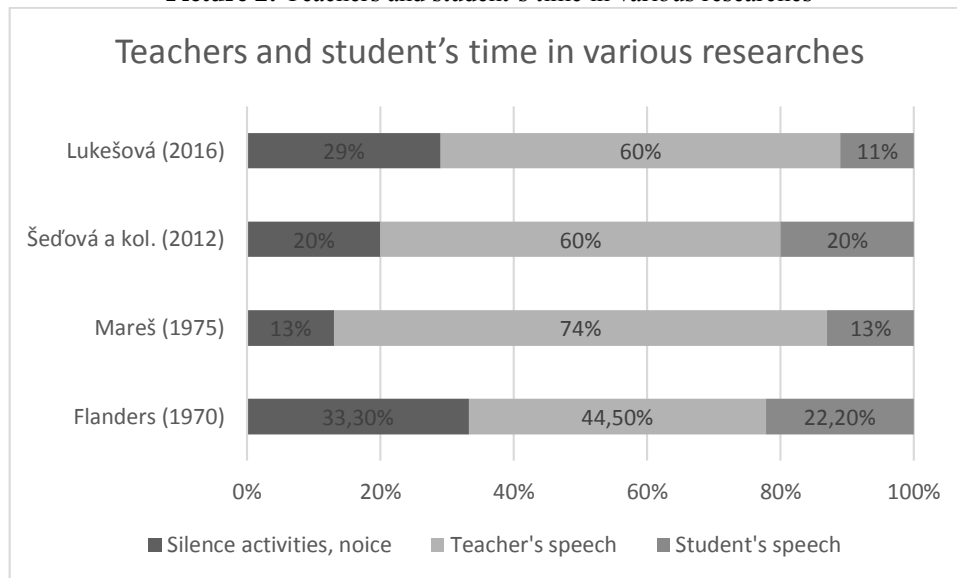
speaking. Silent activities and noise (especially students' group work, individual work and writing, etc.) take 29% of the time span of a lesson. Similar data are shown in Picture 1.

Picture 1: Teacher's and students' time during education



The time span of students' talking, is very short. When compared with various researches (see Picture 2) realized at diametrically different level of education, the time for students to talk is the shortest. It is not our goal to compare one phenomena in various levels of education, but to discuss the facts that are known in this field.

Picture 2: Teachers and student's time in various researches

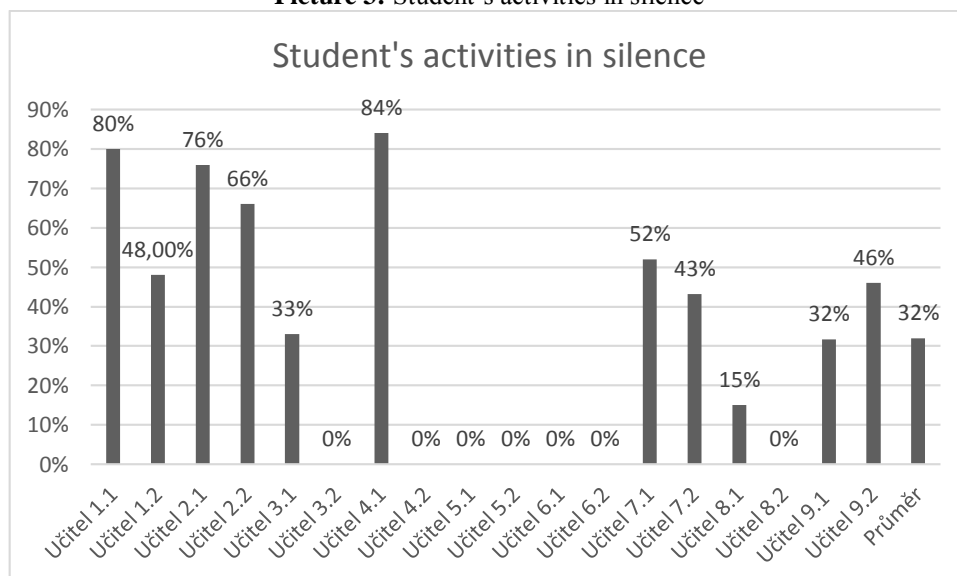


The time of students' speaking is relatively low, however, the time which is devoted to the student during education extended by particular activities which take place in silence. Mainly, it is students' group work.

In the following table (see Picture 3), we can see that out of activities which are carried out in silence, or when there is, possibly, a silence in the class, 32% of the total time is dedicated to student's activities. Of course, numbers mentioned above represent statistical average and do reflect only statistical average and do not reflect the situation of all observed lessons. The reason being that this situation is very variable. The highest share of students' activity represents 84%, the lowest 15%, of the activity does not occur at all and the teacher's monologue dominates.

Students' group work has a crucial position in education at the university. Mareš a Křivohlavý (1995) mention that the way of division of the students can influence the effectiveness of communication. Smaller group creates the base of independent organization form - collective education. According to Kasíková (2015), group forms of education were never omitted in the topics of didactics in last few years. The theory of teacher's education works with the definition of collective learning vs. cooperative learning with more detail and foreign researches of cooperative approaches in education at the university prove that their effectiveness in the support of cognitive processes, social learning and mental health. That is why we will focus on this phenomena in greater detail.

Picture 3: Student's activities in silence



Activities and communication forms in education at the university

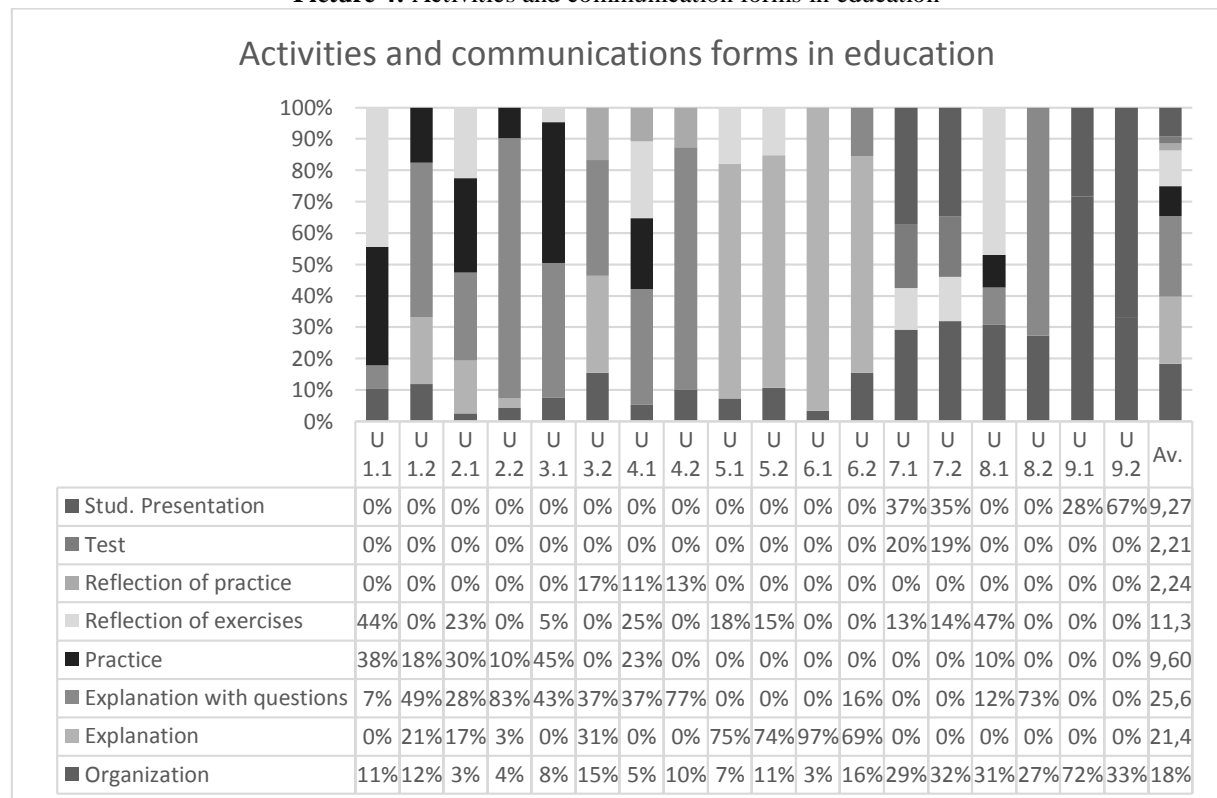
Further constitutive part of the results of the research that we will present in our contribution are activities and communication forms in education at the university. Among fundamental forms of education are, among other things, a seminar that serves to strengthen one's knowledge gained from lectures and independent studying. In seminars, active participation of students is theoretically and methodologically developing and strengthening one's knowledge from courses. (Rohlíková, Vejvodová, 2012) Because of the fact that the author deals with communication and interaction at the university, she picked the form of seminars in which she made video tapes. From the data collected, we can derive that 18% of each lesson is concerned with organization matters. The biggest share of time in a lesson (48%) takes the teacher's lecture which is organized as a monologue (22%) or as a lecture with questions (26%).

Other possibilities which take place in education is practising (10%). Reflection of practising with a teacher takes approximately 11%. These are sequences when the teacher assigns students with collective work which they complete independently and then reflect it with the teacher or this task is realized together with the teacher. These activities will be subjected to more detailed analysis because we are interested in which organizational forms practising takes place, which communication structures occur and which communicational methods are used within their scope.

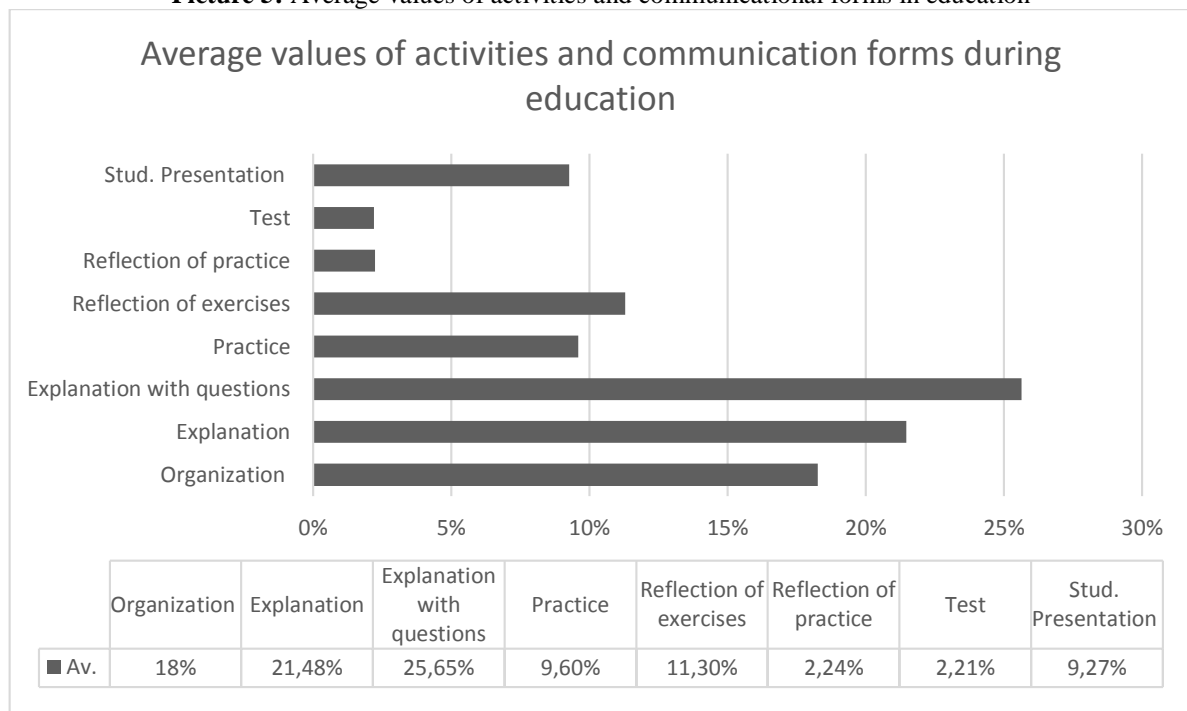
Student's presentations is another activity which occurs in education at the university. It might seem that it is another method which will be occurring quite often in seminars, nevertheless, in our research sample, it takes only 9%. It is statistic average and we have to point out that this activity occurs only with two of the teachers. With one teacher, we also detected the method of revision. Precisely, it was a test (2,2%) which was supposed to detect present knowledge of the students. None of the rest of the teachers used communicational form of revision, written or spoken.

Given the fact that we realized the research in education in the field of study of Secondary School Teachers' Training, it is no surprise that in education of the teachers, although of only two (2.2%) of them, occurred an activity which reflected professional practice of students. The teacher dedicated some time to students and asked them about experiences gained from their sitting in on classes which they visited. Detailed listing of percentage distribution of individual activities can be found in the Pictures 4 and 5.

Picture 4: Activities and communication forms in education



Picture 5: Average values of activities and communicational forms in education



CONCLUSION

The goal of this contribution was to present constitutive results of the research survey, especially what is the temporal perspective of educational communication at the university education, and activities and communication forms used by the teacher. The share of communication activities of the teacher and students is not distributed evenly. On the basis of the research, we found out the proportion of communication activity of the teacher and students. The teachers' share of the overall time of talking during a lesson takes 60%. Only 11% is left for the students, which is the share smaller than that which was stated in other researches (but at different levels of education). It does not mean that teachers' monologue is uninterrupted, because interactive communication forms prevail. The time of students' speaking we detected is short. Nevertheless, to state conclusions that university students do not have enough space to express in education is, in the beginning of our research, quite premature, given the fact that we want to continue working with the data and look more closely to the issue of collective education whose position among monitored cases is significant. Teachers usually choose so-called heterogenous classes which include introduction, discussion on organizational matters, lecture, practising of new topic, or assignments and explanation of individual work to students. We can notice that each teacher chooses the same repertoire of organizational forms and teaching methods repeatedly and that they have their own stable plan of lessons. The teaching method we just mentioned will be continuously analysed and the findings will be presented in the future.

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Interactive Effects of English Proficiency and Material Presentation Mode on English Listening Comprehension and Cognitive Load In Mobile Learning Environment

Chi-Cheng Chang & Hao Lei

Department of Technology Application & Human Resource Development

National Taiwan Normal University

Taiwan R.O.C.

samchang@ntnu.edu.tw

ABSTRACT

The present study was to explore the effects of English proficiency (low vs. high) and material presentation mode (single channel vs. dual channel) on English listening comprehension and cognitive load in a mobile learning environment. The results revealed that (a) high English proficiency learners had significantly better English listening comprehension and lower intrinsic and extraneous load than low English proficiency learners; (b) both high and low English proficiency learners learning with dual channel had significantly better English listening comprehension; (c) for learners learning with single channel, low English proficiency learners had significantly higher extraneous load than high English proficiency learners; and (d) for low English proficiency learners, learners who learned with dual channel possessed significantly lower extraneous load than learners who learned with single channel.

Keywords: English comprehension; English proficiency; Presentation mode; Cognitive load

INTRODUCTION

Listening comprehension is crucial to language learning (Vandergrift, 2007), so having good listening comprehension is a key for non-native English speakers study English. Although auditory input is a main stimulus for listening comprehension, many researchers try to add text messages as visual input to enhance participants' listening comprehension in their studies. For example, studies by Markham (2001) and Bird and Williams (2002) supported that captions (text messages) can facilitate learners' listening comprehension. Captions are usually presented and supported by multimedia. Although there are many relevant studies about learning with multimedia, the impact of multimedia on learning still remains inconclusive (Bhowmick, Khasawneh, Bowling, Gramopadhye, & Melloy, 2007).

According to the working memory model proposed by Baddeley (2000), working memory can receive information coming from various sources, such as visual and auditory input. Information that is received from

different inputs is processed by different units in a human brain, so the efficiency of the working memory, as well as the learning performance, can be enhanced. However, Kalyuga, Chandler and Sweller (2000) showed that synchronous text and spoken messages during learning can negatively affect learning performance due to cognitive load. Furthermore, most researchers hold experimental learning activities regarding listening comprehension in traditional classrooms and do not take students' English proficiency into account when designing learning activities (Winke, Gass, & Sydorenko, 2010).

In order to get rid of learning barriers faced by English as a foreign language (EFL) students during their learning, multimedia and mobile learning activity should be implemented into instruction because the multimedia and mobile learning environment facilitate learning performance and learning motivation (Liu & Chu, 2010). Therefore, the study aimed to examine the effects of English proficiency and material presentation mode on listening comprehension, cognitive load and learning attitude in a mobile learning environment. The research questions include: (1) In the mobile learning environment, will different English proficiencies (low vs. high) and different material presentation modes (single channel vs. dual channel) interactively affect English listening comprehension? (2) Will different English proficiencies (low vs. high) and different material presentation modes (single channel vs. dual channel) interactively affect cognitive load?

METHOD

Participants

Participants were 162 students majoring in applied foreign language in a technology university in Taiwan. An orientation for the use of PDA and an introduction of ubiquitous learning were provided to the participants. The participants' English proficiency was determined by the General English Proficiency Test (GEPT). The GEPT is a newly developed test of English phased in by the Language Training and Testing Center in Taiwan. The participants in each group were then assigned randomly into two different material presentation mode groups, one was single channel (spoken messages only) and the other was dual channel (text and spoken messages).

Experiment

The mobile learning activity in the study was animal observation held in the Taipei Zoo. Students in both groups learned with a PDA and an audio guide. However, students in the single channel group learned through spoken messages only, whereas students in the dual channel group learned by text and spoken messages. The system led students to target animal areas by GPS. When students arrived in the target area, the system would display its material automatically by GPS and students were required to click the play button for an audio guide to be played. When the audio guide was playing, the PDA screen in the dual channel group showed captions simultaneously, and the PDA screen in the single channel group only displayed a remaining time of spoken

messages. After listening to the audio guide, the student must click the next page to take the listening test.

Instruments

There were 20 multiple-choice questions in the test. Each passage contained five multiple-choice questions for examining participants' listening comprehension. The test possessed a good overall item discrimination (0.33), item difficulty (0.52) and internal consistency (0.80). A rating scale, called the Subjective Cognitive Load Rating developed by Paas and van Merriënboer (1994), was given for each passage for measuring participants' level of intrinsic and extraneous load toward each passage. The reliability coefficient of the measures of cognitive load was .912, as measured by Cronbach's α .

RESULTS

Effect on English listening comprehension

Shown as Table 1, the result of two-way ANOVA revealed that the interactions of material presentation mode and English proficiency for English listening comprehension were insignificant. The main effect of material presentation mode for English listening comprehension was significant ($F_{(1, 113)} = 22.773$, $p < .05$, $\eta^2 = .168$), meaning that in English listening comprehension learners receiving dual channel significantly outperformed learners receiving single channel ($M=10.66 > M=8.50$). The main effect of English proficiency for English listening comprehension was also significant ($F_{(1, 113)} = 16.957$, $p < .05$, $\eta^2 = .130$), implying that high English proficiency learners obtained significantly higher scores in English listening comprehension than low English proficiency learners ($M=10.53 > M=9.59$).

Table 1 Two-way ANOVA summary on English listening comprehension

Source	SS	df	MS	F	Effect Size
Presentation mode	126.817	1	126.817	22.773 ^a	0.168
English proficiency	94.431	1	94.431	16.957 ^a	0.130
Presentation mode * English proficiency	0.000	1	0.000	0.000	0.000
Error	440.477	113	3.898		

^a $p < 0.05$

Effect on cognitive load

Shown as Table 2, the results of two-way MANOVA revealed that the interaction of material presentation mode and English proficiency for the extraneous load aspect was significant ($F_{(1, 113)} = 4.011$, $p < .05$, $\eta^2 = .034$). The main effect of material presentation mode was insignificant. The main effect of English proficiency was significant for all the aspects (intrinsic load: $F_{(1, 113)} = 11.261$, $p < .05$, $\eta^2 = .091$; extraneous load: $F_{(1, 113)} =$

13.855, $p < .05$, $\eta^2 = .109$), implying that low English proficiency learners obtained significantly higher scores on intrinsic load ($M=4.82 > M=4.35$) and extraneous load ($M=4.81 > M=4.29$) than high English proficiency learners.

Table 2 Two-way MANOVA summary on cognitive load

Source	Aspects	SS	df	MS	F	Effect Size
Presentation mode	Intrinsic	0.077	1	0.077	0.134	0.001
	Extraneous	0.350	1	0.350	0.635	0.006
English proficiency	Intrinsic	6.479	1	6.479	11.261 ^a	0.091
	Extraneous	7.630	1	7.630	13.855 ^a	0.109
Presentation mode *	Intrinsic	1.300	1	1.300	2.259	0.020
English proficiency	Extraneous	2.209	1	2.209	4.011 ^a	0.034
Error	Intrinsic	65.018	113	0.575		
	Extraneous	62.230	113	0.551		

^a $p < 0.05$

Shown as Table3, the simple main effects of material presentation mode and English proficiency on the extraneous load showed that English proficiency had a significant effect on the extraneous load aspect among learners in the single channel group ($F_{(1,56)} = 15.948$, $p < .05$, $\eta^2 = .222$). Low English proficiency learners had significantly higher score on extraneous load than high English proficiency learners ($M=4.99 > M=4.21$) in the single channel. On the other hand, material presentation mode had a significant effect on the extraneous load among low English proficiency learners ($F_{(1,56)} = 4.382$, $p < .05$, $\eta^2 = .073$). Learners learning with single channel had significantly higher score on extraneous load than learners learning with dual channel in low English proficiency learners ($M=4.99 > M=4.61$).

Table 3 Summary for simple main effects on the aspect of extraneous load

Group	Source	SS	df	MS	F	Effect Size
Single channel	English proficiency	8.954	1	8.954	15.948 ^a	0.222
	Error	31.442	56	0.561		
Dual channel	English proficiency	0.821	1	0.821	1.519	0.026
	Error	30.787	57	0.540		
Low level	Presentation mode	2.141	1	2.141	4.382 ^a	0.073
	Error	27.364	56	0.489		
High level	Presentation mode	0.404	1	0.404	0.660	0.011
	Error	34.866	57	0.612		

^a $p < 0.05$

DISCUSSIONS AND CONCLUSIONS

According to the study results, material presentation mode and English proficiency had impacts on English listening comprehension in the mobile learning environment, as the aforementioned findings done in traditional classrooms. Firstly, learners learning with dual channel significantly outperformed learners learning with single channel. This result confirmed the study done by Markham (1989) that regardless of English proficiency, captions were important to learners in listening comprehension because learners learning with captions outperformed learners learning without captions. Second, high English proficiency learners obtained significantly higher scores on listening comprehension than low English proficiency learners. This result can be explained by arguing that high English proficiency learners have more prior knowledge about English.

In the mobile learning environment, material presentation mode and English proficiency also affected learners' cognitive load on English listening. Firstly, low English proficiency learners had significantly higher intrinsic and extraneous load than high English proficiency learners. High English proficiency learners have strong background in English, which helps them to connect old information to new materials and therefore lowers their intrinsic load. Second, for learners learning with single channel, low English proficiency learners had higher extraneous load than high English proficiency learners. Since single channel presentation mode does not provide learners sufficient time to process language, low English proficiency learners will have hard time to absorb what they have learned from the learning activity. Third, for low English proficiency learners, learners learning with dual channel had lower extraneous load than learners learning with single channel. It seems that dual channel presentation mode helps low English proficiency learners to lower their extraneous load and enhance their listening comprehension.

In sum, regardless of English proficiency, captions or dual channel (text and spoken messages) can enhance learners' listening comprehension and learning attitude in the mobile learning environment. Dual channel presentation mode is also beneficial to low English proficiency learners in lowering their extraneous load. Therefore, the study result supported that learning with dual channel is helpful to English listening comprehension in the mobile learning environment. Instructional designers and educators should keep the study findings in mind when designing mobile learning activities for learners with different English proficiencies.

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Intercultural Peculiarities of Modern American Movie Translation

Zhumaliyeva RAKHIMA

Faculty of Philology and Educational Sciences

Suleyman Demirel University, Kazakhstan

rakhimazh@gmail.com

ABSTRACT

The focus of interest in this research paper is on the intercultural peculiarities of American modern movie translation and language teaching through the translation. It is necessary to note that investigation of the feature film is a rapidly growing area in our country. Scholars have concentrated both on film translation problems and teaching language through films. Numerous films contain excellent examples of communication which is inherent to this or that culture. It's very interesting to note that the feature film is a kind of mass communication which is closely interconnected with culture as a whole, and secondly, films are the reflection of cultures. While watching films we are exposed to the way native English people actually speak. Moreover, films vividly represent misunderstandings which can occur due to the abundance of multifarious linguistic units existed in the English language which cause obstacles in film translation. Such linguistic units as realia, slangs and clichés are directly bound to the concept of cultural untranslatability. This concept is extremely important for translation between languages with a great cultural difference. The target-language-culture-oriented translation of feature films can be considered as one of the most important requirements of the film translation.

INTRODUCTION

Nowadays a feature film has been promoted to be one of the dominant forms of culture in modern society. Moreover the feature film can be used as an effective tool in teaching intercultural communicative and translation skills. In this study the term “movie” is also used as the research analysis is based on modern American movie and it is the most common term in the United States of America. This research paper is focused on translation peculiarities of various culture-bound words from English into Russian on the basis of modern American movie and language teaching through translation. To analyse the aforementioned research problems the following objectives are set: to identify the most useful translation methods of culture-bound words in modern American movies; to investigate project-based learning as a dynamic classroom method in teaching language through translation movies.

LITERATURE REVIEW

No doubt due to the fact that a movie is studied from different angles. Film critics analyse and evaluate it as a cultural phenomenon, scholars investigate its linguistic and translation peculiarities, teachers use it as an effective classroom method. Connor (2000), the linguist and the literary critic from the Oxford University, describes the film translation as historical and cultural phenomenon. Stempleski and Tomalin (2001) design the film-based classroom activities from elementary to advanced levels for teaching English as a second or foreign language. Szarkowska (2005) draws her attention to general information about the film translation, classification, history and regional distribution of the film translation, however, the study has purely theoretical character, and no any practical recommendations are provided. Unlike the aforementioned research Díaz Cintas and Anderman (2009) investigate the film translation more widely, considering general features of film translation, and its separate types. The definite chapter of the book is focused on the theories and methods of the film translation teaching. Until now, many studies have been concentrated on the analysis of subtitling and dubbing as main types of film translation. Thus, Rader, Neuendorf & Skalski (2016) examine differences between subtitled and dubbed versions of the international film content and their impact on audience recall and enjoyment. In Kazakhstan and Russia literary critics, linguists and translators also draw much attention to the cultural and historic peculiarities of the film, issues of the film translation, teaching language through films, linguistic features and discursive characteristics of the film as a multicomponent unity (Fillipov, 2006; Slyshkin & Yefremova, 2004; Zhumaliyeva 2014, 2016).

METHODOLOGY

This research paper describes how different translation methods are used in transferring culture-bound words from English into Russian on the basis of modern American movies. Scholars of translation propose different translation strategies for cultural translation (Díaz Cintas and Remael, 2007). Vinay and Darbelnet (1995) divide translation procedure into direct and oblique, which correspond to literal and free method of translation. Venutic (1992) proposes two basic translation strategies: domestication and foreignization. This current research is based on the strategies suggested by Chesterman (1997). Chesterman's model of strategies consists of the three main translation strategies: syntactic (literal translation, calque, transposition etc.); semantic (synonym, antonym, hyponymy, and other semantic changes) and pragmatic (cultural filtering, explicitness change, information change and other pragmatic changes). Chesterman (1997) points out that this model may be extended to include other syntactic, semantic and pragmatic changes. This factor provides the efficient use of Chesterman's model of translation strategies, which can be regarded as an “open system”. Consequently, transcription/transliteration, substitution,

functional analogue, contextual and pragmatic equivalencies are defined as translation methods of the syntactic, semantic and pragmatic translation strategies in this study. The transliteration/transcription, lexical substitution, functional analogue and contextual equivalence belong to the semantic strategy, the grammatical substitution refers to the syntactic strategy and the pragmatic strategy includes the pragmatic equivalence respectively. To differentiate the use of the proposed translation strategies it is necessary to define the translation methods. Thus, the substitution is one of the most useful translation methods, which includes lexical and grammatical types. The form of words, the parts of speech, members of the sentence can be substituted in translation procedure (Barkhudarov, 1975). The functional analogue is a type of rendering culture-bound word of the source language by means of target language units which is used in the absence of lexical correspondence in the target language (Fedorov, 2002). Unlike the functional analogue, the contextual equivalents convey the content of culture-bound words by the contextual correspondences, which are used to translate a source language unit in a particular linguistic content (Vlakhov & Florin, 2009). The pragmatic equivalence refers to words and phrases in both languages, which have the same effect on audience in both languages (Komissarov, 1990). The transliteration is rendering the orthographic form of words of the source language by letters of the target language, while the transcription is rendering the pronunciation of the source language words by letters of the target language (Fedorov, 2002). It should be noted that the following culture-bound words as clichés, slangs and realia are analyzed in this research. The cliché is understood as an overused expression, something that is said a lot that has become some common, the slang is a language and culture-bound word and frequently particular to a certain subculture, realia are words and expressions for culture-specific material elements (Djachy & Pareshishvili, 2014; Santiago Araújo, 2004; Stolt, 2010).

The subject matter of this study lies also in the investigation of project-based learning activities through a feature film. It is necessary to mention, that three projects are used in teaching the subject "Translation Theory". They are as follows: Film translation project, Research Glossary Project and Research Paper Review. Practical recommendations on these three projects are analyzed in the second part of "Research Analysis".

RESEARCH ANALYSIS

The research analysis includes 2 parts. The first part is focused on translation peculiarities of culture-bound words (cliché, slang, realia) from English into Russian. The second part is dealt with the project-based learning in teaching film translation. Regarding the first part it is essential that in general 100 culture-bound words are analyzed on the basis of 20 modern American movies of different genres. The most widespread culture-bound word in modern American movies is cliché (61%). It can be seen from the Table 1 where some examples of the most popular and overused clichés are provided with translation.

Table 1. Translation methods of clichés

#	The Source Text	The Target Text	Method of Translation/ Transformations	Extracted from (Movie Title)
1	Think it's gonna mess up your scam, but don't blame me, okay? <i>It's the timing.</i>	Думаю, это расстроит ваш план, но меня в этом не вини, ладно? <i>Так совпало.</i>	<i>Substitution (grammatical and lexical)</i>	Life of Crime (2013)
2	And legally, he's not supposed to deal with extortionists. So he's <i>in the free and clear.</i>	И по закону он не должен иметь дело с вымогателями. Так что он теперь <i>вольная птичка.</i>	<i>Substitution (lexical)</i>	Life of Crime (2013)
3	-Tom will be alright, but you gotta make things right with Murph. -I will. - <i>Without making promises you don't know you can keep.</i>	Том то переживет, но ты должен все объяснить Мерф. -Я все улажу. - <i>Не давай обещаний, которые не сможешь сдержать.</i>	<i>Substitution (grammatical)</i>	Interstellar (2014)
4	Learned a lot. In the end though, <i>I kind of screwed it up.</i>	Я многому научилась. Правда, <i>под конец дала маху.</i>	<i>Pragmatic equivalence</i>	The Devil Wears Prada (2006)

5	<i>A million girls would kill for this job.</i>	<i>Миллионы девушек мечтают об этом.</i>	<i>Functional analogue</i>	The Devil Wears Prada (2006)
6	<i>You don't conform, your mind works in a million different ways.</i>	<i>Вы не умеете подчиняться, нестандартно мыслите.</i>	<i>Functional analogue</i>	Divergent (2014)
7	<i>I just wanted to say that I'm sorry. I...I don't know what's wrong with me.</i>	<i>Я хочу извиниться. Я не знаю, что на меня нашло.</i>	<i>Contextual equivalent</i>	Divergent (2014)

According to the research results the following translation methods are used: Substitutions- 40%; Pragmatic equivalence - 25%, Functional analogue -20%, Contextual equivalence -15%. The translation methods applied in cliché transferring may be observed on the Figure 1.

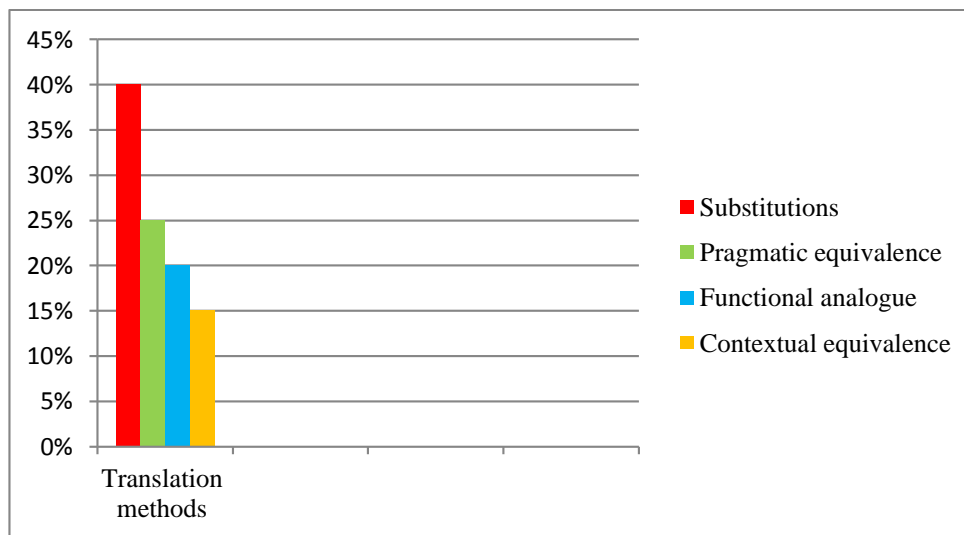


Figure1. Cliché transferring

The next culture-bound word which is often used in modern American movies is slang (35%). The examples of some slang terms are given in the Table 2.

Table 2. Translation methods of slangs

#	The Source Text	The Target Text	Method of Translation/ Transformations	Extracted from (Movie Title)
1	<i>I mean, they might be bluffing.</i>	<i>Они могут блефовать.</i>	<i>Pragmatic equivalence</i>	Life of Crime (2013)
2	<i>This is bullshit.</i>	<i>Бред какой-то.</i>	<i>Pragmatic equivalence</i>	Life of Crime (2013)
3	<i>Grind it!</i>	<i>Смелее!</i>	<i>Contextual equivalence</i>	Interstellar (2014)
4	<i>You got the makings of a real man cave.</i>	<i>Вы готовились стать холостяком.</i>	<i>Contextual equivalent</i>	Gone Girl (2014)
5	<i>Are you nuts?</i>	<i>Ты спятила?</i>	<i>Substitution (grammatical)</i>	The Book Thief (2013)
6	<i>-This is my wife's office. Amy's</i>	<i>-Это кабинет моей жены. Кабинет Эми.</i>	<i>Substitution (lexical)</i>	Gone Girl (2014)

	office. -Wow. Impressive <i>gal.</i>	-Ух ты, образованная у вас <i>жена.</i>		
7	Revolutions, you <i>follow?</i>	Круговорот, ты <i>сечешь?</i>	<i>Functional analogue</i>	The Wolf of Wall Street (2013)

The most useful translation methods for slang terms are pragmatic equivalence (40%), contextual equivalence (25%), substitutions (20 %), and functional analogue (15%). The translation methods applied in slang transferring may be observed on the Figure 2.

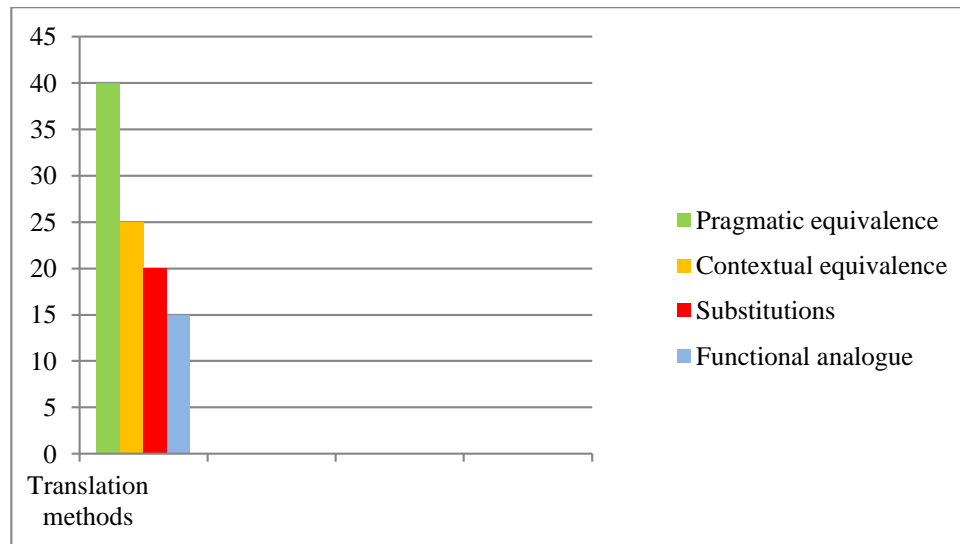


Figure 2. Slang transferring

The least used culture-bound words in modern American movies are realia, they constitute only 4%. Some examples are given in the Table 3.

Table 3. Translation methods of realia

#	The Source Text	The Target Text	Method of Translation/ Transformations	Extracted from (Movie Title)
1	-Life. I don't remember the point - <i>Deep hasbro thoughts</i>	-Жизнь. Я забыл, в чем смысл - <i>Какое глубокое замечание</i>	<i>Substitution (lexical)</i>	The Fault in Our Stars (2014)
2	Call Natalie at <i>Glorious Foods</i> , tell her no for the 40th time.	Позвоните Натали в " <i>Глориос Фудз</i> " и скажите ей "нет" в сотый раз	<i>Transcription</i>	The Devil Wears Prada (2006)

Though realia are not usually translatable, they are transferred by means of transcription/ transliteration and lexical substitution. These translation methods may be observed on the Figure 3.

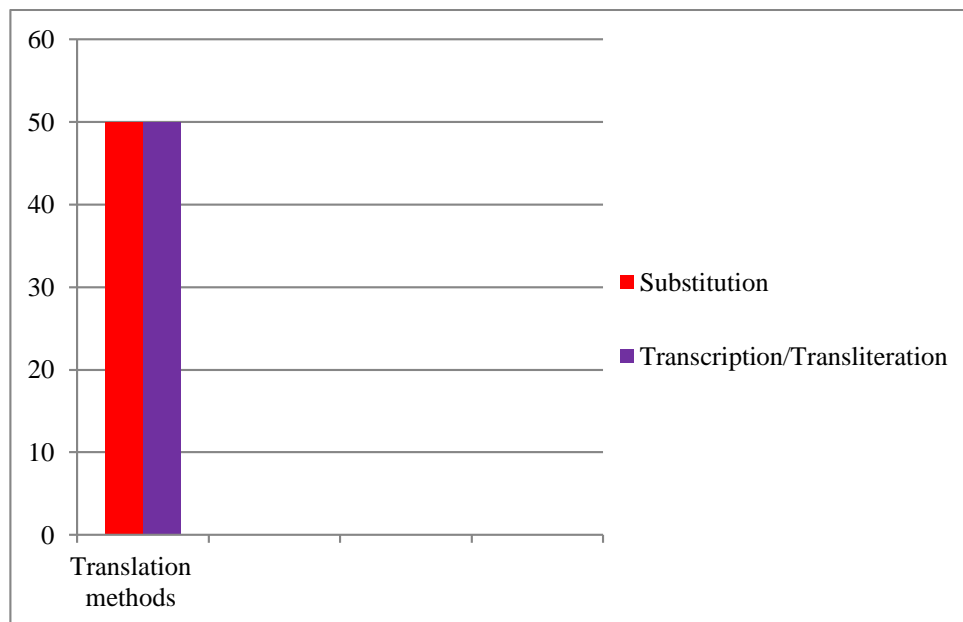


Figure 3. Realia transferring

It is necessary to mention that the most useful translation methods for all culture-bound words are substitutions (35%), pragmatic equivalence (25%) and functional analogue 20%. The contextual equivalence constitutes 15%, transcription/transliteration amounts to 5%. These translation methods may be observed on the Figure 4.

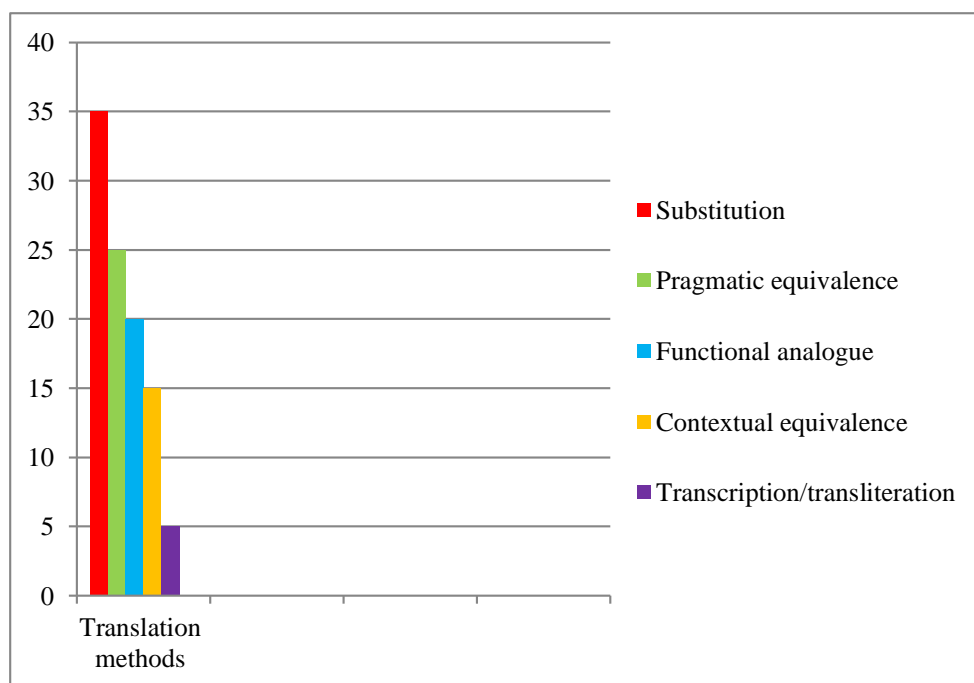


Figure 4. Culture-bound words transferring

The second part of this research analysis describes how project-based learning activities are used in teaching translation. The first project is focused on the film content and translation analysis, which include the following parts:

- Part 1. Genre peculiarities. The title of a movie. Genre peculiarities of the chosen film;
- Part 2. The basic plot of the movie in detail. Main characters. Main events;
- Part 3. Translation analysis of the chosen extract;
- Part 4. The type of film translation. The main features of this translation type;
- Part 5. Movie dialogues, slangs, idioms etc. in the chosen extract;
- Part 6. Basic translation devices (grammatical and lexical transformations) of the definite extract;

Part 7. The final word on the film: interesting point about the movie;

Part 8. Evaluation of the movie translation;

Part 9. Discussion of the film project.

The next project is dealt with the content analysis of the research paper on film translation, see “Appendix A”. Firstly students choose the research paper, and then they read, analyze, and compile a glossary of film translation terms from the research paper and prepare project presentation. To define the terms students use dictionaries, encyclopedias and on-line resources. They also provide explanations of the film translation terms and write references of used examples. Objectives of this project are:

to explore and examine the language of film translation studies;

to foster interest in reading and extending vocabulary on film translation terminology;

to learn how to use diverse background resources (special dictionaries, encyclopedia, Internet, etc.);

to develop reading skills;

to develop presentation skills.

The third project is focused on the research analysis of the chosen research paper, see “Appendix B”. The research paper review is based on two criteria: formal and scientific. The first criterion is focused on general information: research title, author of the research paper, and student’s name (reviewer), and the second criterion is dealt with the content of a research paper: research objectives, research background, current concerns in the area, methods, research results, and references.

CONCLUSION

In conclusion it is necessary to highlight, that a good translator should be familiar with the culture, customs, and social settings of the source and target language speakers. Thus, cultural communication should be regarded as one of the major aims of translation. The communication in the English language through American modern movie is the process of successful development of all communicative and translation skills, which are necessary for future translators.

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APPENDIX A: Project Guidelines (Content analysis of the research paper)

Objectives:

- to explore and examine the language of film translation;
- to foster interest in reading and extending vocabulary on terminology of the film translation;
- to learn how to use diverse background resources (special dictionaries, encyclopedia, Internet, etc.);
- to develop reading skills;
- to develop presentation skills.

Directions:

1. Choose and read the research paper (scientific article) from the on-line resources;
2. Make a glossary of terms from the analyzed research article;
3. Underline or highlight terms on the film translation;
4. Organize your own Glossary of terms (in alphabetical order). It should contain not less than 10 entries;
5. Provide explanations. To define the terms, use dictionaries, encyclopedias and on-line resources;
6. Write references of used literature;
7. Prepare project presentation.

APPENDIX B: ARTICLE REVIEW

- FORMAL CRITERIA -

GENERAL INFORMATION

Article Title.....
 Article Author (s)
 Student
 Date

- SCIENTIFIC CRITERIA -

CONTENT	
1.1 Abstract	<ul style="list-style-type: none"> • Does the abstract describe the research and the results?
1.2 Introduction	<ul style="list-style-type: none"> • The current concerns in the area • The research aim and objectives
1.3 Literature review	<ul style="list-style-type: none"> • Theoretical background of the research paper • Is the literature used in support of research sufficiently comprehensive and current?
1.4 Methodology	<ul style="list-style-type: none"> • What methods are used?
1.5 Results	<ul style="list-style-type: none"> • Are the results clearly presented?
1.6 Conclusions	<ul style="list-style-type: none"> • Are the conclusions logically explained?
1.7 References	<ul style="list-style-type: none"> • Do the references reflect the latest work/research in the considered area?? • Are the references correctly indicated in the article? • Are the references properly indexed and recorded in the bibliography?

Internationalization of Higher Education Institutions: The Case Study of the Polytechnic Institute of Bragança

Cláudia Miranda VELOSO

*Applied Management Research Unit (UNIAG)
Institute Polytechnic of Bragança; University of Aveiro
Portugal
claudiamiranda@ipb.pt*

Paula Odete FERNANDES

*Applied Management Research Unit (UNIAG)
Research Unit in Business Sciences (NECE)
Institute Polytechnic of Bragança (IPB)
Portugal
pof@ipb.pt*

ABSTRACT

Higher Education Institutions (HEI) operate in a competitive environment that forces them to adopt a new strategic position seeking to position themselves better in a greatly competitive, dynamic and differentiated market. Internationalisation is becoming one of the main key factor and strategic priorities of HEI all world. Most HEI include internationalisation, as a part of their competitive strategies once is a way to promote cooperation and mobility for both students and staff and knowledge transfer between institutions. The aim of the research is to analyse and evaluate the international academic mobility in the Polytechnic Institute of Bragança (IPB, Portugal). The aim is to contribute to the gradual interest of the understanding of the phenomenon of academic mobility and its impacts on IPB, once foreign students are an asset to HEI, during the stay where they are studying, and as well the staff mobility. In addition, given the relevance and importance of the internationalisation strategy followed by the IPB and its international both students and staff mobility, it is intended that the results of this will help the decision makers in the IPB to develop better strategies that will support the internationalisation process within IPB.

Keywords: Internationalization; Higher Education Institutions; Polytechnic Institute of Bragança; Competitiveness; Strategic Management.

INTRODUCTION

Over the last years, the higher education has been going through a stage of internationalization. Higher Education Institutions (HEI) around the world are taking advantage of this singularity, as they are competing with each other to attract international students. With internationalisation being a crucial criterion in the majority of university rankings and with the constant pressure of becoming more entrepreneurial (Dill, & Soo, 2005; Deem, Mok, & Lucas, 2008; Karakullukcu, 2012; Bordean, & Borza, 2013), the institutions have started to consider this phenomenon as a feasible source of competitiveness and competitive advantage (Luxon, & Peelob, 2009; King, 2010; Craciun, 2015).

The internationalization of higher education is the process of presenting exchange activities in education and research of several varieties among universities and institutions in different countries (Huang 2004; Egroun-Polack, & Hudson, 2014). One of the main objectives of internationalised higher education is to offer the most relevant and appropriate education to students, who will be the citizens, entrepreneurs and scientists of tomorrow (Hénard, Diamond, & Roseveare, 2012). Internationalisation is not an end in itself, but a driver for change and enhancement – it should help generate the skills required in the 21st century, spur on innovation and generate replacements while, ultimately, fostering job creation (Hénard, Diamond, & Roseveare, 2012). The same authors state that the landscape of internationalised higher education is rapidly evolving; once new countries and institutions are ingoing the global talent pool and challenging the established position of the traditional champions of international education; moreover the English language is dominating new programmes; and, new forms of institutions, programmes and teaching methods are being set up. In addition, the effects of the economic and financial crises are far-reaching and long lasting, changing the flows of students and faculty across continents as well as brain circulation.

Hénard, Diamond and Roseveare (2012), report that internationalisation functions as a two way street: it can help students achieve their goals to obtain a quality education and pursue research; and the institutions may gain a worldwide reputation, as well as a foothold in the international higher education community, and rise to meet the challenges associated with globalisation. The highest five reasons that one HEI start the internalisation are

(Marmolejo, 2012) to: improve student preparedness; internationalise the curriculum; enhance the international profile of the institution; strengthen research and knowledge production; and, diversify its faculty and staff.

In this regards, this paper intend to offer information about the success of Polytechnic Institute of Bragança and to analyse and evaluate the international academic mobility in the Polytechnic Institute of Bragança.

The paper, after the introduction, starts with a literature review of the internationalisation in higher education. Next, will be presented several implications for implementing strategies that would support the internationalisation phenomenon in IPB. Finally, the main conclusion will be presented.

BACKGROUND

There is no doubtfulness that internationalisation and globalisation are closely connected, even though they are two essentially different processes (Altbach & Knight, 2007; Knight, 2012; Bordean, & Borza, 2013). In the one hand, the globalization can be well marked as the economic, political, and societal forces pushing 21st century higher education concerning a greater international participation (Altbach, & Knight, 2007). Moreover, in the another hand, the internationalisation has more to do with the specific policies and programs carry out by governments, academic systems and institutions, and even individual departments to deal with globalization (Altbach, 2006; Ghasempoor, Liaghatdar, & Jafari, 2011).

According Pipia (2017) the both processes, internationalisation and globalisation, push higher education towards international involvement in globalized world. The differences is presented in in the table below.

Table 1. Distinctions between Globalization and Internationalisation.

	Characteristics Features		Result
Internationalisation	The response of educational institutions to the globalization process.	Higher degree of internalization results in the higher degree of globalization and vice versa.	Physical mobility, academic cooperation and academic knowledge transfer.
Globalisation	The acceleration of movement of people, ideas, knowledge, capital, goods and services through national borders.	The process by which different cultures and nations become homogeneous.	Competition, commercial knowledge-transfer.

Source: Pipia (2017, p. 17).

The globalisation of higher education brings together students and professors from different systems, creating a dissimilar and different environment; however many HEI classically expect foreign students to adapt to their new higher education environments (Kelly, & Moogan, 2012). All institutions claim to be willing to become an international organisation, participating in the globalised knowledge creation and transfer. Nonetheless, many have designed student mobility policies that are disconnected from any strategic thinking regarding the objectives and benefit for the institution's missions and student achievements (Hénard, Diamond, & Roseveare, 2012). In order for internationalisation to be both successful and sustainable, it is essential for it to be rooted in the culture, policy and organizational process (Qiang, 2003).

Hsu (2012) claimed that internationalisation was a process to initiates policies to adapt various cultural knowledge and competencies and their practices in campus community. Pull factors had been a significant influence on students to choose study abroad and contribute to internationalise higher education campuses; knowledge and access to information; reputation and quality of institutions; recommendation of others in personal level; financial issues-fees and other expenses; presence of students of same country and option for part-time jobs; environment; geographic and time closeness; and social link-presence of family members or friends were identified as the components and ties that drew the international students (Chou, Roberts, & Ching (2012).

Internationalisation of higher education has been associated with several benefits like as (Bordean, & Borza, 2013):

- (i) One should note the cultural and social impact that this phenomenon is making within the local, regional and even national communities;

- (ii) The movement of students and staff among campuses has allowed them to gain new perspectives and become much more aware of the possibilities for cooperation;
- (iii) Both students and staff were able to recognize international opportunities and be internationally oriented;
- (iv) The internationalisation of higher education offers a new perspective in terms of quality assurance within universities.

McBurnie (2000) and Özturgut, Cantu, Pereira and Ramón (2014) explained that strategizing internationalisation of higher education included three components: (i) international composition of student body; (ii) foundation and development of overseas campus; and (iii) the assurance of internationalising the learning experience.

Wadhwa (2016) argued that the approach to traditional internationalisation which was based on international co-operation and infrequently a profit making activity were at the centre of traditional internationalisation has changed significantly from the last two decades. Appearance of the new phase of internationalisation of higher education is characterised by self-economic interest of maximizing profit and capturing student market by expanding institutional reach in other countries. The observed competition in recent decades in the international higher education market has led to the marginalisation of teaching learning, which is assumed to be the central role of educational institutions.

In view of that one of the basic objectives of higher education is to promote the overall development of the student in a competitive society, it is crucial and important that the students have to acquire the multicultural ability and attitude to serve to the cultural diversity that is present in society (Hurtado, Coronel, Carrasco, & Correa, 2013). Underlining the importance of internationalising higher education, Salisbury, Umbach, Paulsen, and Pascarella (2009) claimed that studying in multicultural surroundings increases compassion and respect for global issues, positive attitudes toward other cultures, and better intercultural communication skills and self-image. Roberts, Chou, and Ching (2010) argued that internationalisation was present in countless dimensions in higher education. University policies, initiatives, and practices were being adjusted in the context of globalisation.

Wit, Egron-Polak, Howard and Hunter (2015) argued that internationalisation in Europe has grown out of, and been strongly influenced by, the ERASMUS programme initiated by the European Commission almost 30 years ago. Beyond the three million mobile students, ERASMUS has had an even greater impact on the internationalisation and reform of higher education. It piloted the European Credit Transfer System (ECTS) and initiated access to EU membership for countries in Central and Eastern Europe and other aspiring candidates. The Horizon 2020, the framework programmes and their predecessors over the last 35 years have also had an impact on the international and European dimension of higher education, as have the collaborative programmes with the rest of the world, such as TEMPUS, ALFA and ALBAN, ATLANTIS and others, now brought together with the European mobility schemes in the new ERASMUS+ programme.

INTERNATIONALISATION PROCESSES IN THE POLYTECHNIC INSTITUTE OF BRAGANÇA

General description of the Polytechnic Institute of Bragança¹

The Polytechnic Institute of Bragança (IPB) is a higher education public institution with a defined mission in creating, transmitting and diffusing technical-scientific and professional knowledge through the articulation of study, teaching, applied research and experimental development. IPB belongs to the European Network for Universities of Applied Sciences (UASNET), which main objectives include the transferability of professional skills and the integration of applied research in their professional and technological education mission.

Founded in 1983, IPB comprises five schools: School of Agriculture; School of Public Management, Communication and Tourism; School of Education; School of Health; and School of Technology and Management. Its activity embraces a wide area of knowledge and technology, namely arts, communication and multimedia, business sciences and law, education and teachers training, agriculture sciences and natural resources, health and civil protection, tourism, sports and leisure, and technologies.

In accordance to the current reform of the European higher education system, the actual goals of IPB are: to contribute to the increase of higher education frequency; to motivate lifelong learning; to improve the quality and relevance of its academic offer; to promote the mobility of students and graduates and to contribute to a better international cooperation in Europe and with the Portuguese-speaking countries. The IPB has consolidated its

¹Based on web page of IPB: <http://portal3.ipb.pt/index.php/en/guiaects/polytechnic-institute-of-braganca>

dimension to 7,000 students and has achieved the adequacy to the Bologna process through the offer of around a hundred courses and degrees, namely technical specialization courses, bachelors and masters programmes.

Nowadays, over 50 per cent of the IPB teaching staff holds a PhD degree. The IPB is part of the national system of science and technology, through the existence of R&D units and branches at the IPB. In several areas, the IPB presents indicators of impact and excellence of its scientific publications and applied research: according to the Iberoamerican 2012 ranking, developed by the SCImago Research Group, the IPB is the Portuguese higher education institution with the greatest normalized impact and the best excellence rate. In 2017, the prestigious Shanghai Ranking positions the IPB among the 50 best Institutions in the World in the area of Food Science and Technology, being one of only three Portuguese institutions, together with the Universities of Lisbon and the port, to reach the Top 50 of this ranking.

Following the implementation of the Bologna Process and the consequent legislation regarding the mobility of students among degrees and higher education institutions, prior learning must be recognized and credited. The prior learning concept comprises all the previous learning/training undertaken in other higher education study cycles in national or international institutions (crediting of certified training), as well as previous professional experience and any post-secondary school training or education. As such, the IPB promotes the crediting of the student's prior learning when arriving at the institution. Aiming at a quick and full integration of the student in his/her new education programme, the recognition procedures must be submitted when enrolling at the IPB.

The European Credit Transfer and Accumulation System (ECTS) comprises the adoption of a series of tools which enhances transparency and establishes the necessary conditions for an approach between higher education institutions and, as such, enlarges the range of options for students. The use of this system improves comparability, mobility and full recognition of students' academic results. The Polytechnic Institute of Bragança makes use of the ECTS as well as of the principles of the Bologna declaration in all of its programmes and also in the implementation of mobility among higher education institutions intra- and extra-EU.

Internationalisation in IPB

The internationalisation of the IPB is one of its current strategic challenges, due to the awareness that this will be a positive factor for differentiation among higher education institutions. The last decade has confirmed the IPB as one of the institutions that most extensively promoted academic mobility in Portugal: over 4,000 students in mobility and over 1,000 visiting teaching and non-teaching staff have transformed the brand of the institution. The results obtained have positioned the institution at a level of prominence both nationally and internationally. Currently, the IPB integrates the Top 100 of higher education institutions with the greatest number of incoming teachers and the Top 500 of institutions with the highest rate of incoming and outgoing students on Erasmus mobility. The experience gained in the European mobility project has catalysed the non-European cooperation, with special emphasis on the Portuguese-speaking countries and regions. The IPB has established an academic network with Brazilian Federal Institutes and Universities, as well as with the Macao Polytechnic Institute, representing an annual mobility of nearly a hundred students and the teaching and research cooperation. The presence of a community of students from African Portuguese-speaking countries is also a reality in the institution as a result of the Institute's involvement in the creation and development of higher education in Angola, Cape Verde, Mozambique and São Tomé and Príncipe. This will decisively contribute to the qualification of human and academic resources. The cooperation with Macao has allowed the establishment of protocols with Chinese Universities, involving the Portuguese and Chinese teaching and the creation of the Centre for Chinese Language and Culture in Bragança. Currently the IPB is a multicultural institution with 17% of international students. The IPB implements mobility within the European Higher Education Area for over 20 years: more than 200 bilateral agreements with HEIs from 24 different European Countries. Expansion of the international cooperation outside Europe: more than 150 cooperation agreements with non-European HEIs (26 Countries). In IPB 25% of the graduates had an international mobility experience during their study programme (Europe 2020 target: 20%).

The internationalisation process in IPB include various international aspects as teaching and administrative activities at different levels. The internationalisation process involves:

- students: recruitment of foreign students, the organisation of exchange programs, as well as individual student mobility;
- faculty: faculty exchange, joint research programs, training in foreign universities, joint training programs and the organisation of intensive programmes; certification issues, the recognition and measurement: issue

of ‘double’ diplomas, credit system, and the international recognition of education, assessment of the quality of education;

- international cooperation: exchange programmes for the administration and management of human and material resources, consulting and information services, and the evaluation procedure and infrastructure.

For IPB the successful resolution of the internationalisation depends on the mutual efforts and close cooperation of the participants - managers and teaching staff of educational institutions, departments, and schools. Likewise, at the same time, the process of internationalisation has been depending of its features that were related and consistent with the educational mission of the IPB, its staffs and financial resources, physical facilities, scientific potential, the number of students. The IPB internationalisation has allowed:

- increase national and international visibility;
- leverage institutional strengths through strategic partnerships;
- increase the academic community within which to benchmark their activities;
- mobilise internal intellectual resources;
- add important, contemporary learning outcomes to student experience;
- and, develop stronger research groups.

One of the major challenges for the IPB in current century is to:

- maintain a highly capable, intellectually, and culturally competent workforce in a fast changing world;
- stimulate bilingual and multilingual learning as a basis for a language policy based on diversity;
- address the challenges of credit and degree mobility discrepancies and institutional cooperation, stemming from substantial differences in higher education systems, procedures and funding;
- recognise the rising reputation of work placements and build options to combine them with language and cultural skills training and study abroad;
- and, support the important role of academic and administrative staff in the further improvement of internationalisation.

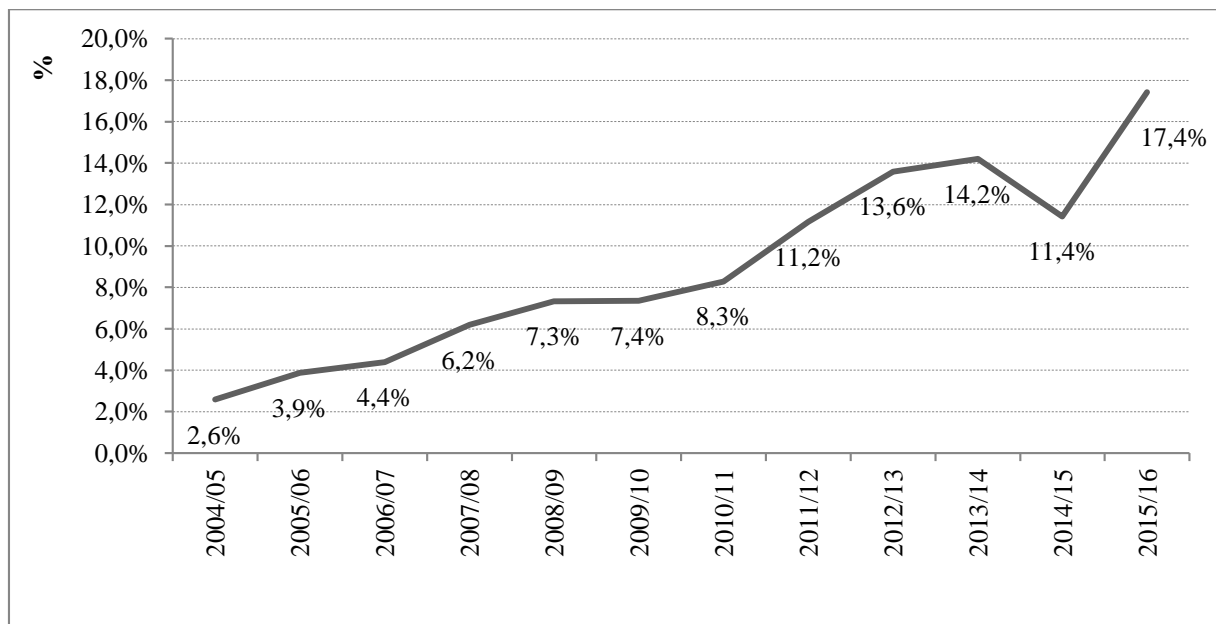
Table 2 shows data on international mobility. It is possible to observe that in the period under analysis there were an important growth, with an annual rate that oscillated between -21% and 45%. The annual average rate of change for both flows, incoming and outgoing, is around 18%. The weight of the number of incoming in the total is around 64,4% and number of outgoing is 35,6%. The increase in number of international mobility since 2004/2005 is a clear evidence of increasing internationalisation in IPB. The obtained data reveals that IPB, as a host institution, gains its popularity among foreign students and shows a significant increase in numbers.

Table 2. Numbers of International Student Mobility in the IPB.

	Academic Year												Annual average rate of change
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
	-	-	-	-	-	-	-	-	-	-	-	-	
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Number of incoming	91	107	118	203	286	303	347	411	441	542	397	557	18%
Number of outgoing	49	96	148	179	203	221	270	366	456	368	323	308	18%
Total	140	203	266	382	489	524	617	777	897	910	720	865	18%
Annual rate of change	-	45%	31%	44%	28%	7%	18%	26%	15%	1,4%	-21%	20%	-

Is possible to see the importance of this type of students for the IPB, as shown in Figure 1. Currently, the weight of international students is 17,4% of the total number of students enrolled in the IPB. This figure is well representative of the internationalisation strategy that the IPB is pursuing, as well as the importance that this influx of students brings to the regional economy. The trend has been growing over the years.

Figure 1. Weight of international students in the total number of students enrolled in the IPB.



Most of the students received in the IPB are of European origin. According to the main countries and since the academic year 2006/2007, foreign students in the IPB come from Czech Republic, Denmark, France, Italy, Lithuania, Poland, Romania, Spain and Turkey.

CONCLUSIONS

This study suggests that internationalisation in IPB needs to continue, develop, and expand; especially since globalisation trends make it more pertinent to the understanding of various cultures. In order for IPB to be competitive and feasible in the global market, there needs to be a sustained goal in internationalising teaching, learning, and practices. The increase in number of foreign students since academic year 2004/2005 is a clear evidence of increasing internationalisation in IPB and a sign for the regional development.

There is a need, in an environment of increased dominance of English as the language of communication in research and education, to stimulate bilingual and multilingual learning at the IPB as a basis for a language policy based on diversity in European higher education.

Assumed the possibilities for work placements under ERASMUS+ is leading to stronger growth in credit mobility for work placements than study, there is a need for pay attention to be given to the importance of work placements in internationalisation of higher education of IPB.

In the emphasis on rising competitiveness, increased self-funding and graduate employability, the important role of IPB in social engagement and in the development of global and European citizenship for students and staff must not be lost or forgotten.

The IPB should be focus on partnerships and collaboration that recognise and respect the differences in contexts, needs, goals, partner interests and prevailing economic and cultural conditions; and should be given priority to the following areas of development: improving and enhancing the quality and diversity in programmes involving the mobility of students, academic and administrative staff; increasing focus on the internationalisation of the curriculum and of related learning outcomes; gaining commitment on a global basis to equal and ethical higher education partnerships.

In summing up, the future of IPB looks potentially optimistic and bright, however future positive development and impact will only happen if the several stakeholders and participants maintain an open dialogue about benefits, means, opportunities and obstacles in this ongoing process of change. The internationalisation is also challenged by increasingly profound social, economic and cultural issues; such as the financial crisis, demographic decline, immigration and ethnic and religious tensions.

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Investigating Ethical Information Sharing in Facebook Within Educational Context Through Adopted Papa Framework

Seren BAŞARAN

Computer Information Systems

Near East University

Lefkosa 98010, N. Cyprus, via: Mersin 10 Turkey

seren.basaran@neu.edu.tr

ABSTRACT

The pervasiveness of social media usage especially in educational context requires a reconsideration of current information ethics frameworks. This study primarily aims to identify the most common ethical challenges of social media usage in educational context along with the detection of most popular features of social media particularly Facebook. It also attempts to associate identified categories to Mason's PAPA framework for information ethics in social media usage. Up to date, there is no scale assessing particularly ethical information sharing in Facebook through ethical scenario approach. The framework was tested and validated through 24 scenarios of ethical dilemmas developed by the researcher and was administered to university students (N=100, with 44 females and 56 males, 61 undergraduates and 39 graduate) at the 2016 academic semester. Validity and internal consistency of the scale provided satisfactory results for this instrument to be used for future studies. According to the results of this study, students responded mainly with "unethical" to "questionable" options to privacy, accuracy, property and accessibility issues in educational use of Facebook. The results indicated that adopted framework is robust and it could be easily used in teaching and learning practices. Findings also revealed that PAPA framework should be expanded/refined to consider ethical issues that are specific to current status of instructional related information sharing facilities in social networking sites.

Keywords: Ethical scenarios; Facebook; information ethics; PAPA; social media usage

INTRODUCTION

Constantly evolving information technology has undoubtedly proliferated information sharing through social networking sites over the last decade while not only leading to exacerbation of already existing ethical challenges but also emerging new ethical complexities as well. This widespread and rapid use of IT has also penetrated the area of education without proper integrity of the social media advancements, hence the instances of unethical misconducts eventually inflate. It is not surprising to state that gathering sensitive, private information has now become 'a piece of cake', if an individual owns a social networking account. Through the use of internet and growing number of users at social networking sites gathering information no matter it is public or private, has become easier than ever. At present, Facebook is among the most popular and widely used social networking sites. Facebook statistics revealed that for the first quarter of 2017, Facebook had 1.94 billion monthly active users and 1.28 billion people daily active users which represents 18% increase year over year (Facebook, 2017).

The ubiquity of internet technologies and their superficial integration in educational settings needed urgent revision of ethical principles. Zimmer (2010) pointed out ethical dilemmas derived in social media adoption in educational context with an example involving Facebook where researchers use Facebook user data which failed to protect privacy and anonymity of the users who were subject to that educational research. Henderson et al. (2014) also pinpoints numerous threats of using social media in education context as; consent, confidentiality, boundaries and recognition of illicit activity.

About 3 decades ago, Richard Mason must have anticipated such emerging issues therefore he proposed that particularly personal privacy was in danger with immense growth of information technologies requiring urgent ethical framework to assess information via decision making (Mason, 1986). For this purpose, Mason suggested his pioneering framework which is currently known as PAPA standing for Privacy, Accuracy, Property, and Accessibility in order to resolve growing ethical complexities encountered within evolving information technology emergent daily life activities. In this framework Mason (1986) solely addressed four dimensions of the information ethics as privacy, accuracy, property and accessibility. Privacy refers to the nature of information and its' protection. Accuracy is about the correctness of the information and precaution taken if it is not. Property deals with the ownership of the information and how this ownership is determined. Accessibility is defined whether one could obtain the information or not and its protection.

Parrish (2010) went further and adapted these four aspects of PAPA to emerge four fundamental ethical principles for information sharing in social networking sites. These principles are briefly defined as; the privacy

of oneself as well as others related to the information shared should be protected; one is responsible for the accuracy of the information shared. Information that belongs to the original creative work of others should only be posted with permission. Users are responsible to check the authenticity of the stakeholders (a person or a software) in which the information shared is accessed. From these principles the following questions may emerge referring to the original discussion in Mason's work about privacy, accuracy, property and accessibility accordingly:

To what extent the information about oneself should be disclosed or undisclosed? How much of the information should be made public for third party to view? Under what security measures are taken to protect privacy on one's information? How much of the information could be accessed by others? How accurate is the information shared? Who will be responsible for accuracy of the information shared? What kind of information is safe to share? Is the information shared someone's original creative idea?

PAPA framework developed by Mason (1986) is used to identify the major ethical issues in computer usage. Many researchers have applied PAPA framework in ICT ethics which is under computer ethics. Numerous terminology are used in these studies in conjunction with each other as ICT ethics, IS ethics, IT ethics and Information ethics that could all be collected under computer ethics (Ming et al., 2015). Information ethics and computer ethics are stated to be used interchangeably in the literature (Bynum, 2008). Information ethics is the field of study that explores ethical complexities derive from the evolving development and pervasive use of information technologies (Masrom et al., 2011). Information ethics are reported to gain utmost importance as one of the most problematic areas inspected in numerous studies (Taherdoost et al., 2013)

A study done by Ming et al. (2015) portrays the results of a systematic literature review on computer ethics between 2010-2014 with 40 studies which showed that conducting surveys are most widely used by 83% of the studies and students are the mostly the target participants in 73.3% of the studies where PAPA is the most widely used framework in theoretical studies and second widely used framework in empirical studies after general issues in computer ethics. Ming et al. (2015) also remarked that studies involving PAPA framework mainly adopt scenario based approach to evaluate the ethical judgment of respondents in various supplied situations which represents one or more combination of PAPA dimensions. Scenarios in IT related ethical dilemmas of PAPA dimensions are used in either confirming current ethical issues or raising new emergent ethical concerns (Parrish, 2010; Peslak, 2006). Such studies often concentrated on evaluation and judgmental decision making of given scenarios (Andrews et al., 2015; Leonard&Cronan, 2005; Liu&Yishan, 2012; Masrom et al., 2010a; Masroom et al., 2011; Su, 2013; Pham, 2014; Taherdoost et al., 2010, Martin&Woodward, 2011). It was pointed out by Andrews et al. (2015) that using frameworks and scenario approach are beneficial for better comprehension of ethical challenges of social media and it minimizes ethical misconduct by stakeholders.

Hence, the significance of ethical information sharing in social media are emphasized by multiple studies (Parrish, 2010; Taherdoost et al., 2013). Ming et al. (2015) particularly warn institutions to take measures on the establishment of ethical educational environment. Masrom et al. (2010a) emphasized the significance of investigating ethical behavior of particularly students, in order to reduce unethical practices to great extent. Bubulka (2012) conducted a survey to 208 individuals to identify relationships between age, education level, relationship status and information sharing. The findings of the study revealed that there is a relationship between age and the information sharing. While young individuals with single status share more than older and married ones, there is no consistent trend between education level and information sharing habits. The results of the study indicate that young, single individuals are more prone to accessibility, privacy issues than their elder married counterparts.

From brief review of the literature presented above, it was concluded that Mason's PAPA framework on privacy, accuracy, property and accessibility are still main problems that awaits to be resolved. Students still comprise the main target group of the relevant studies on ethics. Till today, no scale assessing particularly ethical information sharing in Facebook in education through ethical scenario approach was located in the literature. In the light of above, the primary aim this study is to develop a valid, reliable scale based on the assessment of ethical scenarios to identify most commonly occurring ethical challenges of social media usage in educational context. In addition, this study sought to associate identified categories to Mason's PAPA framework for information ethics in social media particularly Facebook.

METHODOLOGY

24 ethical scenarios were developed by the researcher which were based on the extant literature mainly PAPA framework, the previous experience of the researcher working as full-time instructor and the observation of the incidents encountered by fellow instructors. The scenarios involve the concepts of un/ethical practices that prevail in information sharing within the educational context in Facebook which comprise a short description of

a situation. They are based on similar situations which are designed in a way that actual attitude of participants is reflected in their rating of the particular situation. These scenarios are assessed by the participants by choosing one from five Likert type options as; ‘crime’ (unethical and illegal. The person responsible should be accused for a criminal act), ‘unethical’ (a contrary act to your moral and ethical standard, but not a crime), ‘questionable’ (there is some question as to the moral or ethical aspects of the action), ‘acceptable’ (the act is acceptable to you, but you may have some doubts due to other’s beliefs), and ethical (there is no question that the action is correct in every sense of the word). These options are used in similar studies (Harris, 2000; Martin&Woodward, 2011).

After checking the wording, grammar of the ethical scenarios an expert opinion was taken from fellow instructor about the clarity of each scenario. After corrections, the scale consisting of 24 ethical scenarios was administered to 100 students of the faculty of economics and administrative sciences during the 2016-2017 academic semester where the researcher works as full-time instructor.

The data was analyzed by using SPSS v17. The demographic information about participated students were given below in Table 1. Participants are 44% female and 56% male students with age ranges 57% are between 17-21 and 43% are between 22-26. In addition, 61% are undergraduate and 39% are graduate students. Participants are from CIS (31%), marketing (30%) and business administration (39%) departments. All participants own a Facebook account of which 96% of them visit frequently. 90% of the students responded that it is good idea to become Facebook friends with instructors while only 58% of them use Facebook for personal communication with their instructors.

Table 1: Demographic information of participated students

		Frequency	Percentage (%)
Gender	Female	44	44
	Male	56	56
Age	17-21	57	57
	22-26	43	43
Education Level	Undergraduate	61	61
	Graduate	39	39
Department	Comp. Information Systems	31	31
	Marketing	30	30
	Business Administration	39	39
Having fb account	Yes	100	100
	No	0	0
Facebook visit	Often in a day	86	86
	Everyday	10	10
	Few times in a week	1	1
	Once a week	2	2
	Once a month or less	1	1
Fb friends with inst.	Yes	90	90
	No	10	10
Fb comm. with inst.	Yes	58	58
	No	42	42

RESULTS

Validity and Reliability of the Scale

Since the scale was developed from scratch, numerous exploratory factor analyses were carried out with 24 5-Likert option ethical scenarios to obtain evidence for construct related validity and to associate the identified categories with Mason’s PAPA framework. In line with the reliability analysis, the final factor analysis was done with 21 items which 3 items were removed. The reason is explained below. The measure of the sampling

adequacy was obtained as 0.66 considered as mediocre (Kaiser, 1974) and a KMO value greater than .50 indicating suitability for further factor analysis. Bartlett's test of sphericity was found to be significant ($\chi^2 (190) = 406.31, p < .05$). The communalities were all higher than .3 showing each item shared some common variance with other items. Principle components analysis was executed to determine and compute composite scores of the underlying factors. 4 factor solution was determined by Varimax rotations of the factor loading matrix. The number of factors were fixed to 4 in the analysis. The four factor solution explaining 43.93% of the variance, was chosen with respect to literature and the 'leveling off' of eigenvalues on the Scree plot after four factors as shown in Figure 1 below. The descriptive statistics, eigenvalues, percentage, and cumulative percentages and internal consistency values of these 4 factors were presented in Table 2. The factor loading matrix is shown in Table 3. The results yielded robust validity of the scale.

The Cronbach's alpha reliability was calculated in order to obtain internal consistency results for the scale. Reliability analysis was carried out with 24 items but 3 items (Q3, Q10, Q23) were removed at later stages of the analysis in order to improve internal consistency. These 3 items were detected to have Corrected Item total Correlation to be less than .30. The overall Cronbach's alpha reliability for 21 items was calculated to be .78 which is considered as acceptable (George & Mallery, 2003). The internal consistency results for four factors that were determined by the factor analysis are; privacy (5 items) is .71, accuracy is (5 items) .75, property (6 items) is .80 and accessibility (6 items) is .72. Therefore, the results yielded acceptable to good values for sub dimensions of the scale.

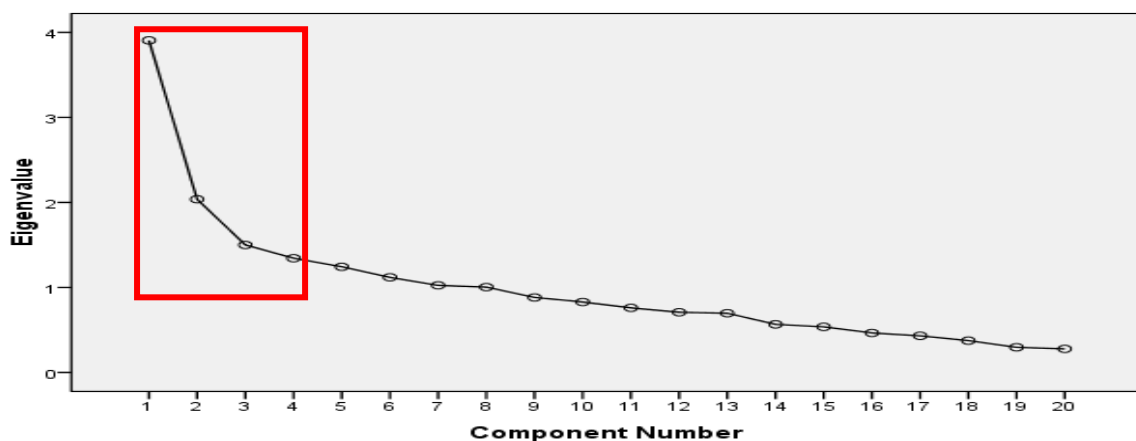


Figure 1: Scree Plot

Table 2: Validity and reliability values of the scale

FACTOR	No. of Items	M	SD	Total	% of Variance	Cumulative %	Cronbach α
Privacy	5	2.28	0.59	3.97	19.53	19.53	0.714
Accuracy	5	2.63	0.66	2.06	10.18	29.71	0.748
Property	6	2.88	0.66	1.62	7.50	37.21	0.802
Accessibility	5	2.20	0.58	1.43	6.72	43.93	0.725
Total	21	2.54	0.46				0.777

Overall Student Responses

From mean scores represented in Table 2 above, overall students' responses are between 'unethical' to 'questionable' for each dimension of the scale where property related scenarios are rated as highest and accessibility related scenarios are rated as lowest. The overall responses of the entire scale also lie between 'unethical' to 'questionable'.

From the Table 3 below the responses for accuracy, lowest rating was given for Q11 and highest rating is given for Q9. For property dimension, highest rating was for Q18 and lowest rating was given for Q13. For accessibility dimension highest mean score was given to Q20 and lowest rating was given to Q19. For privacy the highest rating was given to Q2 and lowest rating is given to Q5. All the responses except for Q5 change between 'unethical to questionable' whereas Q5's response is between 'crime' to 'unethical'.

Table 3: Factor loadings of 21 items

FACTORS	1	2	3	4	M	SD
ACCURACY					2.63	.66
Q8- Teaching assistant who is responsible to evaluate plagiarism at students' reports posted in course' fb group, did not inform instructor about a student who had done considerable amount of plagiarism. Student told to assistant that if he fails from this course his family wouldn't allow him to pursue his degree anymore.	.769				2.47	1.27
Q11- Student assistant is helping to instructor to enter final grades for the course while he is at overseas conference. He sends final grades through fb message to the assistant. Assistant provides a financial benefit from peers by altering the grades of students.	.765				2.15	1.18
Q7- Student submits daily fake check-ins in fb and sends fake photos from office regularly to her instructor about the mandatory internship program that she has to complete which in fact she does not physically attend.	.751				2.69	1.05
Q12- Student who obtained high grade than he expected due to some announcement mistake at course's fb group did not make any objections upon correction of his grade.	.745				2.92	1.01
Q9- Student claims to instructor that materials at course's fb group were not accurate so that she could not properly study to exam and hence it was not a valid exam.	.743				2.93	1.01
PROPERTY					2.88	.66
Q17- Student writes an application to obtain personal information and invites fb friends to use this app.	.735				3.15	1.07
Q15- Instructor shares her course presentation photos with fb friends another colleague who is friends with the instructor and who is her superior took her photo and put it into a public website of the faculty for advertising purposes.	.720				2.87	1.16
Q18- Student shares lecture notes of the course that she is taking, with a friend on fb who is not registered to the course.	.715				3.42	1.07
Q14- Student records video of the instructor lecturing without her knowledge and shares it in his personal fb account.	.710				2.76	1.17
Q16- Student sells digital books to fellow students which he obtained from an instructor who shared them at course fb group for educational purposes only.	.709				2.72	1.20
Q13- Student took photo of his midterm exam paper and posts it on his fb wall, while instructor distributed papers to students during lecture for students to see their results.	.701				2.38	1.14
ACCESSIBILITY					2.29	.58
Q20- Instructor accidentally discovers identities of students who submitted low ratings for his course evaluation from university's course-instructor evaluation results since they were collected directly from fb accounts of students.		.699			2.62	.97
Q24- Student who is assigned to submit course related material to course's fb group is also sending commercial spam messages to subscribed students.		.680			2.22	1.10
Q22- Student uses lab computer that instructor used previously during lecture and finds out that his fb account is still connected. A message to another instructor catches her eye regarding the content about her letter of recommendation upon her request in an unflattering way.		.671			2.21	.99

Table 4: Factor Loadings of 21 items continued...

FACTORS	1	2	3	4	M	SD
ACCESSIBILITY (cont.)						
Q19- Student, who is officially registered, subscribes to a course's fb group and sends negative posts about the course.		.669			2.08	.91
Q21- Instructor hears from other students about one of her student starting a negative campaign about him in student's fb, since as his advisor he refused to not to tell about his parents his failing from courses and not participating once to any classes sessions.		.650			2.32	.95
PRIVACY						
Q5- Student created a fake fb profile about an instructor and sends requests to instructor's all fb friends since instructor did not accept his fb request.					2.29	.59
Q4- Master student sends a questionnaire to his fb friends for his thesis. The questionnaire includes highly specific information on domestic life etc. The student then decides to use this data for commercial purposes.				.645	1.73	1.04
Q6- Student who is not fb friends with instructor discovers from another instructor's timeline post who is friends with him that the instructor is on vacation at his home town and he visits her vacation place to convince her to higher up his final grade.				.639	2.45	1.14
Q1- Student who is not fb friends with instructor sends fb messages as "You should announce final grades at once!" although the official deadline for announcing final grades according to academic calendar was not yet exceeded.				.621	2.29	.89
Q2- Student who is not fb friends with instructor sends fb messages insisting that instructor should assign higher grade if not, he would lose his scholarship.				.603	2.56	.96

DISCUSSION AND CONCLUSION

The motivation of this research is due to the lack of adequate tools to assess ethical decision making in information sharing at social media within the scope of educational context. The aims of the study are three fold; to develop a valid and reliable scale based on the assessment of 5 Likert option ethical scenarios, to associate determined dimensions of the scale to Mason's PAPA framework and lastly to identify common challenges on ethical usage of social media particularly Facebook within the scope of educational context.

In this respect, developed scale proved to yield robust results in terms of validity and reliability and it can be easily adjusted to other social networking tools and educational environments which proved to be useful in identifying ethical challenges through scenarios. In addition, the ethical scenario approach is still widely used in existing literature to offer similar situations that stimulate respondents' decisions on a given situation. As compared to former studies this research attempted to include more scenarios than ever to identify different aspects as possible. In this respect, this scale is unique to include more scenarios than existing studies using scenario approach in the literature.

The reason behind associating identified categories with PAPA is that, privacy, accuracy, property and accessibility are still main unresolved issues that are faced in social media usage today. However, constantly evolving facet of technology and hence social media and it's premature integration into educational settings have emerged new situations requiring attention from ethical perspective which cannot be classified under the current, available framework. While Leonard&Manly (2007) and Ming et al. (2015) stated that PAPA framework constitutes an applicable basis to make healthy judgements about ethical considerations in information sharing on social media, Multiple studies argued upon whether traditional ethics frameworks (i.e. PAPA) are adequate enough to cover current IT related ethical considerations (Leonard&Manly,2007; Parrish, 2010; Stahl et al., 2012). As cited in Parrish (2010), Fairweather (2003) stated that some recent emerging challenges could not simply be classified under four main dimensions of PAPA framework. Further, Parrish (2010) argued upon the static nature of PAPA framework which he claims to concentrate on information and not on evolving, interactive feature of technology. For example, one study done by Woodward et al., (2011) proposed different factors such

as; privacy, low risk and high risk property misuse and responsibility. In another study conducted by Henderson et al. (2014) factors like; consent, traceability, and public/private boundaries were highlighted.

Thus, the current framework should be refined and/or expanded to involve other emerging issues as well. Some aspects which are not the comprehensive coverage that could be listed as; consent, confidentiality, spamming/spamming, public bashing, dishonesty and distortions, distorted endorsement and improper anonymity, misuse of free expertise and contests, opportunism, committing crimes, stalking, cyber bullying, information theft, fraud, moral cultural values and misconceptions, equity and boundaries (Barry, 2014; Ocholla, 2013; Stahl et al., 2012).

LIMITATIONS AND SUGGESTIONS

This study represents an initiating avenue for future studies. Current study is restricted to undergraduate and graduate students from one faculty only. Further research could be carried out with sample from more diverse groups involving students from other departments to see whether they have similar views or not, instructors to compare views with students to identify any existing difference or similarity, other institutional professionals to compare and contrast their opinions in order to obtain deeper understanding of the ethical situations and how or from where their decisions are influenced from. In addition, study could be conducted to identify how different cultures react.

The scenarios were developed by the researcher in line with PAPA framework and Facebook usage habits also by considering former experiences of the researcher herself and colleagues. In future, these scenarios could be easily elaborated to cover other social networking settings as well.

This study based upon honest responses of participants to given ethical scenarios and it is evaluated quantitatively. While assurances were given to participants about the confidentiality and anonymity of their responses, whether their answers truly reflect their ethical acts are still debatable. However, using quantitative and qualitative methods together will definitely improve the trustworthiness of the responses.

The current study has focused only the information sharing aspect of social media within educational context. Other frameworks are advised to be integrated as for future work to expand the boundaries of the ethical decision making.

Stick to the point that the main aim of the study is to develop a valid, reliable scale, hence this study did not attempt to identify any differences with respect to basic, demographic attributes such as gender, education level and age. Further research could be focused on detecting any underlying differences among numerous demographic attributes.

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Investigating Formative Assessment Strategy to Chemistry Habits of Mind (Chom) of Buffer Solution Concept in Learning Chemistry

NAHADI, Sjaeful Anwar

*Department of Chemistry Education
Universitas Pendidikan Indonesia
Indonesia
nahadi@upi.edu*

Dewi Kharisma WINDANI

*Department of Chemistry Education
Universitas Pendidikan Indonesia
Indonesia*

ABSTRACT

In this research, we investigate formative assessment strategy to Chemistry Habits of Mind (CHOM) of buffer solution concept. The method used in this research is Pre-Experiment with one group pretest-posttest design. The instruments used are written test, observation sheet, questionnaire and an interview guide. Implementation of formative assessment applied is the making of the concept map, observation of practice performance, and preparing practice report. The habits of mind category refer to the habits of mind developed by Marzano with three categories: self-regulation, critical thinking, and creative thinking. The results of the study as a whole show that the improvement in students' concept mastery has an average percentage of N-Gain of 78.5% with the high criterion. This increase also occurred in the upper, medium and lower groups with the average percentage of N-Gain of 91.67%, 77.50%, and 62.50%, respectively with the high criteria for upper and medium groups, and medium criteria For the lower group. The highest increase in student's overall habits of mind in the self-regulation category with an increase in 10.67% in point 3. This increase also occurred in the top categories of self-regulation and creative thinking with an increase of 16.66% in points 4 and 16.66% on point 3. The middle and lower group also experienced the highest increase in the self-regulation category with an increase of 13.75% each on points 3 and 10% in point 4.

INTRODUCTION

Science education is not contributing as it could to understanding and addressing such global issues as Feeding the World's Population, Ensuring Adequate Supplies of Water, Climate Change, and Eradication of Disease in which we all have a responsibility to play a role. Students are not made aware of how the solution of any of these will require applications of science and technology, along with appropriate and committed social, economic and political action. The concept is an abstraction professionals that represents a class of objects, events, activities, or relationships, which have the same attributes (Wibowo, 2016). As long as their school science is not equipping them to be scientifically literate citizens about these issues and the role that science and technology must play, there is little hope that these great issues will be given the political priority and the public support or rejection that they may need. (Linder, Ostman, & Wickman, 2007).

Various efforts continue to be done by the government and society to improve the quality of education. Similarly, in learning and assessment as an important part of education. In the field of assessment, various innovations are done to improve the quality of learning outcomes and learning process, one of them is by applying formative assessment. Formative assessment is one effective strategy, because in formative assessment students are fully involved in the learning process. Students can monitor their own understanding, acknowledge their weaknesses and strengths, and become aware of the learning strategies that can help them (Aydeniz and Pabuccu, 2011). Formative assessment strategy is believed to be able to increase process activity and student learning outcomes (Nahadi et al., 2015). A review of 580 articles from more than 160 journals over a period of nine years concluded that formative assessment had a positive impact on student learning outcomes and student motivation (Yin, et al., 2008). Formative assessment can also support the expectation that all children can learn at a high level and make students who have poor performance and ability willing to invest in further learning (Mehmood et al., 2012). The application of formative assessment helps teachers obtain feedback on the learning process developed so that students' progress can be monitored (Rustaman, et al., 2013; Clark, 2011; Havnes, et al., (2012).

However, formative assessment will not be a formative assessment if there is no feedback process in it. As stated by the National Research Council (in Furtak, 2009) that formative assessment is the process of setting learning goals, comparing learning objectives with information obtained by students, and providing feedback to students to help achieve their learning objectives (Sadler, 2010; Shute, 2008; Wiliam, 2011). Feedback needs to be done continuously in order to obtain information about the weaknesses in the results or the learning process so that it can be done immediately. Feedback can encourage students to improve learning motivation, correct errors made

or leave negative things that become weaknesses in their learning. One of the formative assessment strategies developed in this research is by making concept maps. Drafting a concept map is one way to find out how far the students' knowledge of a subject. In learning, concept mapping employs students to think creatively. Creative thinking belongs to the category of habits of mind. Marzano, et. Al., (1993) reveals that habits of mind are divided into three categories: self regulation, critical thinking, and creative thinking. A habits of mind is made up of many skills, attitudes, omens, past experiences, and trends (Costa and Kallick, 2012). Some research has been done to prove the positive impact of habits of mind for students, individuals, and entire school staff (Costa and Kallick, 2012). Describe the Scientific Habits of Mind Survey (SHOMS) developed to explore public, science teachers', and scientists' understanding of habits of mind (HoM), the SHOMS will prove to be a useful tool for educators and researchers who wish to investigate HoM for a variety of participants (Çalik and Coll, 2012). Indicators of habits of mind need to be applied to students in order to act intelligently, successfully in academics and as a provision to face life. Habits of mind can be applied through formative assessment because in formative assessment the students are involved in the learning process directly. Development of habits of mind in students to practice good thinking habits so as to produce good learning as well and help students to explore further their knowledge. Students must master the concepts taught as a provision to continue to higher education level. Habits of mind will indirectly support the mastery of student concepts. We suggest that habits of mind potentially valuable ways to teach, using classroom discourse and argumentation, and case-based issues in order to enhance scientific literacy. We note that while the above literature argues that scientific thinking including HoM should be what scientists actually display including 'scientific attitudes', there is not much literature that actually explicates this (Coll & Taylor, 2004; Coll, Taylor, & Lay, 2009). We propose that engaging in habits of mind and teaching science would benefit from a deeper understanding of how scientists think (Gauld, 2005), a useful way to characterize how scientists think is what he terms SHOMS.

This research also needs to be lifted because the habits of mind have not been implemented by many researchers in the field of chemistry. The goal this research is to identify the implementation of formative assessment strategy to improve the mastery of concept and habits of mind of students on the material of buffer solution. These objectives research is investigate formative assessment strategy to Chemistry Habits of Mind (CHOM) of buffer solution concept. The specific objectives of describing the implementation of formative assessment of conceptualization, habits of mind before and after the implementation of formative assessment strategies, and student responses to the implementation of formative assessment strategies on buffer material materials.

THE STUDY

The methodology used in this research is Pre-Experiment with one group pretest posttest design. Feedback used in the form of feedback aimed at the learning process by verbal and written feedback (commenting on concept maps and student lab reports). Subjects in this study were students of class XI one private high school in Bandung, amounting to 26 students. The study was conducted in five meetings. Instrument in this research is written test used to measure mastery of student concept, observation sheet habits of mind used to describe and analyze habits of mind of student at the time of learning, interview guide used to get additional information supporting questionnaire and observation data and questionnaire of student response Is used to describe students' responses to the implementation of formative assessment strategies on the subject matter of the buffer solution that students have studied.

The written test is in the form of an objective test (multiple choice) of seven questions with five answer choices and an essay test of five questions. The habit of mind observation sheet is a list of tables filled with a check mark on the appropriate value column. Assessment indicators consist of a range of values 1 - 4 that refer to the rubric. The habits of mind search section were adopted and developed by Marzano et al. (1993) and Sriyati (2011). This rubric consists of several questions consisting of three categories: self regulation, critical thinking, and creative thinking. The interview guide is in the form of a structured interview (contains brief questions that have been arranged in a systematic and complete). Questionnaire responses students in the form of 25 questions with closed answers by choosing strongly agree, agree, disagree and strongly disagree. Mastery test concept used previously validated first then tested. After the trial is done analysis of test results (reliability, level of difficulty, and distinguishing power). Afterwards N-Gain was calculated to see the improvement of conceptual mastery, analyzed, and discussed. For habits of mind percentages were made before and after which then compared and made descriptions of which categories were most developed. Student responses are also made a percentage then made a description.

FINDINGS

Implementation of formative assessment strategy that is done greatly affect the mastery of the concept of students, especially from feedback provided by the teacher. Both feedback from concept mapping, practical performance, and preparing practical reports help to improve students' understanding which will also affect the mastery of student concepts. From some of the strategies applied by students argue that the most influential on the mastery of the concept is the performance of practice because the lab is a kinesthetic learning that involves

all the five senses so directly recorded in the long-term memory of students. In addition, students also consider that this practical learning is very interesting. This is because by many factors among students rarely do practicum so that students look more enthusiastic in carrying out the lab. Students look more critical, disciplined, systematic, conscientious, and show their curiosity. This is also supported by the results of interviews with students is "after following the learning of buffer solution with formative assessment strategy to make students more motivated to study chemistry especially in learning practicum".

From this research as a whole, the average pretest is 27,69, while the average post test is 82,96 and N-Gain are 78,50 or 0,785. As stated by Hake (1998) that when $g > 0.7$ then the increase in mastery of the concept included in the high category. The increase is due to the implementation of formative assessment strategies. These improvements prove that students have actually experienced the learning process. Gagne states that learning is a process by which organisms change behaviour due to experience (Dahar, 1996). In this case, students are able to master the material that has been studied with various formative assessment strategies provided, indicated by the students' ability to answer written tests of conceptual mastery. The varied formative assessment strategies in this study can help create a cognitive structure that can bridge the learner's early knowledge and related learning experience. This causes the understanding to be more organized and deep so that it can link between one concept with another concept on buffer material. When viewed from the grouping of students the mastery of the concept of top, medium, and bottom concept can be seen in Figure 1 below.

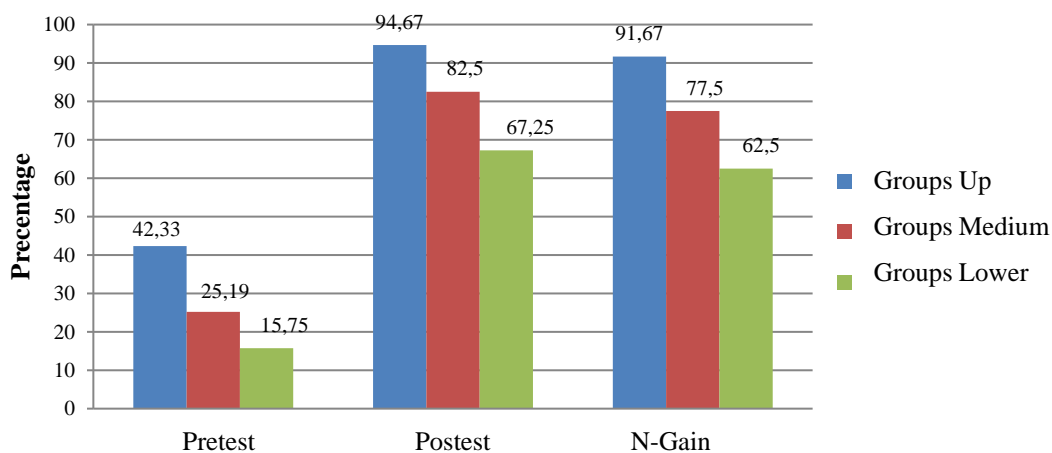


Figure 1. Average Pretest, Posttest, and N-Gain Groups Up, Medium, and Lower

The upper group N-Gain score is 91.67 or 0.9167, the increase in mastery of the concept belongs to the high category while the moderate group N-Gain is 77.5 or 0.775 also belongs to the high category and the lower group N-Gain is 62, 5 or 0.625 which is in the medium category. This shows that the mastery of the students' concept of all groups, both upper and lower groups, has increased especially in the upper groups. The increase is due to the implementation of formative assessment strategies. In this study the upper group has a higher concept mastery improvement when compared with the middle and lower groups. This is because the capacity of upper group students' abilities differs from the capacity of the students in the middle and lower groups. In addition, upper group thinking ability is higher when compared with middle and lower groups. So the upper group has the ability to apply higher concepts that must have been preceded by the development of the ability to remember and understand the concept than the middle and lower groups. Similarly, the group was compared with the lower group. The group is having the ability to apply the concept higher when compared with the lower group. To describe the effect of the implementation of formative assessment strategy on each category of habits of mind (self regulation, critical thinking, and creative thinking) can be seen in Figure 2, Figure 3, and Figure 4.

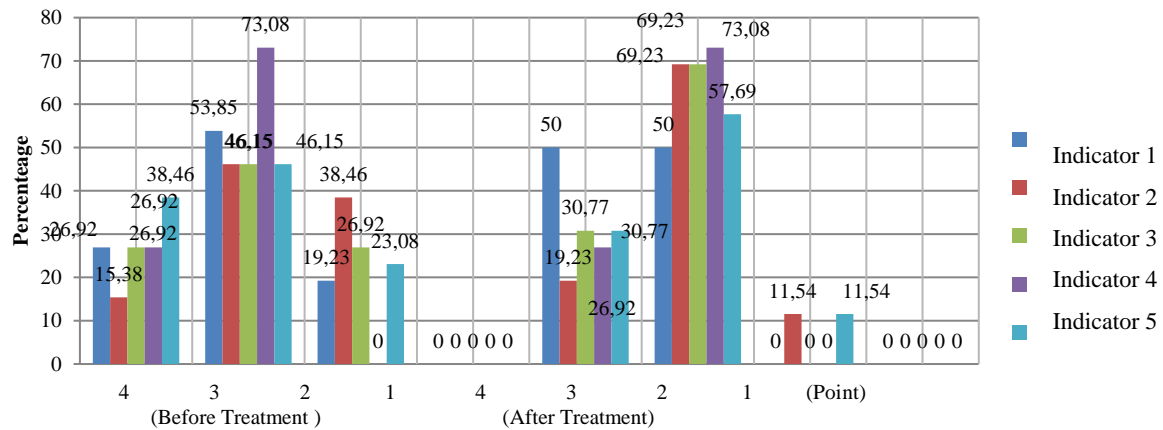


Figure 2. Comparison of Habits of Mind Students Before and After Treatment On Self Self Regulation Category Description:

- Indicator 1 = Recognize thinking,
- Indicator 2 = Make plans effectively,
- Indicator 3 = Recognize and use required information sources
- Indicator 4 = Sensitive to feedback
- Indicator 5 = Evaluate the effectiveness of the action

From Figure 2 it can be explained that the formative assessment strategy is given feedback so that the students directly realize the mistake of the concept / concept is wrong so at that time also the students directly evaluate the effectiveness of his actions. At the time of learning, students may initially only use informed sources of information but after a formative assessment strategy the students become aware of the need to use the necessary information resources because the demands must solve the problems in the given material.

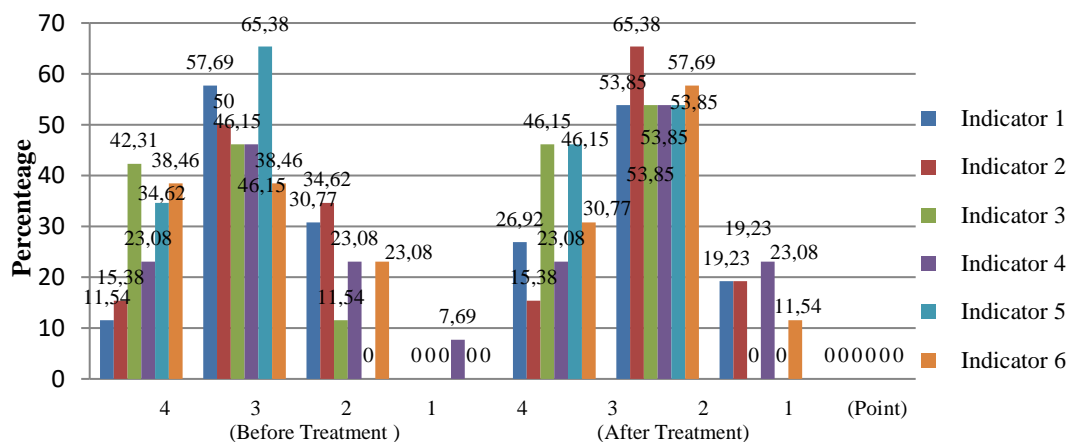


Figure 3. Comparison of Habits of Mind Students Before and After Treatment In Critical Thinking Category Description:

- Indicator 1 = Accurate and seek accuracy
- Indicator 2 = Clear and seek clarity
- Indicator 3 = Open-ended
- Indicator 4 = Refrain from impulsivity
- Indicator 5 = Ability to hold back when there is a guarantee
- Indicator 6 = Sensitive and know the knowledge of his / her friends

From Figure 3 it can be explained that the problems that exist in the teaching materials make students look for accuracy and seek clarity about the correctness of the solution to the problem posed. During group discussions students learn to be open to the opinions of others, able to refrain from emotion despite differences and students also learn to be sensitive and know the knowledge of their friends so that they can share knowledge during the discussion process takes place both in groups and in the classroom. In addition, at the time of giving feedback students also look for accuracy and clarity of the answers that have been made, are sensitive and open to the feedback given proven by the students directly fix the wrong concept after given feedback.

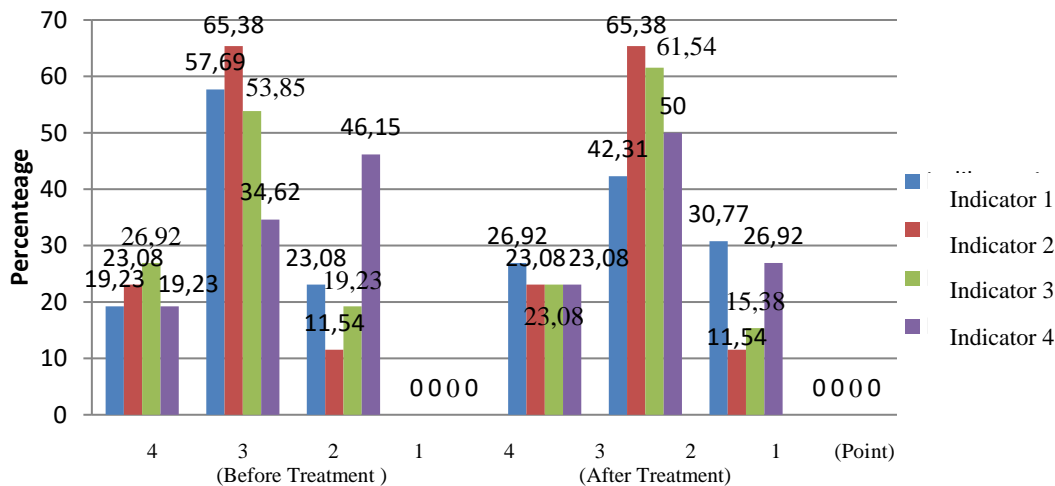


Figure 4. Comparison of Habits of Student Mind Before and After Treatment In Category Creative Thinking
Description:

Indicator 1 = Can be involved in the task even if the answer is not immediately visible

Indicator 2 = Doing business maximizes ability and knowledge

Indicator 3 = Creating, using, improving the evaluation standard made by itself

Indicator 4 = Produce a new way of looking at a situation different from the usual way of general prevailing

From Figure 4, there is 1 indicator that looks interspersed and develops in points 4 and 3 are indicator 4 that is generating a new way of looking at situations that are different from the usual way in general. This is because in the process of learning in the classroom both the theory and practicum students look more eager in following the learning which means students can involve themselves in the task although not yet know the exact answer to the given problem. In the teaching materials given there are problems that require students to design the manufacture of a buffer solution with a certain pH and students use their own way for the design. In addition to the feedback provided to students to improve the evaluation standards made by themselves. The components of the most formative assessment strategy that affect the habits of mind are feedback. Based on Figures 2, 3, and 4 the implementation of formative assessment strategy gives the greatest influence on the self regulation category that is on point 3 which has the highest increase of 10.67%. Followed by the critical thinking category on point 3 which increased by 5.77% and creative thinking category on points 4 and 3 which increased by 1.92%. This is because the formative assessment strategy provided initially affects self regulation. After students realize and improve self-regulating ability then students can develop critical thinking and creative thinking. Other things that affect the formation of habits of mind students are teaching materials, learning methods, teachers, students, facilities infrastructure, media and classroom management. Description of the effect of the implementation of formative assessment strategy on each category of habits of mind (self regulation, critical thinking and creative thinking) when viewed from the grouping of students (upper group, medium group, and lower group) can be seen in Figure 5, 6, 7, 8, 9, 10, 11, 12, and 13.

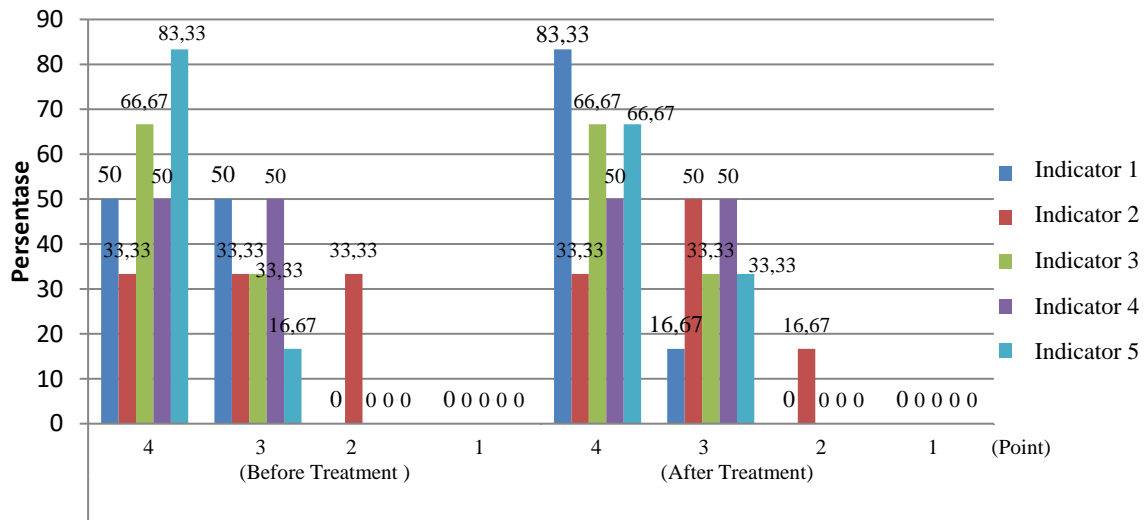


Figure 5. Comparison of Habits of Mind of Upper Group Students Before and After Treatment In Self Self-Regulation Category

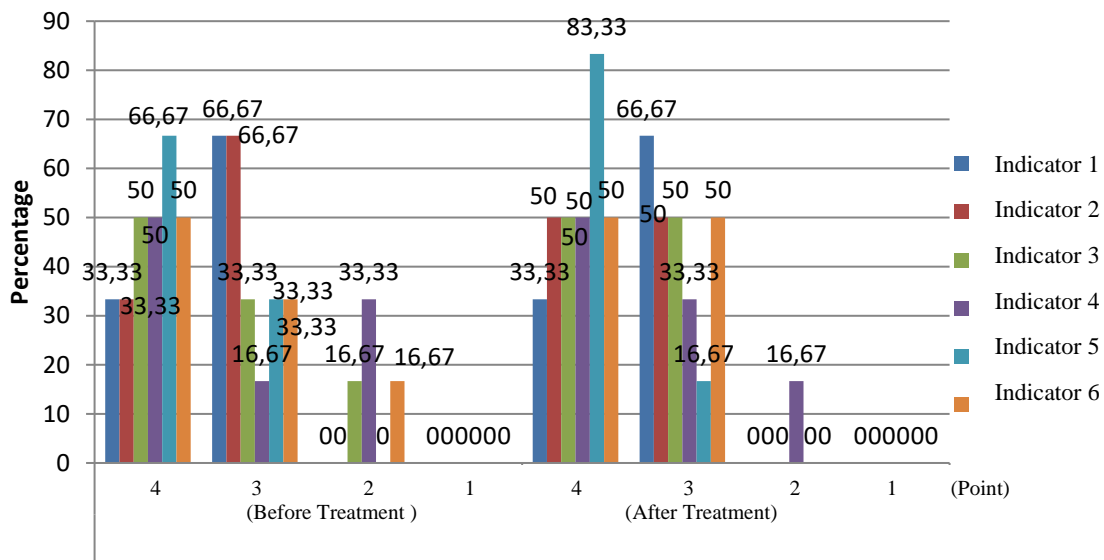


Figure 6. Comparison of Habits of Mind of Upper Group Students Before and After Treatment In Critical Thinking Category

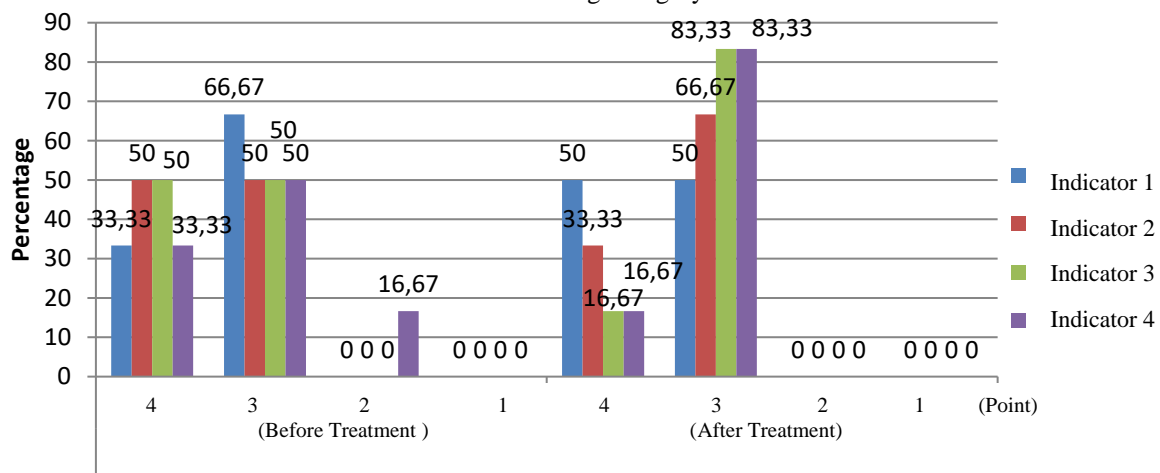


Figure 7. Comparison of Habits of Mind of Upper Group Students Before and After Treatment In Category Creative Thinking

Based on Figures 5, 6, and 7. the implementation of Formative Assessment Strategy in the upper group gives the greatest influence on the self regulation category that is on point 4 which experienced an increase of 16.66% and creative thinking category that is on point 3 which experienced an increase of 16,66%. Followed then the category of critical thinking on points 4 which increased by 5.56%. This is due to the formative assessment strategy provided to develop the self-organizing ability and group thinking processes over not only conceptual but also applicative and more rational so as to make the upper groups think out of the box. Other things that affect the formation of habits of mind students are teaching materials, learning methods, teachers, students, facilities infrastructure, media and classroom management.

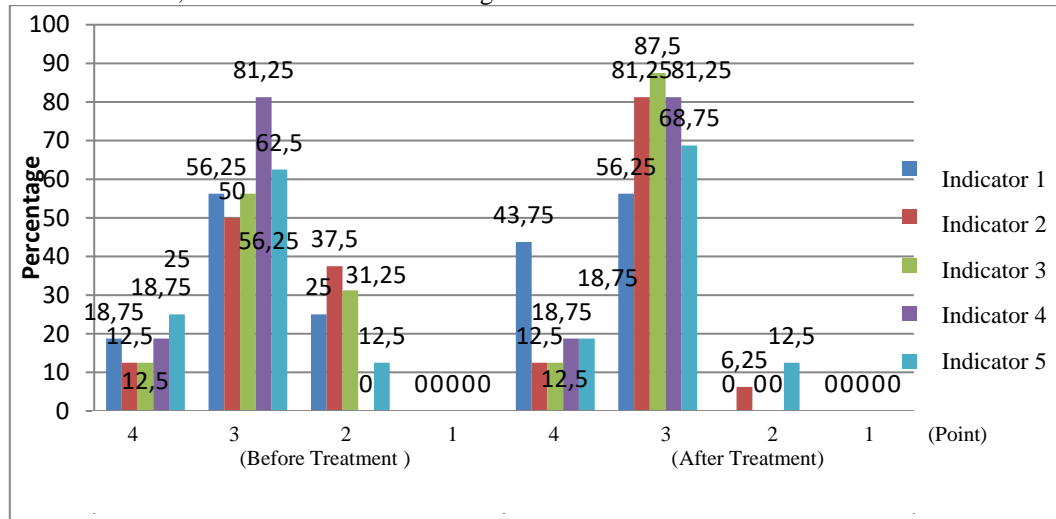


Figure 8. Comparison of Habits of Mind Moderate Group Students Before and After Treatment In Self Self-Regulation Category

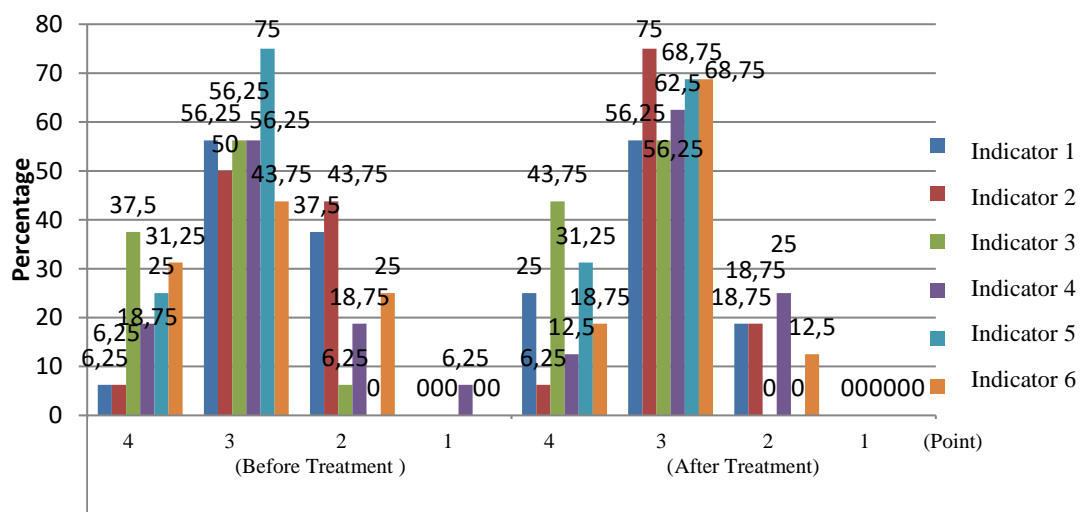


Figure 9. Comparison of Habits of Mind Moderate Group Students Before and After Treatment In Critical Thinking Category

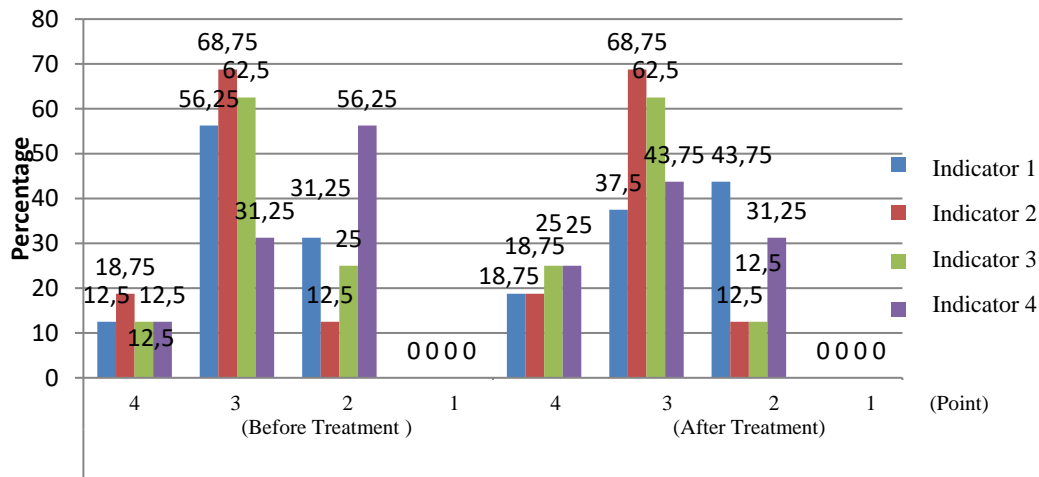


Figure 10. Comparison of Habits of Mind Moderate Group Students Before and After Treatment In Category Creative Thinking

Based on Figures 8, 9, and 10. implementation of formative assessment strategy in the group is giving the greatest influence on the self regulation category that is on point 3 which experienced an increase of 13.75%, followed by the critical thinking category that is on point 3 that has increased By 8.33% and the last category creative thinking on points 4 which increased by 7.82%. This is because the formative assessment strategy provided gives the most influence on the ability to manage themselves. Self-regulation will make students more reflective thinking then the group is able to a higher level of thinking that is critical thinking followed by creative thinking. Other things that influence the formation of habits of mind in the middle group are teaching materials, learning methods, teachers, students, infrastructure, media and classroom management.

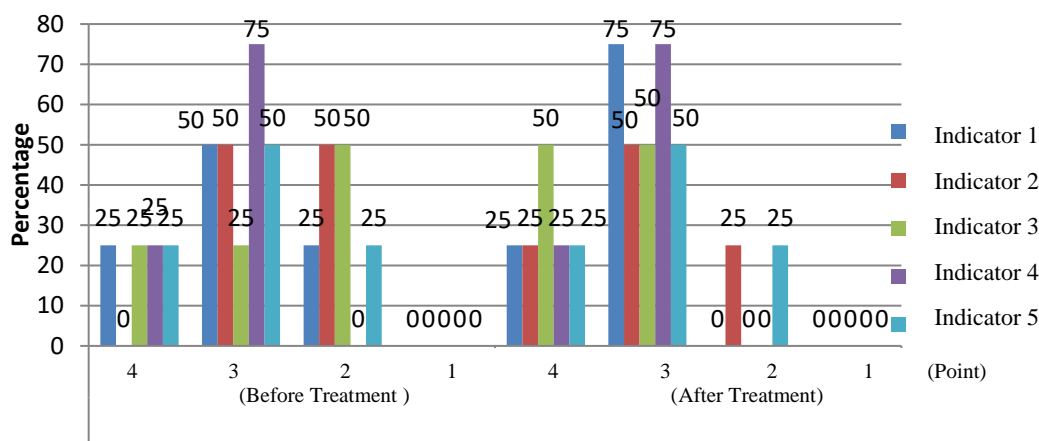


Figure 11. Comparison of Habits of Mind Students of Lower Groups Before and After Treatment in Self-Regulation Category

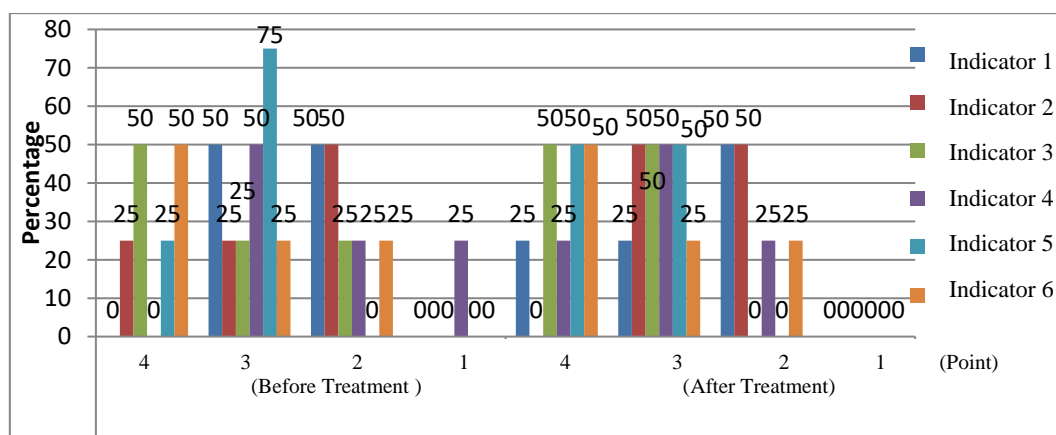


Figure 12. Comparison of Habits of Mind Students Group Down Before and After Treatment in Critical Thinking Category

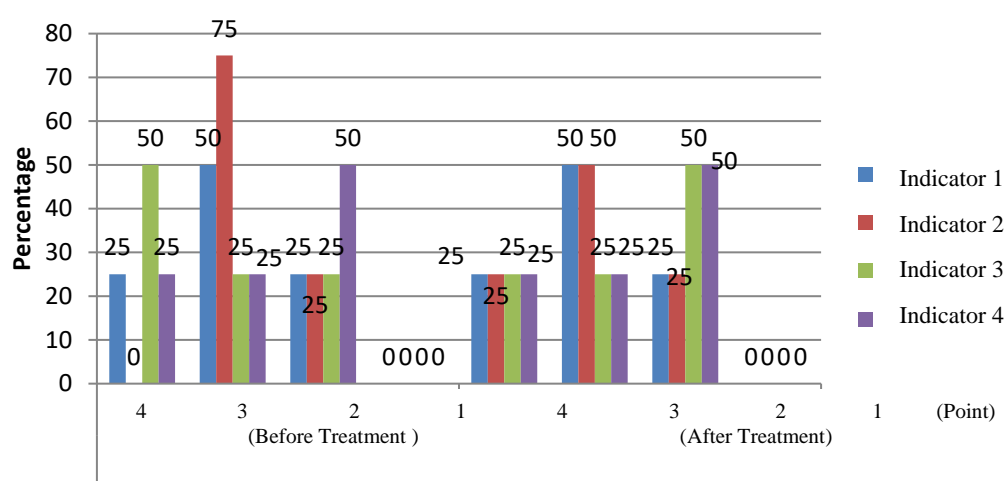


Figure 13. Comparison of Habits of Mind Students Under Class Before and After Treatment In Category Creative Thinking

Based on Figures 11, 12 and 13, the implementation of formative assessment strategy for the lower group gives the greatest influence on the self regulation category that is on point 4 which increases by 10%, followed by the critical thinking category that is on point 4 which increases by 8, 33% and the last category of creative thinking on point 2 which increased by 6.25%. This is because the formative assessment strategy provided gives the most influence on the ability to manage them. Good self-regulation will make the students self-management more consistent so that more can develop a higher level of thinking that is critical thinking followed by creative thinking. The top group that has the highest concept mastery improvement is also in line with the highest habits of mind improvement as well. Intelligent cognitive intelligence is also in behaving which means the upper group already reflects a pattern of intelligent behaviour that will enable productive action. When faced with a dilemma, should upper-class students use certain intelligent behaviour patterns to deal with such dilemmas in everyday life. This requires a certain level of skill in order to effectively use, execute and maintain such intelligent behaviour (Costa and Kallick, 2012). The results of student responses analysis on the implementation of formative assessment strategies to improve the mastery of concepts and habits of mind students through various strategies to get a good response from students and of course a positive impact to students. Students become more interested and motivated to learn more chemistry.

CONCLUSION

Based on the findings, the results of the analysis and discussion, the researchers can conclude about the implementation of formative assessment strategy to improve the mastery of concepts and habits of mind of high school students on the material of buffer solution is as follows (1) Implementation of formative assessment strategy in this research improve mastery of student concept as a whole with high category according to Hake (1998). Based on the category of student groups, improved mastery of the upper and medium group concepts is included in the high category while the lower group is included in the medium category. (2) Implementation of a formative assessment strategy also improves students' habits of mind. The highest increase overall is in the self-

regulation category. When viewed from the group category of students, the upper group experienced the highest increase in the self-regulation and creative thinking category while the middle and lower groups experienced the highest increase in the self-regulation category. (3) The results of questionnaire distribution and interviews show that most students responded positively to the implementation of formative assessment strategies on buffer material materials. Implementation of a formative assessment strategy makes the chemistry learning of buffer solution material interesting and enhances students' interest to learn more about this material.

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Investigation of Healthy Living Behaviors of University Students Participating and Non Participating Sports

Selma CİVAR YAVUZ

Faculty of Sport Sciences,

Akdeniz University

TURKEY

scivar@akdeniz.edu.tr

Nazmi BAYKÖSE

Faculty of Sport Sciences,

Akdeniz University

TURKEY

scivar@akdeniz.edu.tr

Ahmet ŞAHİN

Department of Physical Education and Sports,

Mehmet Akif Ersoy University

TURKEY

scivar@akdeniz.edu.tr

Ömer ÖZER

Faculty of Sport Sciences,

Dumlupınar University

TURKEY

scivar@akdeniz.edu.tr

Meryem ÇOBAN

Faculty of Sport Sciences,

Akdeniz University

TURKEY

scivar@akdeniz.edu.tr

ABSTRACT

The aim of this research is to examine the healthy lifestyle behaviors of university students participating and non participating sports. The university students who participated in the research consisted of 164 male and 236 female student athletes. The research was conducted with a total of 400 athletes from different universities. "Healthy Life Style Behavior Scale" and "Personal Information Form" were used to determine the healthy lifestyle behaviors of the student athletes. As a result of the normality test, it was determined that the data were not distributed normally. Mann whitney u test was used to determine differences in gender and sport situation in the data analysis of this information. The level of significance was taken as $p < 0.05$ in all analyzes. According to research findings; Gender and sporting status were found to influence the healthy lifestyle behaviors of the students athletes in sport science faculties. In line with these results; In order to protect and improve the health of non-athletic students in the sports sciences faculties compared to the athletes, Knowledge and behavior are insufficient. As a result of this research, it can be said that education programs about healthy lifestyle behaviors should be established. Based on the implementation of these programs, it can be said that the levels of having healthy lifestyle behaviors of non-athletes may increase.

Keywords: Sport, spor sciences, healthy living behaviors

INTRODUCTION

Exercise's effects on and functions in mental health have been investigated (Byrne and Byrne,1993; Gauvin and Spence, 1996; Salmon, 2000; Dishman et al., 1997; Droste et al., 2003; Thoren et al., 1990; Blumenthal et al., 1999; McAuley et al., 1997) and are still being investigated (Bayköse et al., 2015; Yavuz et al., 2015; Karakaya et al., 2005) by many researchers. Recent studies address both physiological and psychological effects of sport from different perspectives (Salmon, 2000; Droste et al., 2003; Blumenthal et al., 1999). An important element for both physical and mental health, exercise is frequently associated with health and health behaviors in the literature (Biddle, 2000; Stephens, 1988). A shared opinion in studies on effects of exercise on the individual's attitudes and behaviors is that exercise is an essential element for a healthy life. Within the framework of this opinion, this study aims to explore healthy lifestyle behaviors of faculty of sport sciences students who exercise and do not exercise.

Healthy lifestyle behavior is defined as a combination of considerations regarding nutrition, self-actualization, health responsibility, exercise habit, interpersonal support, and stress management (Fox,1996; Bidlack, 1996).

According to another definition, a healthy lifestyle is achieved when the individual controls all behaviors which may affect his health and regulates his everyday activities in accordance with his health status (Pender, 1987).

Health improvement efforts are very important for the individual to take his health to the highest level. Social health level is measured by the percent of the population that is healthy. Health is a fundamental human right and the basis for improved health is protection and maintenance of health. Individuals must take their own responsibility to develop healthy behaviors and turn healthy lifestyle behaviors into everyday life habits (Komduur et al., 2009). From this perspective, exercise is one of the fundamental elements of a healthy life for every individual. Considering that exercise is one of the healthy lifestyle behaviors which indicate overall health of the individual, it is only natural to expect that students attending faculty of sport sciences have a high level of healthy lifestyle behaviors.

This study was conducted to investigate Healthy Lifestyle Behavior Scale (HLBS) scores of faculty of sport sciences students by exercise status and gender variables

METHOD

In this section, research group, measurement tools and statistical methods utilized in this research were exhibited.

Participants

The study was conducted with 400 sport sciences students, 164 male and 236 female, from three different universities.

Measuring Instruments

In accordance with the purpose of the study, the “Healthy Lifestyle Behavior Scale” was used to determine healthy lifestyle behavior levels of students and the “Personal Information Form” was used to collect personal information.

Healthy Lifestyle Behavior Scale

The Healthy Lifestyle Behavior Scale (HLBS) was developed by Walker et al. to test the Health Promotion Model suggested by Pender in 1987 (Esin, 1999). The scale measures behaviors which promote a healthy lifestyle and thus improve the individual’s health. The scale was tested for validity and reliability in Turkey by Esin (1999) and used in a large number of studies (Esin, 1999). HLBS consists of 48 items and 6 subscales: self-actualization, health responsibility, exercise, nutrition, interpersonal support, and stress management. All 48 items in HLBS include positive statements. There is no reverse item in the scale. The suitable marks the statements given in the items in a four-point Likert scale calculated as “Never=1 point”, “Sometimes=2 points”, “Often=3 points”, and “Regularly=4 points”. The minimum score is 48 and the maximum score is 90. The application of the scale to the subject takes 8 to 10 minutes.

Data Analysis

The normality test is used to determine whether the data shows normal distribution or not. SPSS 21.0 was used for the normality test of the data. As suggested by Hair et al. (1995), the normality test was performed in three stages. The data was reviewed in terms of form in the first stage. The second stage involved checking skewness and kurtosis values. The Kolmogorov-Smirnov test was performed in the third stage. In the first stage of the normality test which included graphical examination, the data’s minimum and maximum values, mean values, frequency and standard deviation values were calculated. Values obtained as a result of the graphical examination of the data including Histogram and Q-Q Plot graphs can be seen in Table 1.

Table 1: Measures of central tendency for Total Subscale Scores

	Self-Actualization	Health Responsibility	Exercise	Nutrition	Interpersonal Support	Stress Management
N	400	400	400	400	400	400
Mean	3,5856	3,3905	3,4485	3,4088	3,5062	3,4332
Median	3,7692	3,5000	3,6000	3,5000	3,5714	3,4286
Mode	3,77	3,50	3,60	3,50	3,57	3,43
Std. Deviation	,30978	,20607	,29148	,29442	,33476	,32731
Variance	,096	,042	,085	,087	,112	,107
Skewness	-2,626	-2,089	-2,434	-2,209	-3,548	-2,505
Kurtosis	7,674	6,519	5,926	7,841	15,117	8,177
Minimum	2,15	2,50	2,20	2,00	1,71	1,86
Maximum	3,85	3,90	3,80	4,00	4,00	4,00

According to Büyüköztürk (2011), it can be said that scores show normal distribution and parametric tests can be used if scores have similar arithmetic average, median, and mod values and skewness-kurtosis values fall within the range of -1 to +1. It was observed as a result of the normality test that the data did not show normal distribution and finally the results of the Kolmogorov-Smirnov test were examined. The results of the Kolmogorov-Smirnov test were found to be significant for all subscales. After the examinations, it was decided to use non-parametric statistical methods for analysis of the data. Healthy lifestyle behavior levels of faculty of sport science students were determined using the Healthy Lifestyle Behavior Scale and the scores were compared by different variables. The Mann-Whitney U test was used to investigate differences by gender. .05 was accepted as the statistical significance level.

FINDINGS

This section includes findings obtained from the analysis performed for the purposes of the study.

Table 2: Mann-Whitney U Test Results of Self-Actualization Scores by Gender

Self-actualization	Groups	N	Mean Rank	Sum of Ranks	U	z	p
	Female	236	236,56	55829,00	10841,000	24371,000	0.000
	Male	164	148,60	24371,00			

When the difference between Healthy Lifestyle Behavior Scale's self-actualization subscale scores of faculty of sport sciences students was examined by gender, female students were found to have a significantly higher average self-actualization score compared to male students ($p < 0.05$)

Table 3: Mann-Whitney U Test Results of Health Responsibility Scores by Gender

Health Responsibility	Groups	N	Mean Rank	Sum of Ranks	U	z	p
	Female	236	218,71	51615,50	15054,500	-4,207	0.000
	Male	164	174,30	28584,50			

When the difference between Healthy Lifestyle Behavior Scale's health responsibility subscale scores of faculty of sport sciences students was examined by gender, female students were found to have a significantly higher average health responsibility score compared to male students ($p < 0.05$)

Table 4: Mann-Whitney U Test Results of Exercise Scores by Gender

Exercise	Groups	n	Mean Rank	Sum of Ranks	U	z	p
	Female	236	215,91	50954,00	15716,000	-3,530	0.000
	Male	164	178,33	29246,00			

When the difference between Healthy Lifestyle Behavior Scale's exercise subscale scores of faculty of sport sciences students was examined by gender, female students were found to have a significantly higher average exercise score compared to male students ($p < 0.05$)

Table 5: Mann-Whitney U Test Results of Nutrition Scores by Gender

Nutrition	Groups	<i>n</i>	Mean Rank	Sum of Ranks	<i>U</i>	<i>z</i>	<i>p</i>
	Female	236	197,99	46724,50	18758,500	-,564	0.573
	Male	164	204,12	33475,50			

When the difference between Healthy Lifestyle Behavior Scale's nutrition subscale scores of faculty of sport sciences students was examined by gender, female students were found to have a significantly higher average nutrition score compared to male students ($p < 0.05$)

Table 6: Mann-Whitney U Test Results of Interpersonal Support Scores by Gender

Interpersonal Support	Groups	<i>n</i>	Mean Rank	Sum of Ranks	<i>U</i>	<i>z</i>	<i>p</i>
	Female	236	209,58	49461,00	17209,000	-1,956	0.050
	Male	164	187,43	30739,00			

When the difference between Healthy Lifestyle Behavior Scale's interpersonal support subscale scores of faculty of sport sciences students was examined by gender, female students were found to have a significantly higher average interpersonal support score compared to male students ($p < 0.05$)

Table 7: Mann-Whitney U Test Results of Stress Management Scores by Gender

Stress Management	Groups	<i>n</i>	Mean Rank	Sum of Ranks	<i>U</i>	<i>z</i>	<i>p</i>
	Female	236	223,94	52850,00	13820,000	-5,298	0.000
	Male	164	166,77	27350,00			

When the difference between Healthy Lifestyle Behavior Scale's stress management subscale scores of faculty of sport sciences students was examined by gender, female students were found to have a significantly higher average stress management score compared to male students ($p < 0.05$)

Table 8: Mann-Whitney U Test Results of Self-Actualization Scores by Exercise Status

Self-Actualization	Groups	<i>n</i>	Mean Rank	Sum of Ranks	<i>U</i>	<i>z</i>	<i>p</i>
	Athlete	315	222,45	70070,50	6474,500	-7,903	0.000
	Non Athlete	85	119,17	10129,50			

When the difference between Healthy Lifestyle Behavior Scale's self-actualization subscale scores of faculty of sport sciences students was examined by exercise status, students who exercised were found to have a significantly higher average self-actualization score compared to students who did not exercise ($p < 0.05$)

Table 9: Mann-Whitney U Test Results of Health Responsibility Scores by Exercise Status

Health Responsibility	Groups	<i>n</i>	Mean Rank	Sum of Ranks	<i>U</i>	<i>z</i>	<i>p</i>
	Athlete	315	216,86	68310,00	8235,000	-6,064	0.000
	Non Athlete	85	139,88	11890,00			

When the difference between Healthy Lifestyle Behavior Scale's health responsibility subscale scores of faculty of sport sciences students was examined by exercise status, students who exercised were found to have a significantly higher average health responsibility score compared to students who did not exercise ($p < 0.05$)

Table 10: Mann-Whitney U Test Results of Exercise Scores by Exercise Status

Exercise	Groups	<i>n</i>	Mean Rank	Sum of Ranks	<i>U</i>	<i>z</i>	<i>p</i>
	Athlete	315	215,31	67821,50	8723,500	-5,444	0.000
	Non Athlete	85	145,63	12378,50			

When the difference between Healthy Lifestyle Behavior Scale's exercise subscale scores of faculty of sport sciences students was examined by exercise status, students who exercised were found to have a significantly higher average exercise score compared to students who did not exercise ($p < 0.05$)

Table 11: Mann-Whitney U Test Results of Nutrition Scores by Exercise Status

Nutrition	Groups	<i>N</i>	Mean Rank	Sum of Ranks	<i>U</i>	<i>z</i>	<i>p</i>
	Athlete	315	224,29	70651,00	5894,000	-8,564	0.000
	Non Athlete	85	112,34	9549,00			

When the difference between Healthy Lifestyle Behavior Scale's nutrition subscale scores of faculty of sport sciences students was examined by exercise status, students who exercised were found to have a significantly higher average nutrition score compared to students who did not exercise ($p < 0.05$)

Table 12: Mann-Whitney U Test Results of Interpersonal Support Scores by Exercise Status

Interpersonal Support	Groups	<i>N</i>	Mean Rank	Sum of Ranks	<i>U</i>	<i>z</i>	<i>p</i>
	Athlete	315	219,30	69078,00	7467,000	-6,497	0.000
	Non Athlete	85	130,85	11122,00			

When the difference between Healthy Lifestyle Behavior Scale's interpersonal support subscale scores of faculty of sport sciences students was examined by exercise status, students who exercised were found to have a significantly higher average interpersonal support score compared to students who did not exercise ($p < 0.05$)

Table 13: Mann-Whitney U Test Results of Stress Management Scores by Exercise Status

Stress Management	Groups	<i>N</i>	Mean Rank	Sum of Ranks	<i>U</i>	<i>z</i>	<i>p</i>
	Athlete	315	214,12	67446,50	9098,500	-4,938	0.000
	Non Athlete	85	150,04	12753,50			

When the difference between Healthy Lifestyle Behavior Scale's stress management subscale scores of faculty of sport sciences students was examined by exercise status, students who exercised were found to have a significantly higher average stress management score compared to students who did not exercise ($p < 0.05$)

CONCLUSIONS

Research findings showed a statistically significant difference between male and female participants in self-actualization, health responsibility, exercise, nutrition, interpersonal support, and stress management subscales of the Healthy Lifestyle Behavior Scale. Average values were higher in favor of female participants in all subscales except for nutrition. Findings showed a higher average score in the nutrition subscale for male participants. While there are research reports which support our findings in the relevant literature, there are also studies with opposing findings. Kaya et al. (2008) conducted a study with faculty members and did not find a significant difference between male and female participants in terms of healthy lifestyle behaviors. Therefore, findings obtained by Kaya et al. (2008) do not support our findings. Another similar study was conducted by Cihangiroğlu and Deveci (2011) with university students. The findings of Cihangiroğlu and Deveci (2011) are not consistent with our findings as well. Considering the exercise subdimension, the data from 20 years ago reports that two third of the young population in Turkey do not have sufficient physical activity and physical activity is higher among women (Ersoy, 1995). Also, findings of the studies conducted by Walker et al. (1987) and Akça (1998) suggest that women have higher physical activity compared to men as well, which are consistent with our findings. Considering the nutrition subdimension, the literature contains findings which

support those of the present study, as well as opposing findings. Pasinoğlu and Gözüml (1998) reported that women had a significantly higher average nutrition score compared to men. This finding is not consistent with our results. However, findings obtained in the study conducted by Yıldırım (2005) are consistent with our findings.

Research findings showed a statistically significant difference by exercise status variable in self-actualization, health responsibility, exercise, nutrition, interpersonal support, and stress management subscales of the Healthy Lifestyle Behavior Scale. Participants who exercised had higher average values in all subscales compared to participants who did not exercise. These findings are consistent with findings in the relevant literature. The youth period which covers 17 years of age and above coincides with university years and is of great importance. University is a period where significant changes happen in an individual's life (22). On one hand, the individual is separated from his family for the first time, joins a new educational environment, and goes through a new period of transition, which may lead to negative behavior. On the other hand, there may also be changes in health behaviors of the individual in addition to professional training and changes in personal life. These changes are important for attitudes and behaviors related to health. In this period, young individuals may adopt behavior patterns which improve their health or gain negative health behaviors which harm both themselves and others around them. Health-related attitudes and behaviors of the young individual affect himself in specific and his family and the society in general (McKay and Diem, 1995; Eguchi et al., 2012).

In line with these results, it can be said that faculty of sport sciences students who do not exercise are not at the same level with those who exercise in terms of protection and promotion of health. As a result of this study, it is believed that it is necessary to create and implement educational programs related to healthy lifestyle behaviors, which will encourage faculty of sport sciences who do not exercise to adopt healthy lifestyle behaviors.

Authors' Disclosures of Potential Conflicts of Interest

The authors indicated no potential conflicts of interest.

Footnotes

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Investigation of Preservice Elementary Teachers' Opinions on Science Fiction Films

Ümit İZGİ

*Faculty of Education, Mersin University,
Turkey.*

umitizgi@gmail.com

ABSTRACT

In this research, opinions of preservice elementary teachers on science fiction films are investigated in terms of gender, academic success and department. The survey research method was used in this study. In this descriptive study, a relational screening model was used from survey method to determine the current situation. The relational screening model is a type of research model that aims to determine whether there is a relationship between two or more variables and to determine the degree of the relationship. Likert type attitude scale developed by Çemrek et al (2005) was used for gathering data in this research. The data were gathered from 142 students at the department of elementary science teacher and classroom teacher education at Hacettepe University during the 2014-2015 academic year. The collected data has been analyzed and interpreted with the help of SPSS statistical programme and recommendations were given in the light of results gathered at the end of this analysis.

Key Words: Science fiction film, preservice teacher, elementary education.

INTRODUCTION

Individuals have been thinking about how humanity can create a future in a long period of time, as well as how their personal future will be, what kind of life will be encountered or what kind of life can be created (Ekem, 1990). As a result of rapid advances in science and technology, the thoughts of mankind about future are shaped. In the formation of these thoughts, the contribution of science-fiction cannot be ignored sometimes at the point of providing a basis for the next thought and sometimes applying it. The famous science-fiction writer Arthur C. Clarke asserts that "The spread of science-fiction is useful for the future of mankind" (cited: Ekem, 1992).

Orhan Duru, who created the science-fiction concept in Turkish Literature, emphasizes that science-fiction is "a phenomenon of our time" as well as not only the extraordinary scientific and technical developments in the emergence of science-fiction, but also the fact that people are devoted to the dream, extraordinary and extrinsic events as well (Reyhanoğulları, 2012). Zılhoğlu (1986) also describes science-fiction as the symbolic communication of what might be happened, occurred, lived in the open or implicit future.

By looking at the definitions of science-fiction, we can see that science-fiction can be in the service of mankind and potentially used for educational purpose. First of all, science-fiction starts and maintains its subjects in a scientific way. Science-fiction films also convey these scientific events in an audiovisual appeal (Ekem, 1992).

When we examine the historical development of science-fiction films, we can see that they are shaped according to the characteristics of the period. For example, until the 19th century, science-fiction films have dealt with current events in ways that might be possible in the future. In the following years, science-fiction films have shown that science can be used not only for the benefit of people, but also for warlike purposes. Several science-fiction films were made full of artificial people, pessimistic themes and monsters. After 1950s, we see more science-fiction films for military purposes. After the 1960s, as a result of the developments in scientific research and technology science-fiction films have become worthy of the name keeping pace with developments in cinematography (Ekem, 1992).

Ekem (1992) states some of the factors that make science-fiction films attractive are as follows; the existence of science, the existence of unreal science, the process of the future, the idea of technological products in the future, the process of good and bad concepts, appeal to individual's imagination, the effective power of cinema, ambient conditions. It can be said that the content of science-fiction films may be appropriate to the nature of science, especially in terms of the existence of science, the process of the future, and the idea of technological products in

the future. Especially in science and mathematics, imagination can be used effectively in problem solving and in spatial thinking. In this context, it should be considered the fact that science-fiction films can make possible to gain this mentality in science and mathematics (Balbağ, Yenilmez and Turgut, 2012). The functions of science-fiction films in science education and teaching are collected under three titles. These are; the effect on students' attitudes towards science, the effect of improving students' personalities, the ability to give concrete examples to some scientific issues (Ekem, 1991). When the literature is reviewed, Ekem (1990) found that science-fiction films have a positive effect on the attitudes of university students towards science. In the research conducted by Çemrek et al., it is seen that the reflection of science-fiction films on the success of the teacher candidates in the science courses is seen as positive (Çemrek et al. , 2005).

For this purpose, in this research, it was aimed to compare the views of science and classroom teacher candidates towards science fiction films in terms of gender, academic achievement, and department.

Research questions:

1. What are the views of science and classroom teacher candidates on science fiction films?
2. Are the views of science and classroom teacher candidates on science fiction films differentiated by department?
3. Are the views of science and classroom teacher candidates on science fiction films differentiated by gender?
4. Are the views of Science Teachers and Classroom Teachers towards science fiction films differentiated by academic success?

THE STUDY

The research was conducted as a relational screening model study, since it aims to determine the current situation. The screening model aims to describe the current situation as it is. The individual, object or event that subject to the research is tried to be defined without the aim of changing in its own conditions (Karasar, 2004).

The research was conducted with (133) science teacher candidates and (100) classroom teacher candidates who were studying at the undergraduate program of Science and Classroom Teaching at a state university in Ankara in the 2014-2015 academic year. The information for the study group is presented in Table 1.

In the research, personal information form and a questionnaire for science-fiction films were used. Information about gender and academic averages of the teacher candidates were obtained with the personal information form. The questionnaire for science-fiction films is a 5-point likert type measurement tool developed by Çemrek et al. (2005). In the research, the reliability (Cronbach Alpha) coefficient of the opinion questionnaire for science-fiction films was 0.95.

Table 1. Demographic Information of the participants

variables		n	%
department	Science teacher	133	57,1
	Classroom teacher	100	42,9
gender	Female	182	78,1
	Male	51	21,9
gpa (grade point average)	0-1,99	9	3,9
	2-2,49	30	12,9
	2,5-2,99	105	45,1
	3-3,49	77	33,0
	3,5-3,99	12	5,2
grade	1 st grade	52	22,3
	2 nd grade	91	39,1
	3 rd grade	53	22,7
	4 th grade	37	15,9

When Table 1 was examined, 57.1% of the participants in the survey were "Science Teacher Education" and

42.9% of them were "Primary Teacher Education" students. 78.1% of the participants were female and 21.9% were male. Looking at the academic average, it is seen that the majority of the teacher candidates have an academic average of 2.5-2.99% with 45.1%. In terms of their grade the distribution is as follows; first grade is 22,3%, second grade is 39,1%, third grade is 22,7% and fourth grade is 15,9%.

FINDINGS

Shaphiro Wilk test was used for the normal distribution fitness of continuous variables to determine the opinions of science teachers and classroom teacher candidates about science-fiction films. The t-test used for comparison of two groups with normal distribution and One-way ANOVA and LSD multiple comparison tests used for comparison in more than two groups. Cronbach Alpha coefficients were calculated for reliability of the scale. SPSS for Windows version 24.0 package program was used for statistical analysis and $P < 0.05$ was accepted as statistically significant. The below mentioned tables include information about findings.

Table 2. Science and Classroom Teacher candidates' opinions on Science-Fiction films score t-Test results by department

Department	N		sd	t	P
Science teaching	133	98,9474	31,01522	-1,381	0,169
Classroom teaching	100	104,1300	24,34128		
Total	233	101,1717	28,40343		

There was no significant difference in science and classroom teacher candidates' opinions on science fiction films when compared to the scale total scores in terms of department ($P = 0,169$). In this context, it can be said that science and classroom teacher candidates have similar views on science fiction films.

Table 3. Science and Classroom Teacher candidates' opinions on Science-Fiction films score t-Test results by gender

Gender	N		sd	t	P
Female	182	100,9560	28,77726	-0,218	0,827
Male	51	101,9412	27,28986		
Total	233	101,1717	28,40343		

There was no significant difference in science and classroom teacher candidates' opinions on science fiction films when compared to the scale total scores in terms of gender ($P = 0,827$). In this context, it can be said that female and male teacher candidates have similar views on science fiction films.

Table 4. One-Way analysis of variance (ANOVA) results of Science and Classroom Teacher candidates' opinions on Science-Fiction films score by grade level

Grades	N		sd	F	P
1 st grade	52	90,55	28,63	3,435	0,018
2 nd grade	91	105,81	24,11		
3 rd grade	53	101,96	33,20		
4 th grade	37	103,54	27,69		
Total	233	101,17	28,40		

According to the one-way analysis of variance (ANOVA) results of Science and Classroom Teacher candidates' opinions on Science-Fiction films score by grade level, there was a significant difference in the total scores between the grades ($P=0,018$). Subgroup differences were tested by the LSD test and are given in Table 5. The scores of the students in the first grade were statistically significantly lower than the other grades. No, significant differences were observed between the other classes.

Tablo 5. LSD test results

(I) grade	(J) grade	mean difference (I-J)	P
1	2	-15,25*	0,002
	3	-11,40*	0,038
	4	-12,98*	0,032
2	1	15,25*	0,002
	3	3,85	0,426
	4	2,27	0,677
3	1	11,40*	0,038
	2	-3,85	0,426
	4	-1,57	0,792

Table 6. One-Way analysis of variance (ANOVA) results of Science and Classroom Teacher candidates' opinions on Science-Fiction films score by grade point average

Average groups	N	sd	F	P
0-1,99	9	90,56	24,75	0,594
2-2,49	30	105,47	31,97	0,668
2,5-2,99	105	101,23	28,46	
3-3,49	77	101,51	28,42	
3,5-3,99	12	95,75	21,41	
Total	233	101,17	28,40	

With the reason of the lack of frequency in the groups, 0-1,99 and 2-2,5 groups were combined and 3,5,3,99 and 3-3,49 groups were combined and the analyzes were repeated.

Table 7. One-Way analysis of variance (ANOVA) results of Science and Classroom Teacher candidates' opinions on Science-Fiction films score by grade point average (repeated)

Average groups	N	sd	F	P
0-2,49	39	102,03	30,81	0,028
2,5-2,99	105	101,23	28,46	0,972
3-3,99	89	100,73	27,55	
Total	233	101,17	28,40	

Analysis of science and classroom teacher candidates' opinions on science-fiction films by grade point averages did not show any significant difference in mean scores between the groups in terms of scale scores (P = 0.972).

CONCLUSIONS

In this study of Science and Classroom Teacher candidates' opinions on science-fiction films, the following results were obtained: Science and Classroom Teacher candidates' opinions on science-fiction films seem to be similar and positive. Balbağ, Yenilmez and Turgut (2012) have found that the views of science and elementary mathematics teacher candidates' opinions on science-fiction films are generally positive. Science and Classroom Teacher candidates' opinions on science-fiction films differ in terms of their grade levels. The scores of the students in the first grade were statistically significantly lower than the other grades. No significant differences were observed between the other classes. Science and Classroom Teacher candidates' opinions on science-fiction films do not change in terms of grade point average. Studies can also be conducted with different teacher candidates for science fiction films.

When examined in the literature; It is noteworthy that science-fiction films can influence students' understanding of science and their ideas. Barnett, Wagner, Gatling, Anderson, Houle, and Kafka (2006) argue that science fiction films can have a major impact on student ideas and the conceptual understanding of scientific concepts, have a significant impact on students' scientific ideas and so they emphasized teachers and science educators should be aware of the ideas presented in science-fiction films may also be an important source of some misconception for the students. In the future studies, the effects of science fiction films on primary school students' learning the concept of science and the effects of overcoming the problem of misconceptions about science may be examined.

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Investigation of Relationship between Factors Hindering the Participation of University Students in Recreational Activities and their Leisure Motivations Levels

Fatih UZUN

*Yukarı Taşyalak Secondary School
Ceylanpınar/Şanlıurfa, Turkey*

Osman PEPE

*College of Physical Education and Sports
Erciyes University in Kayseri, Turkey*

Mehmet Behzat TURAN

*College of Physical Education and Sports
Erciyes University in Kayseri, Turkey*

ABSTRACT

The aim of this study is to examine the association between factors hindering the participation of university students in recreational activities and their leisure motivations. The students (800) of the Erciyes University in 2014-2015 academic year became involved voluntarily in the research. The volunteers participating in the research filled the socio-demographic information form including their personal information; then, “Leisure Barriers Scale” and “Leisure Motivation Scale” were applied to them. The package statistics program of IBM SPSS (Statistical Package for the Social Sciences) 20 was employed in analyzing the data. The arithmetic mean and standard deviation of scores the university students got from the scales of Leisure Barriers and Leisure Motivation were presented as $\bar{X} \pm SS$. In order to disclose the relationship between the data obtained from two scales, Pearson Product-Moment Correlation Analysis was applied. The significance level was accepted as $p < 0.05$. In conclusion, it was found that the leisure motivations and the participation in recreational activities of students are at middle level. It was detected that there is a positive significant correlation among the sub-dimensions of leisure motivations and barriers. University students should benefit from recreational activities during the time left from their studies and from the time spent for vital needs, in order to solve material and moral problems, socialize, enhance and share cultural and knowledge accumulation, and be healthy physically, spiritually, and mentally. Thereby, students would achieve success more easily in socio-cultural and professional life. For this reason, universities should arrange the recreational areas such as cultural, artistic, sportive ones, and multiply the recreational activities in line with students’ needs.

Keywords: University Students, Leisure Barriers, Leisure Motivation

INTRODUCTION AND PURPOSE

In the process of transition from individuality to sociality, an individual coexists with the largest communities in the studentship period. The period in which the transition occurs with more logical and conscious choices is that of university education, as it was considered to be the development period. Some habits adopted during the period in which individuals, that become distanced from their family in the course of university education, make new friend groups and acquire new tendencies would affect in a negative or positive way the whole life quality of these individuals. Students may not use effectively and efficiently their leisure time, get into bad habits, and display irresponsible behaviors by being influenced by friends, friend groups, and social environment (1). Although the attendance of university youth at recreational activities has increased in recent years by virtue of the improvement of university campuses and the endeavor of university administrations on this issue, it remains still inadequate at a lot of university. The latest rise in the number of universities has a substantial impact on this situation. On the other hand, the number of educated individuals multiplies. In this context, as the philosophy of recreation is comprehended better, it is unavoidable that individuals would demonstrate themselves in a more active manner both at their social and professional life. (2) For this reason, the required effort, planning, and programming should be made. Hence, the aim of this study is to assess the participation level of university students in recreational activities, to assist and contribute to regenerate the recreational activities in universities, to figure out how university students spend their leisure time, to make a contribution to the studies conducted in this field, and to identify the organizations students participate in or select. (3) The review of the literature reveals that there are some studies investigating the attendance of university students at recreational activities (4, 5, 6) and the leisure barriers (7, 8). However, any study examining simultaneously the attendance of university students at recreational activities and the leisure barriers does not exist. It is considered that the university period which holds a crucial part of lifespan is worthy of being dwelled on and being made research on. The purpose of

this study is to examine the relationship between the leisure motivations and the participation of university students in recreational activities.

MATERIAL AND METHOD

Establishment of Volunteer Groups

The universe of the study comprises of 3954 students studying at the department of Physical Education and Sports, and the faculties of Fine Arts, Medicine, Education, Law, and Arts and Sciences in the Erciyes University.

The sample of the study consists of 800 volunteer students, in total, studying at the department of Physical Education and Sports (201), and the faculties of Fine Arts (199), Medicine (100), Education (100), Law (100), and Arts and Sciences (100) in the Erciyes University.

Data Collection Techniques

Personal Information Form:

The volunteers participating in the research were demanded to fill the personal information form comprising of three questions about age, sex, and the department of participants.

Table1. Descriptive Statistics on Participants

Variable		n	%
Age	18-21	410	51.25
	22-25	317	39.62
	26-29	73	9.13
Total		800	100
Gender	Female	461	57.62
	Male	339	42.38
Total		800	100
Department	Physical Education and Sports College	201	25.13
	Fine Arts	199	24.87
	Faculty of Education	100	12.5
	Faculty of Medicine	100	12.5
	Faculty of Law	100	12.5
	Faculty of Arts and Sciences	100	12.5
Total		800	100

Leisure Barriers Scale

In the research, “The Leisure Barriers Scale,” which evaluates the factors hindering university students to participate in recreational activities and was developed by Gürbüz and Karaküçük, was employed. A scale with 27 items, evaluating the factors which prevent the involvement in recreational activities, takes place. The four point Likert-type rating scale was used. For each question, the options of 1: “Absolutely not”, 2: “Unimportant”, 3: “Important”, 4: “Very important” were offered, and the research group was asked to mark the option closest to their opinion. The Leisure Barriers Scale is split into 6 sub-dimensions. The first sub-dimension (individual psychology) is composed of the items 1, 2, 3, and 4; the second one (lack of knowledge) of the items 5, 6, 7, 8, and 9; the third one (facilities/services) of the items 10, 11, 12, 13, 14, 15, 16, and 17; the fourth one (lack of friends) of the items 18, 19, and 20; the fifth one (time) of the items 21, 22, 23, and 24; the sixth sub-dimension (lack of interest) of the items 25, 26, and 27 (9).

Leisure Motivation Scale

The Leisure Motivation Scale (LMS) was developed by Pelletier, Vallerand, Blais, and Briere. The scale, which involves the factors motivating individuals to participate in recreational activities, consists of 7 sub-dimensions, that are (1) to know (intrinsic motivation), (2) to accomplish things (intrinsic motivation), (3) to experience stimulation (intrinsic motivation), (4) to identify (extrinsic motivation), (5) introjection (extrinsic motivation), (6) external regulation (extrinsic motivation), (7) amotivation, and of 28 items. The seven point Likert-type scale ranges from “Strongly disagree (1)” to “Strongly agree (7)”. The reliability and validity of the scale in Turkish was established by Mutlu in 2008. The scale’s form in Turkish is composed of 22 items and of 5 sub-dimensions that are (1) amotivation, (2) to know and accomplish things, (3) to experience stimulation, (4) identification/introjection and (5) external regulation. The scale is five point Likert-type (Strongly Disagree is 1 point, Disagree 2 points, Partly Agree 3 points, Agree 4 points, Strongly Disagree 5 points). The amotivation

sub-dimension is comprised of the questions 5, 12, and 19; the sub-dimension of knowing and accomplishing things of the questions 6, 9, 13, 16 and 20; the sub-dimension of experiencing stimulation of the questions 11 and 18; the identification/introjection sub-dimension of the questions 10, 14, 17, and 21; the external regulation sub-dimension of the questions 1, 8, 15, and 22. The total internal consistency coefficient of scale is .77 (10).

Data Analysis

The package statistics program of IBM SPSS (Statistical Package for the Social Sciences) 20 was employed in analyzing the data. The arithmetic mean and standard deviation of the scores, that university students got from the scales of Leisure Barriers and Leisure Motivation, was presented as $X \pm SS$. Pearson Moment-Product Correlation Analysis was applied in order to disclose the association between the data obtained from these two scales. The significance level was accepted as $p < 0.05$

RESULTS

Table 2. Descriptive Statistics of the Participants' Scores at Surveys

		N	Min	Max	X \pm SD
Leisure Motivation	Amotivation	800	3	15	10.64 \pm 2.52
	To Know and Accomplish Things	800	5	74	17.58 \pm 4.24
	To Experience Stimulation	800	2	10	5.43 \pm 2.00
	Introjection	800	4	20	13.15 \pm 2.92
	External Regulation	800	4	20	10.86 \pm 2.58
Leisure Barriers	Individual Psychology	800	4	16	10.07 \pm 2.82
	Lack of Knowledge	800	5	20	13.71 \pm 3.51
	Facilities/Services	800	8	32	23.28 \pm 4.66
	Lack of Friends	800	3	12	7.72 \pm 2.28
	Time	800	4	16	10.97 \pm 2.45
	Lack of Interest	800	3	12	7.37 \pm 2.24

In the present study, as the Leisure Motivation inventory scores of university students was examined, it was found that the amotivation dimension is 10.64 \pm 2.52, the dimension of knowing and accomplishing things 17.58 \pm 4.24, the dimension of experiencing stimulation 5.43 \pm 2.00, the introjection dimension 13.15 \pm 2.92, and the external regulation 10.86 \pm 2.58.

The investigation of Leisure Barriers inventory scores uncovers that the Individual Psychology dimension is 10.07 \pm 2.82, the Lack of Knowledge dimension 13.71 \pm 3.51, the Facilities/ services dimension 23.28 \pm 4.66, the Lack of Friends dimension 7.72 \pm 2.28, the Time dimension 10.97 \pm 2.45, and the Lack of Interest dimension 7.37 \pm 2.24 (Table 2).

Table 3. Correlation between Leisure Motivations and Barriers of University Students

		1	2	3	4	5	6	7	8	9	10	11
1. Amotivation	r	1										
	p											
2. To Know and Accomplish Things	r	.655**	1									
	p	.000										
3. Stimulation	r	.179**	.202**	1								
	p	.000	.000									
4. Introjection	r	.502**	.574**	.390**	1							
	p	.000	.000	.000								
5. External Regulation	r	.032	.072*	.304**	.301**	1						
	p	.365	.043	.000	.000							
6. Individual Psychology	r	.128**	.079*	.099**	.083*	.135**	1					
	p	.000	.025	.005	.019	.000						
7. Lack of Information	r	.120**	.122**	.215**	.122**	.136**	.430**	1				
	p	.001	.001	.000	.001	.000	.000					
8. Facilities	r	.271**	.221**	.101**	.195**	.097**	.228**	.334**	1			
	p	.000	.000	.004	.000	.006	.000	.000				
9. Lack of Friends	r	-.007	.032	.173**	.081*	.197**	.120**	.211**	.260**	1		
	p	.840	.362	.000	.022	.000	.001	.000	.000			
10. Time	r	.156**	.113**	.108**	.112**	.135**	.340**	.336**	.348**	.296**	1	
	p	.000	.001	.002	.001	.000	.000	.000	.000	.000		
11. Lack of Interest	r	-.004	.030	.158**	.067	.252**	.300**	.319**	.205**	.248**	.372**	1
	p	.904	.392	.000	.058	.000	.000	.000	.000	.000	.000	

As Table 3 was examined, while any significant correlation was not found between the amotivation dimension of leisure motivation, and lack of friends ($r = -.007$, $p = .840$) and lack of interest ($r = -.004$, $p = .904$) within leisure barriers, the positive significant correlation of the former dimension with individual psychology ($r = .128$, $p = .000$), lack of knowledge ($r = .120$, $p = .001$), facilities ($r = .271$, $p = .000$), and time ($r = .156$, $p = .000$) was identified. As any significant association was not detected between the dimension of knowing and accomplishing things, and lack of friends ($r = .032$, $p = .362$) and lack of interest ($r = .030$, $p = .392$) within leisure barriers, the positive significant correlation of the former dimension with individual psychology ($r = .079$, $p = .025$), lack of knowledge ($r = .122$, $p = .001$), facilities ($r = .221$, $p = .000$), and time ($r = .113$, $p = .001$) was found. A positive correlation between the stimulation dimension of leisure motivation, and individual psychology ($r = .099$, $p = .005$), lack of knowledge ($r = .215$, $p = .000$), facilities ($r = .101$, $p = .004$), lack of friends ($r = .173$, $p = .000$), time ($r = .108$, $p = .002$), and lack of interest ($r = .158$, $p = .000$) was observed. While any significant correlation was not found between the introjection dimension of leisure motivation, and lack of interest ($r = .067$, $p = .058$) within leisure barriers, the positive significant correlation of the former dimension with individual psychology ($r = .083$, $p = .019$), lack of knowledge ($r = .122$, $p = .001$), facilities ($r = .195$, $p = .000$), lack of friends ($r = .081$, $p = .022$), and time ($r = .112$, $p = .001$) was observed. A positive correlation between the external regulation dimension of leisure motivation and individual psychology ($r = .135$, $p = .000$), lack of knowledge ($r = .136$, $p = .000$), facilities ($r = .097$, $p = .006$), lack of friends ($r = .197$, $p = .000$), time ($r = .135$, $p = .000$), and lack of interest ($r = .252$, $p = .000$) was identified.

CONCLUSION

Time is the thing, every instance of which today's human plans desires to live through fully, and according to which today's human adjusts himself. Time is the life itself and should be made meaningful. In 21st century, the industrial and technological improvements, the domination of machine over humankind, and the enhancement in welfare level have led to increase in people's interest in leisure (11).

Although recreational activities are important for individuals at their every age to rest and be happy, the behaviors acquired through recreational activities during university period are more important for individuals. In the present study, it is aimed to investigate the university students' participation in recreational activities and the barriers to this participation.

For the Leisure Motivation of university students, it was observed that the amotivation dimension is 10.64 ± 2.52 , the dimension of knowing and accomplishing things 17.58 ± 4.24 , the dimension of experiencing the stimulation 5.43 ± 2.00 , the introjection dimension 13.15 ± 2.92 , and the external regulation 10.86 ± 2.58 (Table 2). In Kaya's study on leisure motivations of university students, the amotivation dimension was found as 10.81 ± 2.56 , the dimension of knowing and accomplishing things as 17.10 ± 3.79 , the dimension of experiencing the stimulation as 4.77 ± 1.91 , the introjection dimension as 12.64 ± 3.37 , and the external regulation as 9.99 ± 2.52 (1). In the light of this study and the information offered by literature, it can be claimed that students' leisure motivations are at middle level.

Leisure motivation is an individual taking action voluntarily in order to achieve an aim. However, reaching a certain motivation level by means of stimulations or motives has an important role for an individual participating in recreational activities, or overcoming the barriers (12).

Yet, the fact that leisure motivations of university students are at middle level is a puzzling finding. In fact, university students that would comprise the society in future are expected to use their leisure time efficiently.

As the Leisure Barriers inventory scores were investigated, it was identified that the Individual Psychology dimension is 10.07 ± 2.82 , the Lack of Knowledge dimension 13.71 ± 3.51 , the Facilities/ services dimension 23.28 ± 4.66 , the Lack of Friends dimension 7.72 ± 2.28 , the Time dimension 10.97 ± 2.45 , and the Lack of Interest dimension 7.37 ± 2.24 (Table 2). Bulut and Koçak reported in their study that the facility factor ($X = 3.10 \pm 0.624$) is the first among the barriers to university students' participation in recreational activities and it is followed by "lack of knowledge" ($X = 3.10 \pm 0.62$), "individual psychology" ($X = 6.61 \pm 0.62$), "time" ($X = 2.58 \pm 0.64$), "lack of friends" ($X = 2.30 \pm 0.63$), and "lack of interest" ($X = 2.22 \pm 0.73$) respectively. In this study, university students' barriers to participate in recreational activities were found higher.

As any significant correlation was not found between the amotivation dimension of leisure motivation, and lack of friends ($r = -.007$, $p = .840$) and lack of interest ($r = -.004$, $p = .904$) within leisure barriers, the positive significant correlation of the former dimension with individual psychology ($r = .128$, $p = .000$), lack of knowledge ($r = .120$, $p = .001$), facilities ($r = .271$, $p = .000$), and time ($r = .156$, $p = .000$) was identified. As any significant association was not detected between the dimension of knowing and accomplishing things, and lack of friends ($r = .032$, $p = .362$) and lack of interest ($r = .030$, $p = .392$) within leisure barriers, the positive significant correlation of the former dimension with individual psychology ($r = .079$, $p = .025$), lack of knowledge ($r = .122$, $p = .001$), facilities ($r = .221$, $p = .000$), and time ($r = .113$, $p = .001$) was found. A positive correlation between the stimulation dimension of leisure motivation, and individual psychology ($r = .099$, $p = .005$), lack of knowledge ($r = .215$, $p = .000$), facilities ($r = .101$, $p = .004$), lack of friends ($r = .173$, $p = .000$), time ($r = .108$, $p = .002$), and lack of interest ($r = .158$, $p = .000$) was observed. While any significant correlation was not found between the introjection dimension of leisure motivation, and lack of interest ($r = .067$, $p = .058$) within leisure barriers, the positive significant correlation of the former dimension with individual psychology ($r = .083$, $p = .019$), lack of knowledge ($r = .122$, $p = .001$), facilities ($r = .195$, $p = .000$), lack of friends ($r = .081$, $p = .022$), and time ($r = .112$, $p = .001$) was observed. A positive correlation between the external regulation dimension of leisure motivation and individual psychology ($r = .135$, $p = .000$), lack of knowledge ($r = .136$, $p = .000$), facilities ($r = .097$, $p = .006$), lack of friends ($r = .197$, $p = .000$), time ($r = .135$, $p = .000$), and lack of interest ($r = .252$, $p = .000$) was identified (Table 3).

Gradually increasing importance of time discloses the significance of time out of work time, the leisure time, and the requirement of the latter's effective use. The fact that working and other activities involve majorly boring and repeated efforts makes recreational activities an essential part of our life and a renewal instrument (5).

In conclusion, leisure motivation of students is at middle level and their leisure barriers are high. An association was identified between leisure motivations of university students and the barriers' sub-dimensions. University students should benefit from recreational activities during the time left from their studies and from the time spent for vital needs, in order to solve material and moral problems, socialize, enhance and share cultural and knowledge accumulation, and be healthy physically, spiritually, and mentally. Thereby, students would achieve success more easily in socio-cultural and professional life. For this reason, universities should arrange the recreational areas such as cultural, artistic, sportive ones, and multiply the recreational activities in line with students' needs.

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SUGGESTIONS

- The present state of recreational areas in university campuses should be identified and their usage conditions should be improved.
- The number of recreational areas in university campuses should be multiplied.
- Studies should be carried out in order to enhance university students' knowledge and interest in recreational activities.
- Any factor impeding the usage of recreational areas in university campuses should be eliminated.
- A unit related to recreational activities should be created within Departments of Health, Culture, and Sport of universities.
- Various participant groups can be involved in researches.

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Investigation of Teacher Opinions on Measurement Tools Used to Evaluate Listening/Monitoring Skills*

Zeynel HAYRAN

Ahi Evran University, Faculty of Education

Department of Teaching Turkish, Kırşehir, Turkey

zhayran@ahievran.edu.tr

ABSTRACT

In this study, the answer is searched for whether secondary school Turkish lessons about the measurement tools used in assessing listening ability are consistent with the objectives and achievements of Primary School Turkish Teaching Program with the opinions of teachers. Assessment is one of the dimensions of Turkish teaching program. Measuring is the process of determining the degree of having a certain feature. Assessment is the process of reaching a value judgment by comparing the measurement results to a criterion or criterions. The assessment can be categorized according to the time, the goal and the measure used. The purpose of evaluating the teaching process is the evaluation of teaching and the determination of learning deficiencies. In order to evaluate teaching, tests for monitoring, student product files, performance assignments, etc. are used. Check lists, peer assessment form, self-assessment form, observation forms, etc. are used to determine the extent and manner of learning in the process. The method of work is qualitative research; In the scope of the study, eight secondary school teachers were interviewed and their experiences, attitudes, thoughts, intentions, interpretations, mental perceptions and reactions about the measurement instruments they used were revealed. Findings are digitized as much as possible and also supported by a chart. The results obtained with findings were discussed in the context of the literature and suggestions were presented.

Keywords: *Listening, Measurement, Evaluation, Measurement Tools*

INTRODUCTION

Language is a natural means of communicating among people and taking part in all learning activities. Language is a multi-faceted entity related to all fields such as science, art, and technology that can't be considered separately from people and society, and constitutes them at the same time (Aksan, 1979: 11; Aksan, 2003: 28). Language consists of skills of reading, listening based on understanding, speaking, writing and understanding. (Kavcar, Oğuzkan, Sever, 1995: 56). Language acquisition and education develop in a certain period. The aim of Turkish teaching is to develop the understanding and speaking power of the people by using appropriate methods and techniques of language rules. Listening / monitoring is one of the basic ways of communicating and learning (Aktaş & Gündüz, 2010: 87), and is the ability to understand, interpret and evaluate the given message correctly. According to the research, people listen to the sum of the time they spend talking, reading and writing (Akyol, 2006: 2006). The widespread use of audiovisual instruments and their use in education require effective listening / monitoring training. Listening is mentioned in the West as listening the neglected skill, listening: the forgotten skill. The situation in our country is no better than this (Çifçi, 2001: 165-177). Various factors (Dogan, 2011: 16-17) play a role in neglect and insensitivity of listening. First, listening is naturally developing; so it is not necessary to focus on the subject in order to teach to listen. Second, the curriculum is very intensive; there is no time to listen/ monitor. Third, listening can not be taught, even if taught it can not be evaluated. Assessing and evaluating listening is nearly impossible because it is invisible (Kingen, 2010:276). However, researches have not confirmed the view that language develops itself spontaneously, can not be taught, and can not be evaluated even if it is taught.

One of the most important items of education and training activities is evaluation. According to Özçelik (1998: 6), the reasons for measuring school learning vary. These causes can be grouped into four groups: 1. Determining the readiness of the students, 2. Selecting the real targets, 3. Monitoring the learning activities in the unit, 4. Determining accessibility. Evaluation is aimed to demonstrate whether the system is functioning correctly or not, and to ensure that the deficiencies in the system are completed and the mistakes are corrected (MEB, 2006: 214). The assessment can be categorized according to the time, the goal and the measure used. Evaluation in the teaching process is done for two purposes. These are evaluation of teaching and determination of learning deficiencies. In order to evaluate teaching, tests for monitoring, student product files, performance assignments, etc. are used. In addition, check lists, peer assessment form, self-assessment form, observation forms, etc. are used to determine the extent and manner of the learning in the process. available. Within the learning process, the evaluation made to better observe and evaluate the students is called "process evaluation". There are four reason for the remarkable alternative assessment: (1) concern about the negative impact of the use

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of standardized tests in minimum competency testing, (2) dissatisfaction with existing psychometric models, (3) the belief in a constructivist learning, and (4) the belief that the primary purpose of public schools is the promotion of social justice (Cunningham, 2005:123).

Traditional measuring instruments which are used by most of the teachers in the education process, which is a single correct answer such as multiple choice, short answer, fill in the blanks, true false questions (Bahar, Nartgün, Durmuş & Bıçak, 2015:25, 48) are inadequate in identifying high-level mental processes such as problem solving, reading comprehension, critical thinking, analytical thinking, creativity (Başol, 2016: 67, Brookhart, 2010: 3). The inadequacy of the traditional assessment system and its failure to assess has caused various problems in the education system. New evaluation approaches have come to the fore in order to solve these problems and create a better evaluation system. This understanding focuses more on the learning process and evaluation of the various skills of the students and also takes into consideration the process of the product as well (Güneş, 2013: 307), thus determining the extent to which the students achieve the predicted gains in the school programs. New evaluation methods are used. At the same time, this evaluation methods requires more real-life and student-centered complementary measurement tools such as scoring rubric and self assessment, peer assessment, group assessment etc. In according Russell & Airassian (2008:206), many factors account for the growing popularity of performance assessment. First, performance assessment is being proposed or mandated as part of formal statewide assessment programs. Second, increased classroom emphasis on problem solving, higher level thinking, and real-world reasoning skills has increased the value of performance and product assessment to demonstrate student learning. Third, performance assessments can provide some students who do poorly on selection-type tests an opportunity to Show their achievement in alternative ways.

Related studies:

The study of Yiğit & Kırımlı (2014) named "Turkish teachers' methods of application of complementary assessment and assessment methods and problems in practice" examines the applications of 5th-8th class Turkish teachers to complementary assessment and evaluation methods in primary school Turkish lesson curriculum and the problems they encountered during the course. In this descriptive study, interviews were used from quantitative data collection tools and interviews from qualitative data collection tools. Frequency (f) and percent (%) distribution calculations were made on the data. Content analysis method was used in the analysis of the qualitative data obtained at the end of the interviews. As a result of the research, it was determined that the teachers used graded scoring key when evaluating performance task, project and student product files. In group studies, it was seen that Turkish teachers gave the same grade to all members of the group. When applying complementary assessment methods, it was determined that the most common problems were the inadequacy of weekly class hours and the excess of class size.

Benzer & Eldem (2013), the research titles "Levels of Knowledge about Turkish Language and Literature Teachers' Measurement and Assessment Tools" examines whether Turkish teachers and Turkish language and literature teachers had information about the measurement and evaluation tools and methods they needed to use during the teaching process or not. A 10-question open-ended questionnaire was administered to 53 people, consisting of Turkish and literary teachers. As a result, it was determined that teachers of both branches had low knowledge and usage levels about measurement and evaluation methods. The preparation of area specific assessment guidance manuals has been proposed to raise the findings to a low level.

Duran, Mıhladı & Ballıeli (2013) stated that primary school teachers' attitudes towards complementary evaluation methods, their qualification perceptions for using these methods and frequency of use in their work where they determined the level of proficiency of teachers in their study titled "Proficiency Levels of Elementary School Teachers' Compensation Methods for Complementary Assessment Methods" The study is a research in the screening model. In the research, "teacher competencies" questionnaire was used as data collection tool. As a result of the research, it has been found that teachers have "moderate" competence in complementary assessment methods.

Melanlioğlu & Tayşi (2013) classified the achievements expressed in the field of listening / monitoring learning in primary education Turkish lesson curriculum and guide in the study titled "Classification of Listening Achievements of Turkish Teaching Program in Terms of Measuring and Evaluation Methods" according to measurement methods and techniques and examines whether the period or result or both were evaluated at the same time. It has been concluded that the increasing usage frequency and priority of measurement and evaluation methods which can be evaluated continuously by arranging the listening / monitoring gains included in the Turkish lesson curriculum is necessary

In this study, the consistency between the aims and achievements of the Turkish Language Teaching Program in Primary School was examined with the opinions of the teachers of secondary school Turkish lessons about the measurement instruments used in evaluating the listening ability.

METHODS:

The method of work is qualitative research; the data was collected by interview (Sönmez & Alacapınar, 2014: 152). Interviewing is a process of communication that is based on a pre-determined and serious purpose, based on a questioning and answering style. Through interviews, individual experiences, attitudes, thoughts, intentions, interpretations, mental perceptions and reactions are revealed. There are usually two types of interviews in the literature: "Structured" and "unstructured" interview. The purpose of a structured interview is to identify and compare the similarity and differences between the information given by the interviewed individuals. In the unstructured interview, there is no expectation of a specific answer since there is no pre-set questions. In the unstructured interview, the researcher tries to discover certain topics by interviewing; explores specific areas specific to the problem that is being worked on, explores in depth with more detailed questions (Yıldırım & Şimşek, 2011:119-120). Within the scope of the study, interviews were made with the teachers of eight secondary school Turkish lessons who were selected randomly in 2016-2017 academic year. Interview voice recordings were converted into written text, two content analysis techniques, frequency and categorical analysis, were used for interpretation, (Bilgin, 2006). The collected data/findings were discussed in the context of Primary School Turkish Teaching Curriculum and literature.

FINDINGS:

Table 1: Purposes of using Turkish teachers' measurement tools

Themes:	Traditional Measuring Instruments		Themes:	Complementary Measuring Instruments	
	f	%		f	%
Recognition	7	35	Ability	1	5
Monitoring	7	35	Skill	1	5
Determining	3	15	-	-	-
Teaching	1	5	-	-	-
Sum	18	90	Sum	2	10

As it is understood from Table 1. and the teachers' opinions, it could be concluded that recognizing (35 %), monitoring (35 %) and determining (15 %) are the purposes of using Turkish traditional instruments for evaluating listening skills while complementary measurement tools are the ability (5 %) and the skill (5 %). The purpose of teachers' use of measurement tools also defines their measurement technique. "Turkish teachers use measurement tools with many different purposes. Each teacher's purpose may be different. What are your goals in measuring your listening / monitoring ability?" Examination of the answers, given to the questions above by the secondary school Turkish teachers, achievement of the determined goals and behaviors in line with the general aims of Turkish National Education, determination of the level of readiness of the students; identification of learning deficiencies; determination of the level of achievement reached in class are the purposes of teachers.

The following are the opinions of Turkish teachers regarding the use of traditional and complementary measurement tools to assess listening performance:

My aim is primarily to achieve the goals and behaviors determined in line with the general aims of Turkish National Education. We are guiding our work according to the level of readiness, according to the class situation. Naturally, the level of success of each class is not similar, it can be different. For this reason, we measure readiness levels (T-2)

What could be my purpose in listening? Does the student understand what he/she is reading or listening? Sometimes, what are we doing while trying to figure out what the student is listening to? When tell "let me summarize and explain this text that you have listened to", very different results come out (T-3).

Almost every year I do preliminary exams regularly. But I do not know how professional and how accurate the measuring is. What we do is the most widely used measurement tools, multiple-choice tests. I prepare exam questions based on more understanding, meaning of sentences, meaning of words, paragraph questions by asking twenty or twenty-five questions in the test. (T-4).

At what level did the student come, what level of perception the student has, or how much is the vocabulary? Every year I do a evaluation test. Although we seem to be working on the grounds of National Education, we are aiming to prepare students for successful high schools such as the Anatolian and Science high schools The

information we expect from children; Whether they have learned something or not, we are trying to measure this. (T-4).

Firstly, knowing the students, ensuring that the information about the topic taught after the students are learned is persistent; ensuring that children are able to connect with previous information and subsequent information. Did he or she learn or not? I would like to make an assessment of this (T-5).

First, our goal is to understand how much the student has learned, Of course, it is our goal to try to teach students where he or she has trouble. To question whether the student we are working with has taken the subject (T-6).

The goal is to understand that whether each student understand what he/she listens and measure it. Can they express themselves in the way they listen? First of all the most important thing is are the students are ready and then we move on to the measurement process. Where is the problem? Which student or students know what (T-7)?

First, I look at the access of students when using measurement tools in Turkish education. Where did student come from, how much he/she could contribute? How much we can improve them, what the missing ones are, and measurement tools must be used to identify these. However, this is ideal, but in most cases, the system requires, for the purpose of grading, I have had to use measurement tools to grade, and there have been, and still are, many. But, firstly, as I said, I intend to be able to understand what the student has missed (T-8).

Table 2. Measurement tools used by Turkish teachers

Traditional Measuring Instruments							Complementary Measuring Instruments													
Question-Answer	Fill in Blanks Questions	True False Tests	Matching Questions	Writteng exams	Multiple Choice Tests	Attitude Scale	Working Papers	Open Ended Questions	Project Evaluation Forms	Performance	Graded Marking Key	Student Observation Form	Control List	Listening Scale	Listening Rubric	Drama	Self Evaluation Form	Peer Evaluation Form	Group Evaluation Form	Process Development File
%							%													
11	11	8	9	11	12	4	6	5	-	2	-	5	-	-	-	5	4	5	2	-
66							34													

As it is understood from Table 2. and teachers' opinions, the percentage of Turkish teachers using traditional measurement instruments to determine listening ability (66 %), while percentage of using complementary measurement tools (34 %). "What are the measurement tools that you can use when determining the listening skills of students in Turkish language classes?" The answers for the question above were multiple choice (14 %), space completion (11 %), question-answer (11 %), written examination (11 %), matching (9 %), true-false (8 %), attitude scale (4 %), working papers (6 %), open ended questions (5 %), student observation form (5 %), drama (5 %), peer evaluation form (5 %), self evaluation form (4 %), performance (2 %), group evaluation (2 %) while project evaluation forms, graded scoring keys, checklist, listening scale, listening rubrics and process development files were never used. The opinions of Turkish teachers regarding the use of traditional and complementary measurement tools in assessing listening skills are presented below:

Views on traditional measurement tools:

We resort to traditional methods mostly. When evaluating students, we focus on multiple-choice questions. Conditions forces us to do this. Here, if we have multiple-choice questions, if we ask twenty questions, here are five of them are multiple choice, we use the classic method of expressing two self-expressions, three of them filling the gap, we use the matching method. I use all of them in a mixed way. However, we use multiple-choice questions in our exam-based studies, especially in our practicing classes (T-1).

We use fill-in-the-blank, and in particular, fill in the spaces as predictive work of the text, make short inquiries, and conduct observation studies (T-2).

In this sense, peer evaluation seems like an objective assessment, at least among students. Students observe their friends. Here, according to self-evaluations, it seems to me to be a little more objective work (T-3).

Is it possible to use multiple-choice questions when evaluating listening ability? It is not possible to measure the listening ability with the multiple choice question type. It is necessary to prepare a lot in the classroom, before the lesson: Here, preparing the text, asking about the text ... That could be, just the question-answer we use most. I mean, to make students evaluate students in terms of listening skill. No! Measuring instruments we use more of attitude scales. As an observation table we already have these in our workbooks; I try to apply the observation tables to the class, yes (T-3).

To be honest, I think that the biggest problem of students, teachers and schools is these examinations ... Due to these exams, the student, sincerely, we do not teach Turkish. We leave each of the learning areas you mentioned in Turkish lesson to one side. Our work, you know the previous practices, there were courses; Anyway, we do same at school. That's the truth. The school is a course that prepares us to find the right option among the four options. This is our goal. Another measuring tool that we apply filling gaps. Or a true / false type measuring tool. Matching is also in the context of word-matching, word-meaning, and comprehension of word meaning. Multiple-choice measurement tools are inevitable, are must (T-4)

Having a test to determine whether they learn the lesson, to find out if they understand what they do not understand. And every student can not be prone to everything. I see that if a student succeeds in the multiple-choice exam, another student can succeed in interpretation. I use these (T-5).

Of course, first of all, here we are doing multiple-choice tests, we have evaluation questions at the end of the theme. Of course, there are observation reports; We fill out observation reports (T-6).

It must be clear, in fact, that there are all of the concept maps you have said, Or at the end of the events after the texts after each text. It can not be said that we use them a lot. We are trying to do drama work and this makes the students very happy; We try to use it when it is right time. The most effective is learning to be drama anyway (T-7).

Comments on complementary measuring instruments:

In particular, we work on peer-review studies and self-evaluation studies to measure listening performance. This is not often. In particular, in the self-evaluation study, the student may mark a behavior that he / she did not do, in the form of a yes or no (T-2).

Naturally, there are observation reports; We are filling in the observation reports ... Peer evaluation, yes, for example listening to his or her friend, giving him or her a grade, evaluating him, evaluating his or her friend ... At the end of the books, we gave self-evaluation forms. To put it plainly, children do not objectively evaluate themselves like this (T-6).

Use complementary measurement tools to assess listening / monitoring skills It is useful for students to assess each other and contribute to each other. I often use peer evaluation (T-7).

All of the options could be as okay, I am okay, among friends, there are such evaluations as I am very good. They are not very objective, yes, they do not have reliable data. On the self-assessment forms, student can mark as he or she knows the subject that actually he or she does not know He or she claims that can do the test that actually he or she can not. Different things ... (T-8).

CONCLUSION:

In Turkish class, both process evaluation and product evaluation should be done together (MEB, 2006). In process evaluation; The performance of the students in the process is monitored. In the product evaluation, the extent to which the students achieve the gains determined in the program and what they learn is measured.

As Table 1. shows, it is seen that secondary school Turkish teachers determine students' achievement level, level of readiness, actual goals in teaching, lack of learning and student access (success) at the end of the teaching process. However, an effective evaluation (Berberoğlu, 2006:18) could be done by examining student development, determining learning difficulties, evaluating the effectiveness of teaching materials, giving feedback to student developments, monitor ingstudent development, choosing students for advanced or compulsory programs, and conducting research on the level of learning of students.

Table 2. shows that secondary school Turkish teachers use traditional measurement tools such as multiple choice, space completion, question-answer, true false and attitude scale, etc. because of parental expectation, test success, enforcement of circumstances, lack of learning detection, preparation, easy to mark and apply (Türkyılmaz, 2008:12-13) and also because of data obtained with complementary measurement tools is not objective. Teachers who indicate that they use complementary measuring instruments usually do not follow the evaluation process but pass on the processing of the related forms.

Multiple choice tests from traditional measurement tools allow students to determine what deficiencies and inadequacies are in which subjects, depending on the responses they have given. True-false tests provide useful evaluation in terms of generalization of a subject, causal relationships of events, the relationship between events and matching test are useful to determine different levels of mental ability. According to Berberoğlu (2006: 115), if a teacher wants to know to what extent his students are familiar with basic concepts, he or she should make an assessment using the most appropriate form of traditional methods; However, in the long run, if the aim is improving students' learning processes, they need to turn to complementary assessment instruments. The lack of widespread use of these methods in the education system and the lack of examples of how these tools are used and how their outcomes are to be assessed lead teachers to have problems in this regard (Gelbal & Kelecioğlu, 2007: 135 -145). Students of Teachers, who use an appropriate assessment approach to the appropriate learning process, will always be more successful.

According to Biemer (1993), nowadays, it is important for educational institutions that individuals acquire rapidly changing information and use this information in real life situations. In this context, schools have to educate individuals who can solve problems, look at events with critical eyes, know themselves, reveal original information, etc. This situation causes changes in the measurement and evaluation approaches in the curriculum, methods and techniques used in the teaching process (Akt.:Kutlu, Doğan & Karakaya, 2010: 3). It is getting more and more important to take into consideration the assessment processes of not only the knowledge development but also social skills, communication skills, friendship relations and reveal the result of what students' know rather than what they do not know (Berberoğlu, 2006: 115-116).

Since listening skills are included in the cognitive, emotional and dynamic areas in scope, it is also necessary to use multiple evaluation tools that are complementary in measuring and evaluating this skill (Göçer, 2014: 215). The main objective of the complementary evaluation is to evaluate the learning process and result of the student together and determine how the student develops (Atılğan, Doğan & Kan, 2009: 366)

Suggestions:

1. Turkish teachers can be taken to in-service courses on the use of complementary traditional measurement instruments used to assess the listening / monitoring skills of teachers.
2. A similar research can be done using quantitative / qualitative patterns on the views of traditional elementary school teachers on traditional and complementary assessment instruments used to evaluate listening / monitoring skills.

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Investigation of The Factors Influencing Teaching Profession Choices of Pedagogical Formation Trainees

Volkan PAN

*Faculty of Education, Mersin University,
Turkey.
volkanpan@gmail.com*

Serkan SAY

*Faculty of Education, Mersin University,
Turkey.
Serkansay13@hotmail.com*

ABSTRACT

This study aims to investigate the factors influencing teaching profession choices of pedagogical formation trainees. Survey model was used in the study in which quantitative and qualitative data were collected, aiming to describe any situation as either are in the past or present. The study group of the research consists of 420 teacher candidates trained in Pedagogical Formation at Mersin University Faculty of Education in 2016-2017 academic year. In the research “Personal Information Form” which aims to reveal the personal characteristics of the teacher candidates developed by the researchers and “Motivations For Teaching Scale” developed by Watt & Richardson (2007) and adapted to Turkish by Eren & Tezel (2010) has been used as a quantitative data collection tool. The open-ended questionnaire developed by the researchers was used as a qualitative data collection tool. The general results of the study show that the teaching profession is preferred because of intrinsic, extrinsic and altruistic motivational reasons. Some situations in which internal causes are more effective, such as the reasonable workload, the duration of a vacation, satisfactory fees; gender is not a significant variable; the variation of age group and department make a difference in the individuals’ motivation to teach are the main findings of the research. From this point forth, it can be referred that the reason for choosing the teaching profession is multidimensional. The results of the study reveal that pedagogical formation trainees have similar reasons for career choice as teacher candidates in teacher training institutions. In this sense, it is considered that there is a need to determine the implementations that can be made for the teaching profession choices of pedagogical formation trainees and to examine the effectiveness of these implementations.

Key words: teaching profession, pedagogical formation, teacher candidates

INTRODUCTION

It is important to make it clear that teachers often make positive changes by influencing individuals’ lives and their learning tendencies. Likewise, it has been recognized that effective teaching with qualified teachers assigned by governments around the world is important for training intelligent, wise and worthwhile citizens. In this sense, it can be said that teacher training is a great influence on shaping the future of countries. Teaching profession is accepted as a field of specialization that requires certain qualifications. The teaching certificate obtained at the end of undergraduate education and pedagogical formation training completed in the institutions that train teachers in Turkey shows that the individuals have the competences related to teaching profession. Teacher is defined as persons assigned with the aim of guiding and directing students’ learning experiences in an official or private educational institution (Öncül, 2000). In Article 43 of the basic law of national education No 1739; “The teaching profession is defined as a specialization profession that undertakes the government’s education, teaching and related administrative duties”. Based upon these definitions, it can be argued that the teacher is the authorized person who has the duty of helping the individuals in the direction of certain programs and laws.

Individuals are thought to have some reasons for choosing teaching. These reasons can be explained by the individual’s motivations about teaching. This is because motivation for teaching is directly related to teaching as a career choice (Richardson & Watt, 2006). It is one of the important research subjects how people make professional choices and which causes are controlled by occupations. Examining the literature on teaching as a career choice; intrinsic, extrinsic, and altruistic motives are emphasized as the most important factors influencing the choice of teaching profession (Balyer & Özcan, 2014; Brown, 1992; Chuene *et al.*, 1999; Çermik, Doğan & Şahin, 2010; Eren & Tezel, 2010; Kyriacou & Coulthard, 2000; Kyriacou & Kobori, 1998). More explicitly, these motivations include monthly income, vacation time, desire for teaching, experiences, intellectual satisfaction, and the desire to raise other individuals (Bastick, 2000). The image of teaching profession in the society and reasons for choosing that profession are influenced by the same sociological, economical and psychological factors, while varying from country to country in terms of rank and importance (Atav & Altunoğlu, 2013).

Although there are many studies on the factors that influence teaching choice as a career, they lack a theoretical framework to show which factors influence selection and shape the process (Eren & Tezel, 2010). But the FIT-Choice (Factors Influencing Teaching Choice) framework, which founded on expectancy-value theory (Eccles, 2005) and developed by Watt and Richardson, was highly useful to provide a comprehensive and coherent model to guide systematic investigation into the question of “why people choose a teaching career” (Watt & Richardson, 2006). When literature is examined, it is seen that there are many studies about teaching as a career choice but fewer studies about the teaching as a career choice of pedagogical formation trainees. Considering the researches, it is possible to say that there are various reasons for choosing teaching as a career. It is believed that it is important to understand the situations about people who do not complete undergraduate education in a teacher training institution but decide to become a teacher. From this point of view, this study aims to investigate the factors influencing teaching profession choices of pedagogical formation trainees. Based on this aim, the following questions were searched in the study:

- 1- How are the motivations of the pedagogical formation trainees to choose the teaching profession?
- 2- Do the reasons for the pedagogical formation trainees preference for the teaching profession differ significantly in terms of various variables (gender, age, department)?
- 3- How do the pedagogical formation trainees describe the teaching profession?
- 4- What are the factors influencing teaching profession choices of pedagogical formation trainees?

METHOD

Research Model

Survey model was used in the study in which quantitative and qualitative data were collected, aiming to describe any situation as either are in the past or present.

Study Group

The study group of the research consists of 420 teacher candidates trained in Pedagogical Formation at Mersin University Faculty of Education in 2016-2017 academic year. There are 162 male and 258 female teacher candidates among the participants. This group was selected because the individuals who have different undergraduate degrees apart from the field of teacher training completed the courses of teaching profession and teaching practice. Teacher candidates participating in the research were chosen with convenience sampling from purposive sampling methods. In the purposeful sampling method, the qualities of the persons are taken as a criterion; a choice is made to reflect differences within the group and to ensure inclusion of certain qualities (Berg, 1998). The "maximum diversity" sampling method (Patton, 1990), which aims to raise the likelihood of reflecting all relevant qualities of the study group, has been used to better understand the tendency of the selected group. For this purpose, the participants were selected, the characteristics such as department and gender, and female and male teachers' candidates were selected considering the voluntary basis in each department. Table 1 presents the gender distributions of the study group.

Table 1. distribution of pedagogical formation trainees by gender

Gender	f	%
female	240	57.1
male	180	42.9
total	420	100

Data Collection

In the research “Personal Information Form” which aims to reveal the personal characteristics of the teacher candidates developed by the researchers and “Motivations For Teaching Scale” developed by Watt & Richardson (2007) and adapted to Turkish by Eren & Tezel (2010) has been used as a quantitative data collection tool. The open-ended questionnaire developed by the researchers was used as a qualitative data collection tool.

Personal Information Form

In the formation of personal information and closed-ended questionnaire form including the questions which aims to reveal the characteristics of the individuals in the most obvious way experts were offered for consideration in order to take into account the academic and social characteristics of the teacher candidates.

Open-ended Questions Form

The FIT-Choice Scale was developed by Watt & Richardson (2007) and used to assess factors influencing the choice to teach for prospective teachers. The scale contains 12 motivation factors, 5 factors for beliefs about the profession, and 1 factor for career choice satisfaction (Watt & Richardson, 2007). As emphasized earlier, the motivation factors are ability, intrinsic career value, fallback career, job security, time for family, job

transferability, shape future of children/adolescents, enhance social equity, make social contribution, work with children/adolescents, prior teaching and learning experiences, and social influences each of which contains 3 items, except the time for family factor which contains 5 items. Following the original format of the scale, all motivation items were prefaced by “I chose to become a teacher because.” As was the case in the original scale, a seven-point Likert type response format was used. Thus, possible responses ranged from 7 (extremely important) to 1 (not at all important).

Data Analysis

Quantitative Data

As a result of the collected data with the personal information form, frequency and percentage were calculated. As a result of the collected data through the scale, parametric tests (after examining normality values and other assumptions) were used.

Qualitative Data

The responses of participants to open-ended questions were analyzed through content analysis. The main purpose of content analysis is to reach the concepts and relations that can explain the collected data (Yıldırım and Şimşek, 2003). Frequency tables were created by coding in the direction of the participants' expressions and determining the frequency of the encoded units. Coding was carried out by two different researchers and codes were agreed upon.

In order to calculate the reliability of the content analysis of qualitative data, after the implementation, the interview coding keys and the interview dossiers were read separately by the researcher and an expert and the necessary arrangements were made by discussing the issues of "agreement" and "disagreement". In order to calculate inter-rater reliability, the total number of agreements was divided by the sum of total number of agreements + disagreements (Miles & Huberman, 1994). The analysis resulted in a high level of inter-rater reliability (87%).

FINDINGS

In this section, the research findings and interpretations obtained from the analysis of the data are respectively given in tabular form.

1. How are the motivations of the pedagogical formation trainees' preference for the teaching profession?

The results of pedagogical formation trainees' motivations for teaching score results by gender are presented in Table 2.

Table 2. Motivations for teaching scores of pedagogical formation trainees

	N	Minimum	Maximum	Mean	Std. Deviation
Total	419	148,00	257,00	211,2482	23,23842
Valid N (listwise)	419				

The analysis results of the pedagogical formation trainees according to the motivation for teaching scores ($\bar{X} = 211.24$, $S = 23.23$) show that individuals have a high level of motivation for teaching.

2. Do the reasons of the pedagogical formation trainees preference for the teaching profession differ significantly in terms of various variables (gender, age, department)?

The results of pedagogical formation trainees' motivations for teaching score t-test results by gender are presented in Table 3.

Table 3. Pedagogical Formation Trainees' Motivations for teaching score t-Test results by gender

gender	n	\bar{X}	S	sd	t	p
female	239	209.41	7777.00	26.26	-1.867	.604
male	180	213.68	2954.00			
total	419					

When Table 3 is examined, it was found that the motivations for teaching scores of the pedagogical formation trainees did not differ significantly by gender ($t = -1.867$, $p > .05$).

The results of pedagogical formation trainees' motivations for teaching score results by age are presented in Table 4.

Table 4. Pedagogical Formation Trainees' Motivations for teaching scores by age

age	N	\bar{X}	Std. Deviation	Std. Error
21-25	119	203,41	21,16	1,93
26-30	124	218,75	20,43	1,83
31-35	113	213,60	25,59	2,40
36 and over	63	207,06	22,76	2,86
Total	419	211,24	23,23	1,13

When Table 4 is examined, it is seen that the highest mean of motivations for teaching scores are individuals in the 26-30 age group ($\bar{X} = 218.75$) and the lowest mean of motivations for teaching score in the 21-25 age group ($\bar{X} = 203.41$).

Table 5 presents the results of the one-way analysis of variance to determine the differentiation of pedagogical formation trainees' motivations for teaching scores by the age group.

Table 5. One-Way analysis of variance (ANOVA) results of Pedagogical Formation Trainees' Motivations for teaching scores by age

	Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>	<i>LSD</i>
between groups	16015.287	3	5338.429	10.564	.000	21-25 and 26-30
within groups	209714.899	415	505.337			21 -25 and 31 -35
total	225730.186	418				

The results of pedagogical formation trainees' motivations for teaching score results by department are presented in Table 6.

Table 6. Pedagogical Formation Trainees' Motivations for teaching scores by department

department	N	\bar{X}	Std. Deviation	Std. Error
Turkish Lang.	61	208.83	19.11	2.44
Foreing Lang	73	223,70	16,88	3,08
Mathematics	38	212.07	22.17	3.59
Physics	27	211.88	23.00	4.42
Chemistry	27	218.92	17.81	3.42
Biology	30	218,53	21,78	2,54
Philosophy	33	193.63	31.55	5.49
Sosiology	45	210.17	25.39	3.78
Economics	34	208.52	23.84	4.08
Radio-TV-Cin	15	204.80	26.64	6.87
Psychology	36	205.80	16.47	2.74
Total	419	211.24	23.23	1.13

When Table 6 is examined, it is seen that the highest mean of motivations for teaching scores are in the foreign language department ($\bar{X} = 223.70$) and the lowest mean of motivations for teaching score in the philosophy department ($\bar{X} = 193.63$).

Table 7 presents the results of the one-way analysis of variance to determine the differentiation of pedagogical formation trainees' motivations for teaching scores by department.

Table 7. One-Way analysis of variance (ANOVA) results of Pedagogical Formation Trainees' Motivations for teaching scores by department

	Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i>	<i>LSD</i>
between groups	22739.35	10	2273.93	4.57	.000	Tur – For. Lang.
within groups	202990.83	408	497.52			Tur – Bio.
total	22739.35	418				Tur – Philo.
						For. Lang - Philo
						Mat – Philo
						Psy - Philo

The result of the analysis of variance in Table 7 revealed that this difference in the mean of motivations for teaching scores of pedagogical formation trainees was statistically significant ($F = 4.57$, $p < .05$). compared to that of the subjects who received pedagogical formation training. In other words, the motivation for teaching levels of pedagogical formation trainees varies in terms of department.

3. How do the pedagogical formation trainees describe the teaching profession?

In this section, the answers about how do pedagogical formation trainees describe the teaching profession in the open-ended questions form are examined. Table 8 contains the statements of pedagogical formation trainees about the teaching profession.

Table 8. Pedagogical formation trainees' views on teaching as a career choice

THEME	CODE	f (211)
personal utility 82	enjoyable	26
	easy	17
	learning through teaching	14
	voluntary	11
	appeals to heart and brain	8
	important	6
social utility 85	shapes the society	25
	respectful	23
	protects national values	9
	adopted by society	8
	valuable	7
	blessed	5
	leads the truth	4
	model for students	4
Expertise Requirement 44	requires patience	11
	requires responsibility	10
	requires devotion	9
	requires skills	8
	teaching profession	6

When Table 8 is examined, it is seen that the pedagogical formation trainees define the teaching profession as a pleasant occupation ($f = 82$). Also, while the vast majority indicated social effects ($f = 85$), some expressed the need for expertise and not easy as it seems ($f = 44$).

4. What are the factors influencing teaching profession choices of Pedagogical Formation Trainees

In this section, the answers about the factors influencing teaching profession choices of pedagogical formation trainees in the open-ended questions form are examined. Table 9 contains the statements of pedagogical formation trainees about the factors influencing teaching profession choices.

Table 9. Factors Influencing Teaching Profession Choices of Pedagogical Formation Trainees

THEME	CODE	f (421)
intrinsic motivations 117	compulsion	48
	desire to teach	24
	time for family	16
	life-long career	15
	embrace	13
	aspiration	11
extrinsic motivations 239	family pressure	42
	good status in the society	36
	Fees, job security	35
	holidays	30
	Prior learning experiences	28
	Reasonable workload	26
	time to earn extra money	21
	teaching skills	14
altruistic motivations 66	shape future	21
	love children/people	18
	contribution to the social development	16
	Raising Atatürkist individuals	11

When Table 9 is examined, intrinsic motivations for the teaching profession of pedagogical formation trainees are found to be higher ($f = 117$). Also, while quite a large majority indicated extrinsic motivations ($f = 239$) some have expressed altruistic motivations such as shaping society ($f = 66$).

Results and Discussion

This research was conducted to investigate the factors that influence teaching profession choices of Pedagogical Formation Trainees, to determine the perceptions on teaching and to question the relation of the profession choices with various variables. The general results of the study show that the teaching profession is preferred because of intrinsic, extrinsic and altruistic motivational reasons. Some situations in which internal causes are more effective, such as the reasonable workload, the duration of a vacation, satisfactory fees; gender is not a significant variable; the variation of age group and department make a difference in the individuals' motivation to teach are the main findings of the research. From this point forth, it can be referred that the reason for choosing the teaching profession is multidimensional.

However, similar situations are clearly seen in the literature when compared with other studies based on career choice of teacher candidates. The reasons for teaching profession choices of individuals are more dependent on internal motivation can be interpreted as it is mostly due to the opportunities that the profession will provide rather than the desire to teach. Similarly, Papanastasiou & Papanastasiou (1997) and Sinclair (2008) found that the attractiveness of choosing a teaching profession lies in more internal factors than external factors. The findings of the research conducted by Sinclair (2008) show that the self-interested and extrinsic factors on career choice of individuals are more dominant than those of intrinsic and altruistic factors. Moreover, in many studies (Acat & Yenilmez, 2004; Boz & Boz, 2008; Gençay & Gençay, 2007; Çermik, Doğan & Şahin, 2010; Gürbüz & Sülün, 2004; Salı, 2013) conducted in Turkey, individuals' motivations to teaching have been examined and the internal situations such as career, fees and social status have been seen as the foreground.

As stated in the answers to the open-ended questions, reasons such as "individual's score is enough only for the existing department" or "obligation" may have affected the choices which are significant on behalf of the departments with higher university entry points. A study by Salı (2013) shows that individuals may have department-specific reasons in career choice such as personal utility value and extrinsic career value. The finding on individuals' ages and career choices can be explained by the fact that candidates have to deal with career choices more autonomously based on age and experience (Çermik, Doğan & Şahin, 2010). Findings on extrinsic motivation confirm the findings of a study (Kniveton, 2004) that family and society are more effective than teachers on career choices of candidates. The present study indicates that Pedagogical Formation Trainees intend to choose a career in teaching and factors that are crucial in their choice of career. Based on the results of this

Pedagogical Formation Trainees have been influenced by intrinsic factors such as the long holidays, potential talent for teaching, social status, extrinsic factors such as family pressure, Prior learning experiences, Fees, job security and altruistic factors such as shaping future, sacred profession. The results of the study reveal that pedagogical formation trainees have similar reasons for career choice as teacher candidates in teacher training institutions. In this sense, it is considered that there is a need to determine the implementations that can be made for the teaching profession choices of pedagogical formation trainees and to examine the effectiveness of these implementations.

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Investigation of the Relationship Between University Students' Personal Characteristics and Success Tendencies

Mehmet Behzat TURAN

Erciyes University, School of Physical Education and Sports

Bariş KARAOĞLU

Erciyes University, School of Physical Education and Sports

Kenan KOÇ

Erciyes University, School of Physical Education and Sports

ABSTRACT

The purpose of this study was to analyze the relationship between university students' personal characteristics and success tendencies. For this purpose, study sample was composed of 494 students who were randomly selected from Erciyes University, Dumlupınar University and Selçuk University, schools of physical education and sports. In this study, to measure personal characteristics, Eysenck Personal Questionnaire -EPQ-RSV (Francis LJ, Brown LB, Philipchalk R 1992), 'Success Tendency Scale (Akin, A. Çetin, B. 2007)) and "Personal Information Form", which was developed by the researchers, were used as data collection method. Statistical analyses of the data obtained from Personal Information Form were conducted with SPSS 20.0 package program. Personal information and inventory total scores and factor scores related to participants were presented as identifying frequency (f) and percentage (%) values. Pearson Moment Product Correlation (r) was applied to determine the relationship between scores that were obtained from the scales, and Multiple Regression Analysis (β) was applied to determine whether the obtained scores were predictor of each other. It was found that Extroversion from personal characteristics was positively directed with learning tendency approach from success tendencies and lying personality characteristics was positively directed with tendency for performance approach. Additionally, a positive directed meaningful relationship was determined between psychoticism personal characteristics and tendency for performance approach. A meaningful relationship was not found between school of physical education and sports students' neuroticism personal characteristics and success tendencies sub-scales. According to results of our study, personal characteristics affect students' success tendencies as they affect many other areas. Therefore, it is thought that personal differences and personal characteristics should be considered while preparing education programs.

Keywords: Personality, Success Tendency, Physical Education

INTRODUCTION

Personal characteristics are another important factors in addition to success tendencies which are among the crucial factors affecting university students' academic status. Personality, with its broadest definition, can be defined as long-lasting tendencies which determine individuals' psychological reactions, including emotion, thoughts and behaviors, and determine their distinguishing characteristics as cannot be explained through biological conditions in a certain moment or through an environment in which environmental factors take place (Berens, 1999). According to many theoreticians, personality includes almost everything about cognitive, emotional, social and physical phenomena (Ewen 2009).

Although personality theoreticians define personality in different ways as focusing on different aspects according to their own thoughts, personality can be generally defined as combination of "unique and structured characteristics that differentiate individuals from each other" (İnanç, Yerlikaya, 2012).

In their personality theories, many factor analysts argue that there are five or more sub-factors comprising personality, however it can be seen that in Hans Eysenck's personality theory, dimensions comprising personality includes only three traits (Feist and Feist, 2008). At the beginning, Eysenck identified personality with two broad dimensions as neuroticism and extraversion, then evaluated as three dimensional structure as adding a third dimension, psychoticism. Extraversion dimension represents sociability and impulsivity; neuroticism dimension represents emotional stability and overreacting behaviors; psychoticism dimension represents distantness. Scale that was developed by Eysenck has a four-item structure as neuroticism, extraversion, psychoticism and lie personality (Thomas, Segal 2006) sociability and impulsivity characteristics are very important for extraversion while it also covers liveliness, aliveness, dynamism and optimism aspects. Contrary to extraversion characteristics; quietness, passiveness, unsociability, carefulness, distantness, thoughtfulness, pessimist, peacefulness and being in control are among main characteristics that define introversion (Feist and Feist, 2008). Individuals, who have high level of neuroticism, obtain characteristics like

emotionally overreacting and they have difficulty to call down after they emotionally triggered; moreover, they tend to complain physical symptoms including headache and back pains, furthermore they tend to have and suffer from worry and anxiety, however high neurotic individuals might not have any kinds of psychological symptoms, either (Eysenck 1996).

On the other hand, Success Tendency theory enables understanding how to gain sufficiency in learning process and how it could be developed (Akın & Çetin, 2007). Success tendency represents cognitive processes and activities that stem from will to reach targets (DeShon & Gillespie, 2005) and this tendency plays an important role within success context (Dweck & Leggett, 1988). Success tendencies theory analyzes students' behaviors related to learning and focuses on their aims related to learning duties that they obtain. Therefore, this theory focuses on individuals' thinking ways related to themselves and their own duties, instead of separating the individuals as those who have motivation and lack of motivation (Akın, 2006) According to success tendencies approach that were conceptualized by Dweck et al. (Ames, 1992; Dweck & Leggett, 1988; Nicholls, 1984); in all kinds of learning environment, there are 3 main academic targets that lead students' attitudes and behaviors to materials and academic duties that should be learnt: learning tendency approach, tendency for performance and avoidance of performance tendency. The main aim of students with learning tendency approach is to learn the related content and obtain the related knowledge and abilities. The main aim of students with tendency for performance is to approve their academic superiority and sufficiency levels compared to others as showing a higher success level related to the material that must be learnt. On the other hand, avoidance of performance tendency is defined with such behaviors as trying to finish responsibilities related to learning as obtaining an acceptable pass score with minimum effort (Özgüngör 2014). Will of students in schools of physical education and sports teaching to be more successful in terms of sports, starting from their childhood periods, their families' and societies' parallel will in this subject positively affect students' success tendencies due to they do not have any conflicts in this subject (Pepe 2015).

Considering success tendency only with its cognitive aspects remains insufficient when today's scientific developments are taken into account. While one of the most important determinants of university students' academic behaviors is their success tendencies, emotional moods that drive individuals for success also affect these tendencies, hence their personal characteristics play a determinant role in reaching the success.

The purpose of our study was to determine whether there was a relationship between success tendencies and personal characteristics of students who studied in schools of physical education and sports, and if there was a relationship, to determine its significance level. In literature review, it was seen that there were limited number of studies that focused on this subject and our study has been expected to contribute to literature in this manner.

MATERIAL-METHOD

STUDY GROUP

This research was conducted using correlational screening model. The screening model could be defined as "... researching models which aim to determine the possible covariance between two or more variables and/ or to determine covariance degrees" (Karasar 2007).

This research obtains a descriptive nature due to present analyses related to personal characteristics and success tendencies of students in schools of physical education and sports, and analyses for relationships between candidates' demographic characteristics.

Creating Voluntary Groups:

The research was conducted with voluntary groups. Study group was consisted of the 1st, 2nd, 3rd and 4th grade students in Erciyes University, Dumlupınar University and Selçuk University, Schools of Physical Education and Sports, in Physical Education and Sports Teaching, Coaching, Sport Management and Recreation Training Departments. Randomly selected 494 individuals, who studied in Schools of Physical Education and Sports, were included to the study.

DATA COLLECTION TOOLS

During questionnaire implementation process in the research, as making necessary explanations to candidates and allocating an appropriate time frame for each candidate, without creating any hurry, a healthy assessment duration for candidates was created by other instructors in universities in addition to the researchers. Additionally, convenient material and environmental conditions were prepared for participants to fill the questionnaires.

In this study, to measure personal characteristics, Eysenck Personal questionnaire -EPQ-RSV (Francis LJ, Brown LB, Philipchalk R 1992), 'Success Tendency Scale (Akın, A. Çetin, B. 2007)) and "Personal Information Form", which was developed by the researchers were used as data collection method.

Socio-demographic Information Form

Creating socio-demographic information form for the study, socio-demographic forms in other studies in literature that focused on personal characteristics and success tendencies were reviewed and a pool that was composed of characteristics to be observed in participants of this study was created. Then, socio-demographic information form was created as consulting statistics experts. The created socio-demographic information form included 7 questions to obtain information about participants' age, gender, education department, university, class, placing score to higher education and grade point average.

Table 1. Participants' Socio-Demographic Characteristics

	Variables	N	%
Gender	Male	301	60,9
	Female	193	39,1
Age	18-21	292	59,1
	22-25	182	36,8
	26-29	20	04,0
Department	Physical Education and Sports Teaching	136	27,5
	Coaching Education	126	25,5
	Sports Management	105	21,3
	Recreation Training	127	25,7
Class	1	110	22,3
	2	112	22,7
	3	137	27,7
	4	135	27,3
GDP	1.25-1.99	21	4,3
	2.00-2.99	358	72,5
	3.00-4.00	115	23,3
University	Erciyes	182	36,8
	Dumlupınar	164	33,2
	Selçuk	148	30,0
University Entrance Exam Score	160-200	88	17,8
	201-240	195	39,5
	241-280	159	32,2
	281-320	43	08,7
	321-360	9	01,8

Eysenck Personality Questionnaire

"Eysenck Personality Questionnaire (Revised and shortened version)" that was developed by Francis et al. (1992) and adapted to Turkish by Karancı et al. (2007) was used to identify participants' personal characteristics. Eysenck Personality Questionnaire (EPQ-RSV) is composed of 24 items and 4 sub-scales. These are as follows; neuroticism, extraversion, psychoticism and lie personality sub-scales (Francis et al., 1992).

Internal consistency co-efficiencies of the scale for extraversion, neuroticism, psychoticism and lie personality dimensions were found as 0.78, 0.65, 0.42 and 0.64, respectively and test-retest consistency was found as 0.84, 0.82, 0.69 and 0.69, respectively (Karancı et al., 2007). In this questionnaire in which each of dimensions are considered with 6 items, participants are asked to answer 24 questions as Yes (1) or No (0) format. The score that can be obtained from each of personal characteristics vary between 0 and 6.

Success Tendencies Scale

"Success Tendencies Scale" that was developed by Midgley et al., and adapted to Turkish by Akın and Çetin (20) was used as a data collection tool in this research. The original form of Success Tendencies Scale is composed of 18 questions and the first 6 questions are related to learning tendencies, the following six questions are related to tendency for performance and the last six questions are related to avoidance of performance tendencies. On the other hand, the Success Tendencies Scale that was used in this research is composed of 17

items. These 17 items in Success Tendencies Scale are distributed as follows; 1-6 items are about learning tendencies, 7-12 items are about tendency for performance and 13-17 questions are about avoidance of performance tendency. The scale employs 5-item Likert type evaluation format as “1=Never”, “2 =Rarely”, “3= Often”, “4 =Generally” and “5 =Always”.

Data Analysis

Data obtained from Personal Information Form, Personality Characteristics and Success Tendencies Scale was entered to SPSS 20.0 package program and analyses were conducted on this program. Personal information and inventory total scores and factor scores related to participants were presented as identifying frequency (f) and percentage (%) values. Pearson Moment Product Correlation (r) was applied to determine the relationship between scores that were obtained from the scales, and Multiple Regression Analysis (β) was applied to determine whether the obtained scores were estimation of each other.

FINDINGS

Table 2. Descriptive statistics related to students’ answers to questions

	N	Minimum	Maximum	X \pm SS
Extraversion	494	,00	6,00	3,34 \pm 1,28
Lie Personality	494	,00	5,00	2,61 \pm 1,01
Neuroticism	494	,00	6,00	3,03 \pm 1,46
Psychoticism	494	,00	6,00	2,92 \pm 1,16
Learning tendency approach	494	10,00	30,00	23,99 \pm 4,61
Tendency for performance approach	494	6,00	30,00	20,44 \pm 6,05
Avoidance of Performance Tendency	494	5,00	25,00	14,03 \pm 5,38

In Table 2, participants’ extraversion mean is 3,34, lie personality mean is 2,61, neuroticism mean is 3,03 and psychoticism mean is 2,29. Moreover, learning tendency approach mean is 23,99, tendency for performance approach mean is 20,44 and avoidance of performance tendency mean is 14,03.

Table 3. Correlation Coefficiencies of Students’ Personal Characteristics and Success Tendencies (n=494)

		1	2	3	4	5	6	7
1. Extraversion	R	1						
	P							
	N	494						
2. Lie Personality	R	,173**	1					
	P	,000						
	N	494	494					
3. Neuroticism	R	,266**	,158*	1				
	P	,000	,000					
	N	494	494	494				
4. Psychoticism	R	,061	,140*	,313*	1			
	P	,176	,002	,000				
	N	494	494	494	494			
5. Learning tendency Approach	R	,109*	-,008	,021	,013	1		
	P	,015	,862	,644	,778			
	N	494	494	494	494	494		
6. Tendency for performance Approach	R	,043	,119*	,085	,148**	,163**	1	
	P	,343	,008	,058	,001	,000		
	N	494	494	494	494	494	494	
7. Avoidance of Performance Tendency	R	-,089*	,050	,029	-,050	-,088	,068	1
	P	,047	,263	,523	,265	,050	,132	
	N	494	494	494	494	494	494	494

As presented in Table 3, a positive relationship was found between extraversion dimension and learning tendency approach ($r = .109$ $p = .015$) and low level and negative relationship was found between extraversion dimension and avoidance of performance tendency ($r = -.089$ $p = .047$), on the other hand, a meaningful relationship was not found between extraversion dimension and tendency for performance approach ($r = .043$ $p = .343$). A low level relationship was found between lie personality and tendency for performance approach ($r = .119$ $p = .008$) while a meaningful relationship was not found between lie personality and learning tendency approach ($r = -.008$ $p = .862$), and between lie personality and avoidance of performance tendency ($r = .050$ $p = .263$). A meaningful relationship was not found between neuroticism dimension and learning tendency approach ($r = .021$ $p = .644$), tendency for performance approach ($r = .085$ $p = .058$) and avoidance of performance tendency ($r = .029$ $p = .523$). A positive directed low level and meaningful relationship was found between psychoticism and tendency for performance approach ($r = .148$ $p = .001$) while a meaningful relationship was not found between psychoticism and learning tendencies ($r = .013$ $p = .778$) and between psychoticism and avoidance of performance tendency ($r = -.050$ $p = .265$).

Table 4. Regression Table Related to Predictions of Students' Personal Characteristics About Their Success Tendencies

Personal Characteristics		β	t	p	R	R ²	F	p
Extraversion	Success Tendencies				.139	.019	3,218	.023
	Learning tendency Approach	.096	2,113	.035				
	Tendency for performance Approach	.033	.719	.473				
	Avoidance of Performance Tendency	-.083	-1,844	.066				
Lie Personality	Success Tendencies				.128	.016	2,727	.044
	Learning tendency Approach	-.024	-.520	.603				
	Tendency for performance Approach	.120	2.628	.009				
	Avoidance of Performance Tendency	.040	.892	.373				
Neuroticism	Success Tendencies				.089	.008	1,298	.275
	Learning tendency Approach	.010	.211	.833				
	Tendency for performance Approach	.082	1,792	.074				
	Avoidance of Performance Tendency	.024	.532	.595				
Psychoticism	Success Tendencies				.161	.026	4,355	.005
	Learning tendency Approach	-.018	-.397	.691				
	Tendency for performance Approach	.155	3.429	.001				
	Avoidance of Performance Tendency	-.062	-1,390	.165				

F (3,493)

In Table 4, the model that was built between extraversion and success tendencies offers a meaningful relationship. ($R = .139$ $R^2 = .019$; $p < .005$) in analysis of t-test results related to regression co-efficiencies' significance level; it was seen that learning tendency ($t = 2,113$ $p = .005$) predicted extraversion dimension of success tendencies characteristics and explained 19% of total variance. ($F_{3,796} = 3,218$ $p < .005$).

In Table 4, the model that was built between lie personality and success tendencies offers a meaningful relationship. ($R=.128$ $R^2=.016$; $p<.005$) in analysis of t-test results related to regression co-efficiencies' significance level; it was seen that tendency for performance approach ($t=2,628$ $p=.005$) predicted lie personality of success tendencies characteristics and explained 16% of total variance. ($F_{3,796}=2,727$ $p<.005$).

In Table 4, the model that was built between neuroticism and success tendencies does not offer a meaningful relationship. ($F_{3,796}=1.298$ $p>.005$)

In Table 4, the model that was built between psychoticism and success tendencies offers a meaningful relationship. ($R=.161$ $R^2=.026$; $p<.005$) in analysis of t-test results related to regression co-efficiencies' significance level; it was seen that tendency for performance approach ($t=3,429$ $p=.001$) predicted psychoticism dimension of success tendencies characteristics and explained 26% of total variance. ($F_{3,796}=4,355$ $p<.001$)

DISCUSSION AND CONCLUSION

It is very important for students in schools of physical education and sports successfully graduate and to ensure their sufficiency levels in professional working life to be the highest level. In this process, determining personal characteristics to identify effective factors and indirectly determining success tendencies has become an interesting subject. In this study, personal characteristics that were predictors of success tendencies were considered as highly associated with students' motivation and success levels, hence the relationship between personal characteristics and success tendencies was analyzed.

A positive relationship was found between extraversion dimension and learning tendency approach while a positive and low level relationship was found between extraversion dimension and avoidance of performance tendency, on the other hand a meaningful relationship was not found between extraversion dimension and tendency for performance approach. Extraversion dimension is characterized generally with social, entrepreneurial, friendly, leadership and active characteristics (Malak, 2012) Although learning tendency is identified with different concepts in literature, it reflects a learning approach which is characterized with that this kind of students use their highest level of cognitive abilities for an assignment, consider the assignment important as they try to complete it with the best possible ways with their efforts, positive attitudes and interests (Pintrich, 2000). As could be understood from these references, extraversion individuals are active, entrepreneurial and have positive attitudes to reach information, moreover they have ambitions and positive attitudes in using their abilities in learning tendencies. In this standpoint, individuals with high level of learning tendencies are thought to reflect their extraversion characteristics.

A meaningful relationship was found between lie personality and tendency for performance approach, on the other hand a meaningful relationship was not found between learning tendency approach and avoidance of performance tendency. Performance aimed orientation, which is also known as ability oriented aims, is highly associated with an individual to perform a duty better than others and to consider others' performance and capabilities. Although this feature of success tendencies is less associated with use of cognitive strategies, it is highly associated with emotional influences (Küçüoğlu & Kaya & Turan 2010). Researchers determined that individuals wanted to avoid possible negative conditions related to their capabilities while they wished to use their capabilities in tendency for performances (Dweck & Leggett 1988; Elliot & Dweck, 1988). Students who tend to performance approach try to have a better performance compared to others and they try to prove that they have better abilities. (Yıldızbaş, 2017) In Eysenck personality test, there are some questions as shown below; '*Do you always do what you suggest others?*', '*Have you ever cheated on a game?*', '*Have you ever abuse someone for your own interest?*' Lie personality scale aims to measure deception levels made by individuals to create a good image. Individuals tend not to express themselves as they are but in a way the occasion calls for (Tosunoğlu, 2008). Individuals with tendency for performances are individuals who would like to win on a competition as bringing themselves forward, as their characteristics are presented above. Similarly, individuals who have lie personality tend to show themselves as good individuals. Therefore, it is thought that prediction of tendency for performances by lie personality is meaningful.

A meaningful relationship was not found between neuroticism characteristics and learning tendency approach, tendency for performance approach and avoidance of performance tendency.

A positive directed meaningful relationship was found between psychoticism and tendency for performance approach while a meaningful relationship was not found between learning tendency approach and avoidance of performance tendency. Individuals with high psychoticism scores tend to have hostile attitudes toward others as well as their relatives and friends. They like to upset and stultify others as they do not care about danger (Koç 1994). They are individuals who do not care about others, are lonely, have always different difficulties, do not adapt anything, tend to have cruel behaviors, have apathy levels, tend to have hostile behaviors toward even their

friends and relatives, and enjoy upsetting other people (Yavuzer 1982). Individuals with tendency for performances tend to prove their capabilities and tend to avoid conditions in which they might be seen as incapable (Dweck, 1988). Therefore, social comparison information is very important for individual who have tendency for performances (Butler, 1992). The highest level of success for individuals with tendency for performances is to perform duties that others could not do or to do duties as spending less effort compared to other people because success determinants for these kind of students are others' performance levels (Lemyre, Roberts and Ommundsen, 2002). It can be said that individuals with tendency for performances are external oriented (Kayış 2013). As presented in references, individuals who have high scores in psychoticism dimension tend to belittle others, act as if they are superior on others and see others unhappy, similarly, individuals who have tendency for performances tend to regard themselves as the best in a group, tend to become successful not for its benefits but for showing off and tend to prove themselves as better among other people. In this standpoint, it is thought that a meaningful relationship between psychoticism and tendency for performance approach is an expected result.

According to results of our study, personal characteristics affect students' success tendencies as they affect many other areas. Therefore, it is thought that personal differences and personal characteristics should be considered while preparing education programs. In literature review, it was seen that there were limited number of studies that focus on this subject and our study has been expected to contribute to literature in this manner.

SUGGESTIONS

- Students from three universities were included to this study. The number of volunteer participants could be increased to have better population representation level.
- Different aspects could be considered as conducting similar studies in affective and cognitive areas that predict success tendencies.
- Detailed trainings could be given to volunteers about the tests to be made.

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Investigation of the Subjective Well-Being of Psychological Counselling Candidates and The Perceived Social Support Levels

Seda TÜRKÖZ

European University of Lefke

Northern Cyprus

s.turkoz@hotmail.co.uk

ABSTRACT

The purpose of this study is to examine the multidimensional perceived social support and subjective well-being within psychological counselling candidates. The population of the study is the students who are the consultant candidates at a university in Northern Cyprus. The study was a descriptive study and was conducted in Northern Cyprus consisting of 142 (51.8%) female participants and 134 (48.2%) male participants. The participants were from a university in Northern Cyprus. In this study, the 'Subjective Well-Being Scale' which is developed by Dost (2005) and the 'Multi-Dimensional Perceived Social Support Scale' that adapted to Turkish by Eker and Akar (1995) were drawn upon in order to determine the level of well-being among the research participants. In this study a Personal Information Form, which is developed by the researcher is also implemented.

According to the results of the research, there was a statistically significant difference in subjective well - being among students according to gender, class, father's education and relationship status. In addition to this when the level of multidimensional perceived social support was examined, statistically significant difference was found according to gender, number of siblings, mother's education and relationship status. Therefore, it has been found that there is a moderate positive correlation between subjective well-being and perceived social support.

Key Words: Subjective well-being, Perceived social support, Psychological counselling

INTRODUCTION

Researches on the concept of “happiness” which is explained as the pleasure felt with the complete and constant realisation of a desire or will date back to ancient times. Studies conducted on how people feel happiness continue until today, and leading a happy life is an essential desire for all individuals. The scientific term used for individuals evaluating their lives as social-cultural beings and ruling their own lives is “subjective well-being”. Subjective well-being is defined as the subjective status of satisfaction consisting of cognitive and emotional components and a positive mental health (Deiner, 2001).

Subjective well-being is, first of all, subjective and is found in the experiences of individuals. In addition, it includes not only positive situations but also negative ones, as well as the evaluation of self-evaluation by the individuals of all aspects that affect their life. Therefore, self-evaluation by an individual of his/her life in cognitive and emotional terms is defined as his/her well-being. Subjective well-being has three essential elements, namely negative sensation, positive sensation and life satisfaction (Diener, 1984, cited in Eryılmaz 2011). Interest, trust, joy, pride reflect positive emotions whereas sorrow, hate, guilt and anger reflect negative emotions.

The positive and negative emotions in the lives of individuals constitute their subjective well-being levels as regards their own life satisfaction. The most important factor in people having a strong structure is the relation between their well-being, characters and their experiences. The situations where positive feelings are more compared to negative feelings show that subjective well-being is high, which is the most emphasised concept in positive psychology (Kaplan, 2016).

The happiness of individuals in their living area is affected by their mood, needs for social support, and communication and interaction with their environment. Every individual has an environment where s/he continues his/her life and personal characteristics. When these characteristics are evaluated, it can be seen that the situations in which an individual feels happy show difference depending on their unique living areas (Ekinci and Ekici, 2003).

Some situations related to a good life and, relatedly, a good mood, constitute the subjective area; however, subjective well-being concentrates on the evaluation of a person on his/her own life. In other words, subjective

well-being is explained with the concept that happiness is a personal value and only s/he can decide on how happy he/she is (Türkdoğan, 2010).

As a result of the studies conducted, it is seen that health, working life, income, social relations and social benefits in the life of an individual make contribution to the subjective well-being of a person. Well-being also affects the social relations of a person. People with strong social environment can easily overcome both economic and legal issues and experience positive feelings. Social support provides such feelings as emotional, information, material, belonging and socialization (cited in Yalçın, 2014).

Social support which is based on Kurt Lewin's Field Theory is defined by Lewin as the change occurring in behavioural psychological environment. In order to eliminate non-conforming behaviours and acquire new behaviours, individual needs a social environment. Social environment and the resulting social support is provided by important people in the life of an individual such as father, mother, friend, lover, spouse, relatives, teachers, neighbourhoods. Social support is a multi-dimensional concept which is hard to define and measure; but it can be described as an individual satisfying his needs for belonging, being loved, being appreciated and self-realisation through interaction (Ekinci & Ekici, 2003).

Social support is defined as the support obtained by individuals from their social and psychological environments and affects and spreads to some profession groups rapidly in a short period of time. It is especially effective in such fields as health, sociology, guidance and psychological consulting. Being in social relations plays a key role in both psychological and physical health. It is known that social support has a protective impact against stress, and it has positive correlation with well-being. The well-being level of people with more family members and friends is higher (Diener and Ryan 2009).

Social relations has an essential place in all periods of life and it adds meaning to the lives of individuals. The quality of life, happiness and, as a result, psychology of individuals with less social support can be affected negatively (Yalçın, 2014).

Psychological consultancy and guidance services aim at ensuring that individuals understand themselves, solve their problems, give realistic decisions, improve and realise themselves, define their expectations and grow as satisfied and productive people. It is important that psychological consultant candidates who will serve professionally in this field have well-being so that they can help other people in a healthy manner. This concept includes not only physical situation but also psychological and social situations. For this reason, social support is essential in this field. Candidates who will work in this area must feel good so that they can give effective services. It is essential that psychological consultant candidates feel good and perceive high level of social support in terms of professional efficiency.

The purpose of this study is to examine the subjective well-being and perceived social support levels of psychological consultant candidates.

For this purpose, answers are sought to the following fundamental questions:

1. Is there a significant difference between the subjective well-being of candidate consultants and their age, gender, grade, area they live, economic status, education level of mother and father, number of siblings and personal relations?
2. Is there a significant difference between the perceived social support of candidate consultants and their age, gender, grade, area they live, economic status, education level of mother and father, number of siblings and personal relations?
3. Is there a correlation between subjective well-being and perceived social support of candidate consultants?

METHOD

RESEARCH MODEL

A descriptive study was conducted based on quantitative research data so as to determine the subjective well-being and perceived social support level of psychological consultant candidates. The population of the study is the students who are the consultant candidates at a University in Northern Cyprus. The sample of the research consists of 274 (142 female, 134 male) psychological consultant candidates who are studying at a university in Northern Cyprus.

It is found out that 26.6% of the candidate consultants covered by the study are 21 years old, 33.2% are junior students, and 63.1% have intermediate economic status. 93.8% of the participants do not receive psychological support, 27% have 2 siblings, and 43% are staying at dormitory during academic year. As regards the education status of mothers of the candidates, 27% are elementary school graduates whereas the fathers are mostly (32.5%)

university and vocational college graduates. In addition, it has been found out that 50.4% of psychological consultant candidates have a private affair.

Table.1. Socio-demographic characteristics of participants

		f (%)
Age	18	6 (2,2)
	19	21 (7,7)
	20	45 (16,4)
	21	73 (26,6)
	22	61 (22,3)
	23 and above	68 (24,8)
Gender	Female	142 (51,8)
	Male	134 (48,2)
Grade	1	47 (17,2)
	2	83 (30,3)
	3	91 (33,2)
	4	53 (19,3)
Economic status	Upper	8 (2,9)
	Upper-intermediate	85 (31,0)
	Intermediate	173 (63,1)
	Lower-intermediate	5 (1,8)
	Lower	3 (1,1)
Psychological support	Yes	17 (6,2)
	No	257 (93,8)
Number of siblings	None	12 (4,4)
	1	72 (26,3)
	2	74 (27,0)
	3	48 (17,5)
	4	20 (7,3)
	5 and more	48 (17,5)
Where does he/she stay during academic year	At home alone	31 (11,3)
	With family	12 (4,4)
	At home with friends	113 (41,2)
	At dormitory	118 (43,0)
Education status of mother	Illiterate	27 (9,9)
	Literate	17 (6,2)
	Elementary school graduate	74 (27,0)
	Secondary school graduate	39 (14,2)
	High school and equivalent graduate	71 (25,9)
	Undergraduate / graduate degree	46 (16,8)
Education status of the father	Illiterate	5 (1,8)
	Literate	11 (4,0)
	Elementary school graduate	65 (23,7)

	Secondary school graduate	35 (12,8)
	High school and equivalent graduate	69 (25,2)
	University / vocational college graduate	89 (32,5)
Private relationship	Yes	138 (50,4)
	No	136 (49,6)

DATA COLLECTION TOOL

In order to determine the subjective well-being, “subjective well-being scale” was used, and “multi-dimensional perceived social support scale”, which was used to measure social support perception and the “personal information form” developed by the researcher were used in collecting the data of this study.

Subjective well-being scale

Subjective well-being scale developed by Dost (2005) was applied so as to determine the subjective well-being levels of psychological consultant candidates. The scale measures the subjective well-being levels by determining the frequency and intensity of negative and positive emotions. The reliability and validity of the scale which consists of 46 items was determined by Dost. Each item is evaluated with 5-Likert type scale. Twenty-six items of the scale include negative expressions. As a result of the study, Cronbach alpha reliability coefficient of the scale was found as .93, and test-retest reliability coefficient was found as $r: .86$. The lowest and highest scores which can be obtained in the scale are 46 and 230, respectively, which indicate the level of subjective well-being (Dost, 2005).

Multi-dimensional perceived social support scale

In order to measure social support perception, “multiple-dimension perceived social support scale” was used which was developed by Zimet et al. (1988) and adapted to Turkish by Eker and Arkar (1995). This scale has three sub-dimensions, namely family, friends and special person. The scale consists of 12 items and 7-Likert type ranking is used. Each sub-dimension consists of four items, each of which indicate the score as regards the sub-dimension, and the total of all sub-dimensions give the scale score. Internal consistency reliability of the scale was found to be between .80 and .85, which is an acceptable internal consistency in the scale and sub-scales alike (Eker, Akar and Yaldız, 2001).

Personal information form

The personal information form consisting of 10 items which was developed by the researcher was applied to psychological consultancy candidates in order to identify their age, gender, grade, economic status, psychological support, number of siblings, the place they stayed during academic year, education status of their parents and their private relationships.

ANALYSIS OF DATA

As regards analysis of the data, Mann-Whitney U test and Kruskal-Wallis H test were used in order to determine the differences between groups in non-parametric measurements. Pearson Correlation coefficient was used in order to identify the relation between perceived support and subjective well-being levels.

FINDINGS

The findings of this study are presented in order within the framework of the following research question.

1. *Is there a significant difference between the subjective well-being of candidate consultants and their age, gender, grade, area they live, economic status, education level of mother and father, number of siblings and personal relations?*

As a result of the obtained findings, subjective well-being level of candidate consultants does not show statistically significant difference according to their age [$\chi^2 (5)=1,63, p>.05$], economic status [$\chi^2 (4)=7,091, p>.05$], psychological support ($U=2060,50, p>.05$), number of siblings [$\chi^2 (5)=1,252, p>.05$], place where they stay during academic year [$\chi^2 (3)=6,548, p>.05$], and education status of the mother [$\chi^2 (5)=3,563, p>.05$]. On

the other hand, statistically significant difference was found out according to the gender, education status of father and private relationship status of candidate consultants ($p<0.05$).

The results obtained as regards subjective well-being level and gender variable of psychological consultant candidates are provided in table 2.

Table 2. Mann Whitney- U Test results as regards subjective well-being level and gender variable of psychological consultant candidates

		N	Rank mean	Rank total	U	Z	p
Subjective well-being	Female	142	147,63	20964,00	7791,00	2,317	,020
	Male	132	125,47	16437,00			

$p<0.05^*$

It has been found out that subjective well-being levels of psychological consultant candidates show statistically significant difference according to gender variable ($p<0.05$). It is identified that female psychological consultant candidates ($\bar{X}=147,63$) have higher subjective well-being level compared to male psychological consultant candidates ($\bar{X}=125,47$).

The results obtained as regards subjective well-being level and grade variable of psychological consultant candidates are provided in table 3.

Table 3. Kruskal Wallis Test results as regards subjective well-being level and grade variable of psychological consultant candidates

Grade	N	Rank mean	Sd	X²	P
1	47	148,71	3	7,901	,048
2	83	120,37			
3	91	150,55			
4	53	129,25			
Total	274				

$p<0.05^*$

It has been found out that subjective well-being levels of psychological consultant candidates show statistically significant difference according to grade variable ($p<0.05$). Subjective well-being scores of junior students ($\bar{X}=150,55$) and freshman students ($\bar{X}=148,71$) are higher compared to sophomore ($\bar{X}=120,37$) and senior ($\bar{X}=129,25$) students.

Table 4. Kruskal Wallis Test results as regards subjective well-being level and education status of the father variable of psychological consultant candidates

Education	n	Rank mean	Sd	X²	P
Illiterate	5	88,40	5	12,692	,026
Literate	11	66,14			
Elementary school graduate	65	138,11			
Secondary school graduate	35	136,16			
Secondary school graduate	69	136,27			
High school and equivalent graduate	89	148,57			
University	274				
Total					

$p<0.05^*$

When the education status of the fathers of candidate psychological consultants is examined, it is seen that the children of university graduate fathers have higher subjective well-being levels ($\bar{X}=148,57$). The lowest subjective well-being score belongs to the children of literate fathers ($\bar{X}=66,14$). The scores are increasing when one goes from secondary school graduate, high school graduate and university graduate fathers. However, the

subjective well-being mean of elementary school graduate fathers ($\bar{X}=138,11$) is higher compared to secondary school graduates ($\bar{X}=136,16$) and high school graduates ($\bar{X}=136,27$).

Table 5. Mann Whitney- U Test results as regards subjective well-being level and private relationship variable of psychological consultant candidates

		n	Rank mean	Rank total	U	z	P
Private relationship	Yes	138	147,96	20418,00	7803,00	2,319	,020
	No	136	125,80	16983,00			

p<0.05*

When the subjective well-being scores of candidate consultants according to private relationship variable is examined, it is seen that the subjective well-being scores of consultants with private relationship ($\bar{X}=147,96$) is higher compared to subjective well-being scores of consultants with no private relationship ($\bar{X}=125,8$).

2. *Is there a significant difference between the perceived social support of candidate consultants and their age, gender, grade, area they live, economic status, education level of mother and father, number of siblings and personal relations?*

Statistically significant difference has not been identified in the perceived social support scores of candidate consultants in terms of their age [$\chi^2(5)=4.89$, p>.05], grade [$\chi^2(3)=3.88$, p>.05], and economic status [$\chi^2(4)=2.06$, p>.05]. It is also seen that statistically significant difference does not exist in terms of age, grade and economic status in sub-scales of perceived social support.

The findings that were gathered show that there is no statistically significant difference in the perceived social support scores of candidate consultants in terms of the place where they stay during academic year [$\chi^2(3)=2.21$, p>.05] and education status of the father [$\chi^2(5)=8.60$, p>.05] and psychological support (U=2153.00, p>.05) variables. An examination of the sub-dimensions of perceived social support also shows that there is no statistically significant difference in the perceived social support scores of candidate consultants in terms of the place where they stay during academic year, education status of the father and psychological support variables. According to gender variable, perceived social support did not show statistically significant difference in family sub-dimension (U=8187.00, p>.05) whereas significant difference was found in other sub-dimensions.

Table 6. Mann Whitney- U Test results as regards perceived social support level and friend and significant other sub-dimensions of psychological consultant candidates according to gender variable

		n	Rank mean	Rank total	U	z	p
Friends	Female	142	147,38	20928,50	7968,50	2,156	,031
	Male	132	126,87	16746,50			
Significant other	Female	142	146,56	20811,50	8085,50	1,990	,047
	Male	132	127,75	16863,50			

p<0.05*

As a result of the gathered data, it was found out that the perceived social support scores obtained by candidate psychological consultants at friend and significant other sub-dimension is higher in females compared to males. Statistically significant difference was not seen in perceived social support significant other [$\chi^2(5)=1.76$, p>.05] and family s [$\chi^2(5)=6.14$, p>.05] sub-dimensions of candidate psychological consultants according to the number of siblings variable whereas significant difference was observed in friends dimension.

Table 7. Kruskal Wallis Test results of perceived social support level of candidate psychological consultants according to friendship sub-dimension siblings variable

Number of siblings	n	Rank mean	Sd	X ²	p
0	12	147,92	5	17,385	,004
1	72	154,40			
2	74	151,76			
3	48	120,27			
4	20	87,65			
5 and more	48	125,56			
Total	274				

p<0.05*

When table 7 is examined, it is seen that the perceived social support level of candidate consultants with 1 sibling is higher in friendship sub-dimension (\bar{X} =154,40). The lowest perceived social support score is obtained by those with 4 siblings (\bar{X} = 87,65).

Significant difference was found in all sub-dimensions of perceived social support of candidate's psychological consultants according to the education status of mother variable the results are given in table 8 accordingly.

Table 8. Kruskal Wallis results of perceived social support sub-dimensions of psychological consultant candidates according to the education status of mother variable

	Education	n	Rank mean	Sd	X ²	P
Friend	Illiterate	27	118,85	5	19,602	,001
	Literate	17	78,74			
	Elementary school graduate	74	129,41			
	Secondary school graduate	39	136,95			
	High school and equivalent graduate	71	163,07			
	University graduate	46	144,18			
Family	Illiterate	27	128,17	5	17,258	,004
	Literate	17	72,56			
	Elementary school graduate	74	139,43			
	Secondary school graduate	39	150,81			
	High school and equivalent graduate	71	154,13			
	University graduate	46	126,93			
Significant other	Illiterate	27	112,78	5	11,884	,036
	Literate	17	98,09			
	Elementary school graduate	74	134,22			
	Secondary school graduate	39	143,14			
	High school and equivalent graduate	71	157,23			
	University graduate	46	136,62			
Total	Illiterate	27	112,37	5	22,003	,001
	Literate	17	73,24			
	Elementary school graduate	74	133,25			
	Secondary school graduate	39	145,59			
	High school and equivalent graduate	71	163,15			
	University graduate	46	136,38			

p<0.05*

Statistically significant difference has been identified in all perceived social support sub-dimensions according to the education status of mother variable of candidate's consultants ($p < 0.05$). Table 8 shows that the scores obtained by high school and equivalent graduates from perceived social support is higher in friend, family and significant other sub-dimensions. The lowest scores are obtained by literates.

When the perceived social support scores of psychological consultant candidates are examined according to significant other variable, no significant difference was witnessed in friend sub-dimension ($U = 8161$, $p > .05$) whereas significant difference was found in family and significant other sub-dimensions.

Table 9. Mann Whitney U Test results of psychological consultant candidates from perceived social support family and significant other sub-dimensions according to private relationship variable

		N	Rank mean	Rank total	U	z	p
Family	Yes	138	146,74	20250,00	8109,00	1,966	,049
	No	136	128,13	17425,00			
Significant other	Yes	138	178,87	24684,00	3675,00	8,825	,000
	No	136	95,52	12991,00			
Total	Yes	138	165,10	22784,00	5575,00	5,813	,000
	No	136	109,49	14891,00			

$p < 0.05^*$

When the perceived social support family and significant other sub-dimension scores according to the private relationship variable of candidate's consultants is examined, it is observed that the perceived social support score of candidate's consultants with relationship is higher compared to those who does not have relationship in both sub-dimensions ($p < 0.05$).

3. *Is there a correlation between subjective well-being and perceived social support of candidate consultants?*

Table 10. Correlation between subjective well-being and perceived social support

		Subjective well-being total score	Perceived social support total score	Perceived social support friends sub-dimension score	Perceived social support family sub-dimension score	Perceived social support significant other score
Subjective well-being total score	R (2-tailed) p	1	,512** ,000	,418** ,000	,502** ,000	,317** ,000
Perceived social support total score	R (2-tailed) p		1	,783** ,000	,771** ,000	,793** ,000
Perceived social support friends sub-dimension score	R (2-tailed) p			1	,566** ,000	,364** ,000
Perceived social support family sub-dimension score	R (2-tailed) p				1	,352** ,000
Perceived social support significant other score	R (2-tailed) p					1

$p < 0.01^{**}$

It has been found out that there is a statistically significant relationship between subjective well-being and perceived social support of candidate's consultants. Positive medium-level correlation was identified between subjective well-being and perceived social support ($r = .51$, $p < 0.01^{**}$). Positive high correlation was found between perceived social support and sub-dimensions of friends ($r = .78$, $p < 0.01^{**}$), family ($r = .71$, $p < 0.01^{**}$) and significant other ($r = .79$, $p < 0.01^{**}$). In addition, positive medium-level correlation is detected between subjective well-being and perceived social support sub-dimensions of friends ($r = .41$, $p < 0.01^{**}$), family ($r = .52$, $p < 0.01^{**}$) and significant other ($r = .31$, $p < 0.01^{**}$).

DISCUSSION

According to the findings obtained in this study, it has been found out that the subjective well-being of females is higher compared to males. This finding is consistent with the results of studies conducted by Yavuzer and Gündoğdu (2012) and Güler and Gazioğlu (2008). When other studies in the literature are examined, different results can be observed as regards gender variable and subjective well-being. Some studies did not find significant difference as regards gender (Dilmaç and Bozgeyikli, 2009; Tümkaya, 2011; Saygın, 2008), whereas some others did. In some studies the results are in favour of females whereas in some others the results show the opposite direction (İlhan, 2005; Safoz and Güven, 2008). The reason for such inconsistency of results about gender can be associated with the cultural characteristics of the relevant society. In addition, considering that the study is conducted on candidates at education faculty and each candidate is also a teacher candidate, the higher level of subjective well-being in females can be explained by the perception that teaching is mostly seen as a female occupation.

According to the findings in grade variable, it has been found out that the subjective well-being scores of junior and freshman psychological consultant candidates are higher compared to sophomore and senior students. This finding can be related to the fact that candidates who just began university are enthusiastic about their profession and self-confident and courageous for being a freshman. At the second grade the candidates are getting used to the university, hence lower scores. In the third years the candidates are approaching to their professions step by step and feeling courageous. In the fourth year, scores are decreasing again probably due to the anxiety of finding a job after graduation and the public personnel selection examination (Public Personnel Selection Examination, PPSE).

When the obtained findings are examined, it is seen that the children of fathers who are university graduates have higher subjective well-being scores. The scores are increasing from secondary-high school graduates to university graduates. It can be assumed that as level of education increases, more conscious individuals are raised and the families with more conscious children are more satisfied; thus, the children in satisfied families are better and happier.

Another finding of the study in terms of private relationship and subjective well-being is that subjective well-being of candidates with private relationship is higher. This finding shows that, considering that significant other is the predictor of positive affection, intimacy, trust, and being loved bring happiness, and positively affects the well-being of the individual. According to Yetim (2001), a relationship in which individuals support each other in terms of emotions, develop deep understanding about the other and complete each other in a harmonious way increases the happiness and satisfaction of the individual which is considered to have a positive impact on the subjective well-being of the person.

When the findings as regards perceived social support are examined, it was seen that it showed statistically significant difference according to gender and the perceived social support of females is higher compared to males. This result is consistent with the studies of Yamaç (2009) and Eker and Arkar (1995).

When the obtained findings are examined in terms of the relationship between perceived social support and number of siblings, it is seen that the scores of candidates with one sibling are higher. This result is in conflict with the studies conducted by Demirtaş (2007) and Şahin (2011) but agrees with the research conducted by Şencan (2009). This result is found out to be statistically significant in friendship sub-dimension which can be associated with the fact that at university individuals are distant from their families and spending their time mostly with the friends in their social environments.

It has been identified that perceived social support provided statistically significant results according to the education status of mother variable. It is seen that the score of high school and equivalent graduates is higher. The findings are similar with some studies in the literature (Okanlı, 1999; Şahin, 2011) and conflict with others (Başer, 2006). It is expected that perceived social support would increase with the level of education. However, the scores of university and vocational college graduate mothers is lower than high school and equivalent graduate mothers, which can be explained with the assumption that usually university graduate mothers are working mothers who can spend less time with their children due to their workload.

Another finding which was obtained is that, as regards the relation between perceived social support and private relationship, it is seen that individuals with private relationship have higher levels of perceived social support. In a study conducted by Gallagher and Brodrick (2008) the support given by significant other was found as the predictor of positive affection. This result supports the obtained findings in this study. It can be claimed that people with private relationship enjoy higher levels of perceived social support and thus higher well-being levels.

Another finding obtained in the study is that there is a positive medium-level correlation between subjective well-being and perceived social support level. This result is similar with other studies in the literature (Yalçın, 2014; Şahin, 2011). It can be claimed that happy individuals are those who receive more social support and, thus, as the perceived social support increases, so does their subjective well-being.

CONCLUSION AND RECOMMENDATIONS

In the end of this study, statistically significant difference was not found between subjective well-being of psychological consultant candidates and such variables as their age, economic status, psychological support, number of siblings, place where they stay during academic year and education status of the mother. On the contrary, as regards gender variable, statistically significant difference was found in favour of females. Considering subjective well-being and grade variable, it was seen that the scores of freshman and junior students are higher compared to sophomore and senior students. Statistically significant difference was found between subjective well-being and education status of the father, as it was identified that children of university graduate fathers had higher subjective well-being levels and as level of education increased, so did well-being level. It was also found out that people with private relationship are happier and thus they enjoy higher levels of subjective well-being.

Statistically significant difference was not found out between perceived social support levels of psychological consultant candidates and such variables as their age, grade, economic status, psychological support, place where they stay during academic year and education status of the father. It was seen that according to gender variable females had higher perceived social support levels than males. As per the variable of number of siblings, perceived social support level of candidates with one sibling was found out higher in friends sub-dimension whereas the candidates with four siblings revealed the lowest perceived social support level. It was found out that in all sub-dimensions of education status of mother perceived social support was statistically significant in that the children of high school and equivalent graduate mothers had higher perceived social support than others. It was also observed that individuals with private relationship had higher perceived social support levels which are statistically significant in family and significant other sub-dimensions and that their perceived social support level is higher compared to individuals who have no private relationship.

In conclusion, positive medium-level correlation was found out between perceived social support and subjective well-being of candidate psychological consultants.

Based on the obtained results, the following recommendations can be made:

- In order to make a more comprehensive study, a wider sample of psychological consultant candidates can be studied from different universities.
- Education programs can be developed especially in order to increase subjective well-being of senior psychological consultant candidates.
- This study which was conducted with quantitative method can be repeated with qualitative methods and new information can be gathered.
- Studies can be conducted on comparing the research performed in Turkey and abroad.

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Investigation on The Effect of the College Curriculum Of Physical School College of Physical Education on Communication Skills

Alper TANRIKULU

*Erciyes University, Institute of Health Sciences,
Department of Physical Education and Sport Sciences*

Kuddusi KILIÇ

*Erciyes University, Institute of Health Sciences,
Department of Physical Education and Sport Sciences*

Mehmet Behzat TURAN

*Erciyes University,
School of Physical Education and Sports*

Kerimhan KAYNAK

*Erciyes University,
School of Physical Education and Sports*

ABSTRACT

The aim of this research was to examine the effect of the students who attended the Erciyes University School of Physical Education and Sports on the communication skills of the courses they have taken. 600 randomly selected students participated in the research voluntarily. As means of data collection in the survey; Communication skills scale (Ersanlı and Balcı, 1998) and the personal information form prepared by the researcher. The obtained data were analyzed statistically with SPSS 20.0 package program. The personal information and inventory total scores and factor scores for the candidates were determined by determining frequency (f) and percent (%) values. While

Mann-Whitney U test statistic was used in comparison with gender, Kruskal Wallis test statistic was used in comparison according to ages, departments, classes and academic average.

As a result; When the levels of communication skills of physical education and sports college students are examined; There is no statistical difference according to the average academic grade average; Statistically significant differences were found according to gender, age, department and class variables.

Key words: Communication skills, student, physical education

INTRODUCTION

Communication, complex and multidimensional, is a process that exists in every cycle of life from the birth of man to his death. In addition to being a biological entity, it is necessary for a person who is a social and cultural entity to be in a healthy communication process, to transfer the experiences gained from the beginning (Güler, D.). For this reason, communication is a tool that a person needs to improve his technical knowledge and skills (Ersanlı, K., Balcı, S.). Since the time we passed from the age of industry to the age of information, the progress of technology and the increase in the application of social media means that the face-to-face communication skills have diminished and only written and verbal communication has increased through social media. We can see that the quality of the communication is also lowered because there is no emotional expression in the message which includes these communications made. However, it can be said that in situations such as failure to communicate with the individual, communication or misrepresentation of the individual, the individual may become impatient and unhappy with loneliness over time. (Jones, W).

Communication: The interaction process is defined as the process of sharing and sharing the meanings of knowledge, ideas, attitudes, emotions and skills in order to create a change of behavior between the source and target.

It is the unit that transmits the source, the information, the message. (Demirel, Ö.) The message is the content of the communication. It is the part where the message to be sent (emotion, thought, intention, motive, action, etc.) occurs and is selected to be sent. The channel is the presentation of the message. The message can be sent verbally, non-verbally or in writing, and it functions as a channel for all visual and audiovisual means provided by today's technology. A receiver is a unit that receives messages from a source. It is the person who reads, listens and follows the message (Demirel, Ö, Tozluyurt E). The feedback is the response of the recipient to the message. It shows how the recipient interprets the message.

Demirel-Seferoğlu-Yağıcı (2001: 20), in addition to Çilenti (1988), which refers to the section where the living spaces of the source and the recipient intersect, as the "common living space"; The greater the extent to which the common areas of life are mentioned in the learning-teaching process, the greater the success will be.

Teachers' morale, motivation, and psychological status influence the educational environment significantly at institutions where educational activities are conducted. As teachers feel peaceful and happy in their working environment, this situation will be reflected positively in the classroom environment and the success of educational activities will increase (Karaoglu et al., 2016). A message is a message to the symbols that enable the emotion and thought of a life to be encoded, verbally, non-verbally or in writing, to reach the recipient. The message is that the emotions and thoughts from the sender are perceived by the receiver's emotional organs. The more messages the message reaches to the sensory organ, the more successful the narration becomes (Baltaş, Z., Baltaş, A.) The ability to give messages in a way that is verbally, non-verbally or in writing can be made possible by the enhancement of sending skills. The person's ability to send messages is shaped by the social environment and personality characteristics experienced (Baltaş, Z., Baltaş, A.). In addition, according to Baltaş and Baltaş (1999), there are three main factors affecting the encoding of the message to be transmitted in the communication process. These; The format of the relationship, the context of the relationship and the purposes of the relationship. The roles that people play in society, the status and situation they are in, as well as the factors such as location, time and age, are factors that influence the coding of meaning. Nevertheless, the purpose of the relationship in positive communication and in maintaining communication effectively plays a very important role. It is the basic characteristics that determine the encoding of the meaning of the purpose and the meaning of the recipient. (Baltas, Z., Baltas, A.).

Nowadays, it is inevitable that communication skills of people in an age when interpersonal communication is important should be at a high level. The reality is that these skills of university students who will guide the future of society are at the highest level. Particularly in the physical education and sports college, physical education and sports teachers, trainer training, sports management and recreation training programs are not jobs that require people to have any machinery or body power in their future fields and they will directly communicate with people and direct them. It is aimed to examine the effect of the communication skills of the courses taken in the programs they have studied for.

MATERIAL and METHOD

Creation of a Voluntary Group

Study group Erciyes University consists of students who are in 1st, 2nd, 3rd and 4th class in Physical Education and Sport Teacher Training, Coaching Education, Sports Management and Recreation Education departments of Physical Education and Sport College.

The student's universe is composed of 1440 students studying at physical education and sports college. The sample group consisted of 600 randomly selected students.

Data Collection Tools

As means of data collection in the survey; Communication skills scale and socio demographic information form were used.

Table 1. Participants' socio-demographic characteristics

Variable	Gruplar	N	%
Gender	Male	362	60,3
	Female	238	39,7
Age	18-21	311	51,8
	22-25	254	42,3
	26-29	35	5,8
Department	Physical Education Teaching	150	25,0
	Coaching Education	150	25,0
	Sport Management	150	25,0
	Recreation Education	150	25,0
Grade	1	136	22,7
	2	162	27,0
	3	163	27,2
	4	139	23,2
General Academic Average	1.25-1.99	90	15,0
	2.00-2.99	313	52,2
	3.00-4.00	197	32,8

When Table 1 is examined, it is seen that 60.3% of the volunteers participating in the study are male, 39.7% are female, 51.8% of the volunteers are 18-21, 42.3% of the volunteers are 22-25, 5.8% 25% of them are in the age

of 26-29, 25% of them are in BES teacher education, 25.0% are in coaching education, 25.0% in sports management and 25% in recreation education. 27.2% of the 27.0% of the students were in the 3rd grade and 23.2% of the students were in the 4th grade, 27.0% of the students were in the 2nd grade, 1.25-1.99 of the 15.0%, 2.00- 2.99 and 32.8% have an average of 3.00-4.00.

Personal Information Form

A form developed by the researcher to collect data about participants' independent variables; It consists of 5 questions to determine students' age, gender, department, class and general weighted grade averages.

Communication Skills Scale

The "Communication Skills Inventory" developed by Ersanlı and Balcı (1998) consists of 45 likert type and 3 sub-dimensions. According to the content of these sub-dimensions; (Mental) cognitive, (emotional) affective and behavioral. There are 15 items measuring each dimension. Cronbach's alpha reliability coefficient was found to be .68, and Cronbach's alpha reliability coefficient was found to be .64 in the test using the test-retest method. The Cronbach Alpha coefficient applied to determine the internal consistency of the scale on the communication skills of emotional intelligence: University 371 C.16, S.1 was found to be .72. There was a .001 correlation between the total score of the communication skills inventory and the subscales and a .001 correlation within the subscales themselves (Ersan and Balcı, 1998).

Investigation of The Course Curriculum

Table2. Erciyes University School of Physical Education and Sports 2016-2017 Distribution of Lessons

		Physical Education Teaching	Coaching Education	Sport Management	Recreation Education
2016- 2017 Yılı Fall Semester	Theoric	61 Saat	69 Saat	61 Saat	67 Saat
	Practice	32 Saat	43 Saat	18 Saat	36 Saat
	Total	93 Saat	112 Saat	79 Saat	103 Saat
2016- 2017 Yılı Spring Semester	Theoric	72 Saat	73 Saat	57 Saat	65 Saat
	Practice	44 Saat	34 Saat	22 Saat	35 Saat
	Total	116 Saat	107 Saat	79 Saat	100 Saat
The Overall Total		209 Saat	219 Saat	158 Saat	203 Saat

Fall Semester Evaluation

In the Department of Physical Education and Sports Teaching, there are 7 elective courses, 30 pens in total, for the period of 2016-2017. 61 hours of these courses are theoretical, 32 hours are applied and 93 hours in total.

In the Department of Coaching Education, there are 6 elective courses for the fall semester 2016-2017, total 44 courses. These courses cover 69 hours in theory and 43 hours in total and 112 hours in total.

There are 9 elective courses for the fall semester 2016-2017 in the Department of Sports Management. 61 hours of these courses are theoretical, 18 hours are applied and 79 hours in total.

In Recreation Department, for the fall semester of 2016-2017, there are 40 elective courses in total of 14 electives. 67 hours of these courses include 36 hours of theoretical hours and a total of 103 hours of lessons.

Spring Semester Evaluation

In the Department of Physical Education and Sports Teaching, there are 34 pens in 10 elective courses for the spring term of 2016-2017. 72 hours of theoretical and 44 hours of these courses cover 116 hours in total.

In the Department of Coaching Education, there are 42 practices in total for the 2016-2017 spring semester. These courses cover a total of 107 hours of theoretical hours with 73 hours applied and 34 hours applied.

There is 31 elective courses in 9 elective courses for the spring semester 2016-2017 in Sports Management Department. 57 hours of these courses are theoretical, 22 hours are applied and 79 hours in total.

There are 11 elective courses in the recreation department for the spring semester 2016-2017, with a total of 35 pens. These lessons include 65 hours of theoretical hours and 35 hours of total hours of lessons.

Erciyes University School of Physical Education and Sports Within the scope of the 2016-2017 academic year, 133 hours of theoretical and 76 hours of practical training are taught for the Department of Physical Education and Sports Teaching. For the Department of Coaching Education, 142 hours of theoretical and 77 hours of 219 hours of instruction are given. For Sports Management Department, 118 hours of theoretical and 40 hours of practice are taught for 158 hours in total. For the Recreation Department, 132 hours of theory and 71 hours of practical training are given for a total of 203 hours.

Analysis of Data

The data obtained from the personal information form and communication skills scale were coded and entered into the SPSS 20.0 package program and the analyzes were made through this program. The personal

information and inventory total scores and factor scores for the candidates were determined by determining frequency (f) and percent (%) values. While Mann-Whitney U test statistic was used in comparison with gender, Kruskal Wallis test statistic was used in comparison with ages, departments, classes and general weighted grade averages.

FINDINGS

Table3. Descriptive statistic of the responses that students gave to the survey

	N	Min	Max	X±SS
Mental Communication Skill	600	26,00	26,00	53.35±6.43
Emotional Communication Skill	600	29,00	29,00	49.57±6.86
Behavioral Communication Skill	600	22,00	22,00	53.2±6.52
Communication Skill Total	600	79,00	79,00	156.11±16.84

When Table 2 is examined; Participants participating in the study were found to have mental communication skill score of 53.35 ± 6.43 , emotional communication skill score of 49.57 ± 6.86 , behavioral communication skill score of 53.2 ± 6.52 and communication skill total score of 156.11 ± 16.84 .

Table4. Evaluation of Participants' Communication Skill Levels By Gender

Communication Skill	Gender	N	Median	Z	P
Mental Communication Skill	Male	362	53.00	-1.772	.076
	Female	238	53.00		
Emotional Communication Skill	Male	362	49.00	-2.13	0.33*
	Female	238	48.00		
Behavioral Communication Skill	Male	362	53.00	-.403	.687
	Female	238	53.00		
Communication Skill Total	Male	362	156.00	-1.579	.114
	Female	238	155.00		

p<0.005*

When Table 3 is examined, Statistically significant difference was found in the emotional communication skill score in comparing the participants according to their genders ($p < 0.05$). There was no statistically significant difference in mental communication skill, behavioral communication skill and communication skill total scores ($p > 0.05$).

Table5. Evaluation of Participants' Communication Skill Levels By Age

Communication Skill	Age Group	N	Median	X ²	P	U
Mental Communication Skill	18-21 ¹	311	53.00	5.376	.068	-
	22-25 ²	254	54.00			
	26-29 ³	35	52.00			
Emotional Communication Skill	18-21 ¹	311	49.00	8.103	.017*	1-2
	22-25 ²	254	50.00			
	26-29 ³	35	50.00			
Behavioral Communication Skill	18-21 ¹	311	53.00	4.127	.127	-
	22-25 ²	254	157.00			
	26-29 ³	35	51.00			
Communication Skill Total	18-21 ¹	311	154.00	4.574	.102	-
	22-25 ²	254	158.00			
	26-29 ³	35				

p<0.005*

When Table 4 is examined, Statistically significant difference was found between 18-21 and 22-25 years in the emotional communication skill score according to age of participants ($p < 0.05$). There was no statistically significant difference in mental communication skill, behavioral communication skill and communication skill total scores ($p > 0.05$).

Table6. Evaluation of Participants' Communication Skill Levels By Departments

Communication Skill	Departments	N	Median	X ²	p	U
Mental Communication Skill	PE Teaching ^a	150	53.00	7.542	.056	-
	Coaching Education ^b	150	53.00			
	Sport Management ^c	150	52.00			
	Recreation Education ^d	150	54.00			
Emotional Communication Skill	PE Teaching ^a	150	49.00	12.546	.006*	a-d
	Coaching Education ^b	150	49.00			b-d
	Sport Management ^c	150	49.00			c-d
	Recreation Education ^d	150	51.00			
Behavioral Communication Skill	PE Teaching ^a	150	54.00	9.600	.022*	a-b
	Coaching Education ^b	150	52.00			b-d
	Sport Management ^c	150	52.50			
	Recreation Education ^d	150	54.00			
Communication Skill Total	PE Teaching ^a	150	154.50	9.516	.023*	a-d
	Coaching Education ^b	150	155.00			b-d
	Sport Management ^c	150	153.00			c-d
	Recreation Education ^d	150	157.00			

p<0.005*

When Table 5 is examined; In the score of emotional communication skill according to the parts of the participants, between BES teacher training and recreation training, between coaching education and recreation training and between sport management and recreation training, between BES teacher training and coaching education and coaching education and recreation training in behavioral communication skill score, There was a statistically significant difference between recreation training, coaching education, recreation training and sport management training and recreation training (p <0.05). There was no statistically significant difference in mental communication skill score (p > 0.05).

Table7. Evaluation of Participants' Communication Skill Levels By Grade

Communication Skill	Grade	N	Median	X ²	P	U
Mental Communication Skill	1. Class ^a	136	52.00	10.090	.018*	a-c
	2. Class ^b	162	53.00			
	3. Class ^c	163	49.00			
	4. Class ^d	139	53.00			
Emotional Communication Skill	1. Class ^a	136	48.00	4.407	.221	-
	2. Class ^b	162	49.00			
	3. Class ^c	163	50.00			
	4. Class ^d	139	49.00			
Behavioral Communication Skill	1. Class ^a	136	52.00	5.433	.143	-
	2. Class ^b	162	54.00			
	3. Class ^c	163	53.00			
	4. Class ^d	139	54.00			
Communication Skill Total	1. Class ^a	136	152.00	6.866	.076	-
	2. Class ^b	162	157.00			
	3. Class ^c	163	156.00			
	4. Class ^d	139	157.00			

p<0.005

When Table 6 is examined, Statistically significant difference was found between the first and third grades in the mental communication skill score according to the participants' classes (p <0.05). It was found that there was no statistically significant difference in total scores of emotional communication, behavioral communication, and communication skills (p > 0.05).

Table8. Evaluation of Participants' Communcation Skill Levels By General Academic Average

Communcation Skill	GAA	N	Median	X ²	P	U
Mental Communication Skill	1.25-1.99	90	55.00	4.092	.129	-
	2.00-2.99	313	53.00			
	3.00-4.00	197	53.00			
Emotional Communication Skill	1.25-1.99	90	50.00	3.228	.199	-
	2.00-2.99	313	49.00			
	3.00-4.00	197	48.00			
Behavioral Communication Skill	1.25-1.99	90	52.00	.645	.724	-
	2.00-2.99	313	53.00			
	3.00-4.00	197	53.00			
Communication Skill Total	1.25-1.99	90	157.00	.929	.628	-
	2.00-2.99	313	155.00			
	3.00-4.00	197	155.00			

p<0.005

When Table 7 is examined, It was found that there was no statistically significant difference in total scores of mental communication skill, emotional communication skill, behavioral communication skill and communication skill according to the average academic grade points of the participants (p> 0.05).

DISCUSSION AND RESULT

The volunteers who participated in this study were found to have a communication skills score of 156.11 ± 16.84 . The highest score that can be taken from the communication skills scale is 225 and the lowest score is 45. Taking this into consideration, it is seen that the communication skill levels of volunteers participating in the study are moderate (Table 2). When the literature was examined, it was found that the communication skill total score was lower (Önay, N. (2014), Bilgen, H. (2014).

A statistically significant difference was found in the emotional communication skill score between the participants according to gender (p <0.05) (Table 2). There are also researches that show that communication skills do not differ according to sex (Özerbaş, Bulut, Usta, 2007; Özşaker, 2013; Çetinkaya, 2011; Erigüç, Şener and Eriş, 2013) as well as research findings consistent with our research findings in the field (Görmüş, Aydın, Ergin, 2013, Arslantaş, 1998, Çağlayan, 2007, Bingöl and Demir, 2011, Özşaker, 2013, Erözkan, 2005, Gülbahçe, 2010). On the other hand, in some studies conducted on different study groups other than university students, women's communication skills scores were found to be higher than men's scores (Korkut, 2005, Durukan and Maden, 2010, Nacar, 2010, Reed, McLeod and McAllister, 1999). This finding is not parallel to our study. This inconsistency in the findings of the relationship between communication skills and gender can be explained by the use of different inventories to measure communication skills and the inclusion of these inventories in different sub-dimensions. At the same time, the multidimensionality of communication skills and the large number of factors that can influence these skills (differences in the possibilities of developing communication skills, differences in gender roles and socialization levels, etc.) can be considered as another reason for this difference (Koç, Terzi, Gül 2015).

Statistically significant difference was found between the ages of 18-21 and 22-25 years in the emotional communication skill score of the participants according to their ages and it was found that this difference was caused by the group of 22-25 years (p <0.05) (Table 3). (1997), Bozkurt and others (2003), and Tepeköylü (2007) have found that the researches that reach the result of difference of communication skills according to age variable (Erigüç and Eriş (2013), Görür (2001) The difference in this study is that the students in the 22-25 age group are generally in the 3rd or 4th grade and they have to be more adaptive and accustomed to reading during the time they spend in school, They are more tolerant.

According to the findings of the study, there were significant differences in perceived communication skills perceptions among the participants who attended physical education teacher, coaching education, sports management and recreation education. (Table 4) (p < 0.05). When the literature was examined, Bingöl and Demir (2011) found that there were statistically significant differences according to departmental variable in university studies. This study is parallel to our findings. However, Tepeköy, Ö. (2007) found that there was no statistically significant difference in communication skills compared to departmental variables. It is thought that the difference in the present study is due to the fact that the course curriculum of the recreation department students is composed of lessons that are more social, fun and interpersonal communication.

Statistically significant differences were found between the 1st and 3rd classes in the mental communication skill score when comparing the participants according to their classes ($p < 0.05$) (Table 5). When the literature was examined, Pehlivan (2005) found that there was a significant difference in favor of the 4th grade between the 1st and 4th grade in the research conducted with the class teacher candidates. This study supports our work. However, Tepeköy, Ö. (2007) and Korkut (1997) found that there were no statistically significant differences in their studies with respect to class variables. The difference in the presented study is due to the increase in the time and education process, the adaptation to the school, It is thought to be due to the increase of communication skills due to the situations.

According to the findings of the research, it was determined that there was no statistically significant difference between the communication skills according to the average academic grade points of the participants ($p > 0.05$). No research has been found in the literature on this subject. This is due to the nature of BESYO, which has an examination system for sportive practice, and it can be interpreted that regardless of which average the students have, they can not perceive themselves very differently in interpersonal communication.

As a result; When the levels of communication skills of physical education and sports college students are examined; There is no statistical difference according to the average academic grade average; Statistically significant differences were found according to gender, age, department and class variables.

SUGGESTION

- In the universities, courses can be given to improve communication skills for students. It will also provide university students with opportunities to develop social relationships, to get close to each other and to participate in friends' environments.
- In order to increase the knowledge and experience, it is necessary to provide more practice centered on written expression, oral expression and effective communication courses.
- Further studies should be undertaken on the adequacy of students' communication skills and on the various variables affecting them.

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Kaizen and Intuition in Stress Management

Okan ŞENELDİR

Kocaeli University Kocaeli Vocational School Kocaeli Turkey
seneldir@gmail.com

Sinan AYDIN

Kocaeli University Kocaeli Vocational School Kocaeli Turkey
sinanaydin1704@yahoo.com

Mustafa KUDU

Erzincan University Science and Education Faculty Erzincan Turkey
mustafakd3@yahoo.com

İsmail KILIÇARSLAN

Kocaeli University Kocaeli Vocational School Kocaeli Turkey
isokaslan@hotmail.com

Mustafa OF

Kocaeli University Kocaeli Vocational School Kocaeli Turkey
mustafaof@gmail.com

Celal MUTLU

Kocaeli University Kocaeli Vocational School Kocaeli Turkey
c_zeno@hotmail.com

ABSTRACT

Kaizen is a Japanese word for 'continuous improvement'. “One small step can change your life” is the gentle but potent way to effect change. “A journey of a thousand miles must begin with a single step. If the steps are small, the stress mechanism is quiet and the brain develops new habits from the repetition of small steps. The term “kaizen”, also provides benefits in decision making. If someone has difficulty finding the purpose, the best Kaizen technique is asking a question each day, opening up the heart to hear the answer. Stress is an inevitable fact that's why there is stress management. Kaizen (small steps) and innovation (large steps) are both worthwhile strategies. Using big steps is fine but if the stress is too great or the motivation too little, Kaizen technique is necessary.

The term of “intuition” means an ability to understand or know something immediately based on the feelings rather than facts. Intuition means direct knowledge. Intuition has a metaphysical aspects. Intuitive decisions may be necessary against stress. Intuition is positively correlated with willpower and whereas it is also negatively correlated with stress. Intuition isn't always good. Sometimes intuition is insufficient to think about the situation. Therefore kaizen and intuition are complement techniques.

INTRODUCTION

Stress contains bad emotions. Hans Selye considered “Stress in health and disease is medically, sociologically, and philosophically the most meaningful subject for humanity that I can think of”. Selye's first definition of stress was “the non-specific neuroendocrine response of the body”. Later on he dropped “neuroendocrine” because he realized that in addition to the involvement of the neuroendocrine system, almost every other organ system (e.g. especially the cardiovascular, pulmonary, and renal systems) is affected in one or several stages of the stress response, i.e. in the alarm reaction, stage of resistance and/or stage of exhaustion (Szabo et al., 2012). Life Events are changing experiences that use energy and can cause stress. Life events can be joyous (marriage, birth of child, new job) or sad (death of loved one, loss of job). Readjustments are the body's physiological adaptations to life events. Stress can cause some diseases. Wellness is state of optimal health.

Many people say they constantly compare themselves to others and they tend to say they are unhappy. According to classic social comparison theory, people who make frequent social comparisons should be happy if they believe they are better off than the people to whom they compare themselves. Social comparison theory (Festinger, 1954) posits that individuals compare themselves to others when they need an external standard against which to judge their abilities or opinions. Unhappy people, not happy people, may be the ones who actually make spontaneous frequent social comparisons (Lyubomirsky & Ross, 1997; Lyubomirsky et al., 2001). In one study (Lyubomirsky & Ross, 1997), happy and sad people had the opportunity to compare themselves to a better or worse peer. Sad people felt worse when paired with a better performer, and better when paired with a worse performer. Happy people had less affective vulnerability to the available social comparison information; they simply did not pay as much attention to how well others were doing. Similarly, Giordano, Wood, and Michela (2000) found that unhappy people make more frequent social comparisons, and Swallow and Kuiper (1992) found that mildly depressed people made more frequent social comparisons. Gibbons and Buunk (1999) found the tendency to seek social comparison information is correlated with low self-esteem, depression and neuroticism. People make social comparisons when they need both to reduce uncertainty about their abilities, performance, and other socially defined attributes, and when they need to rely on an external standard against which to judge themselves. The implication is that people who are uncertain of their self-worth, who do not have clear, internal standards, will engage in frequent social comparisons. Although self-esteem has been found to correlate with positive aspects of well-being (Diener & Diener, 1995), there is some evidence that clarity of the self-concept, rather than high self-esteem per se, contributes to well-being (Campbell, 1990; Kernis, Paradise, Whitaker, Wheatman, & Goldman, 2000). Self-esteem may not be as good predictor of negative aspects of well-being as frequency of social comparisons. The consequences of social comparisons could act as reinforcement to teach the individual to make more, and more frequent, social comparisons, leading the individual to become dependent on social comparisons; in particular, on meeting external standards such as being better than others to renew a sense of well-being. People who tend to make spontaneous social comparisons, therefore, tend to be unhappy, more vulnerable to the affective consequences of such comparisons, and more likely to get caught in a cycle of constantly comparing themselves to others, being in a self-focused state, and consequently being unhappy. More social comparisons, rather than serving a useful, coping function, merely serve to reinforce the cycle tying social comparisons to diminishing well-being.

STRESS-RELATED SOME PHYSICAL PROBLEMS AND MINDFUL AWARENESS

It is an awareness to realize that stress leads to diseases. For example, high blood pressure, ulcers, colitis, heart disease, arthritis, skin diseases, allergies, headaches, neck and lower back pain, increase in infectious diseases. Mindfulness is “living in the moment.” Mindful awareness is the moment-by-moment process of actively and openly observing our mental, physical, and emotional experiences. These experiences must be “observed,” without a constant stream of internal comment or judgment. This moment-by-moment process of actively observing our experiences is a form of meditation that bears fruit: a sense of well-being, lower blood pressure, and a growing sense of peace and wellness in life. “Being aware of your breathing takes away from thinking and creates space. It is one way of generating consciousness.” Mindfulness is bringing alertness or awareness to every moment during the day. Mindfulness will make life in the office, and at home more fruitful, more productive, and happier (Esch, 2011).

TYPE OF OCCUPATION AND STRESS

Humans may experience various stresses throughout their lives and may be exposed to major or minor challenges inevitably. Stress develops as a consequence of some challenges and difficulties and a person's ability to cope with a challenge depends on some sources and their attitudes towards challenges. Stress sources and the situations perceived by a person are various. It may be a serious disease, a natural catastrophe like an earthquake, or an economic event like unemployment. Adaptation capacity develops as a consequence of mutual interaction between a person and the environment and, as a result, the person becomes more fragile or more flexible and compatible. The process of coping with various challenges and stress cognitively affects physiological responses. In adaptation to stress, the meaning of stress to the person and methods of coping are important. A person's occupation takes an important place in his/her life. An occupation is not only a means for making money, it is also an important factor in the structuring of personality, opinion on the situations and the reaction to the events. View of life, ideals, and some personality properties are determined by occupation (Özgüven, 2001). Among

working conditions, working in shifts may lead to negative psychosocial effects. Working conditions and the risk of increasing natural stress depend on the various properties of each occupation. Low security is a factor increasing stress. Fear of making a mistake also increases stress. Overtime and the need for extra security result in cognitive exhaustion. The ambiguity of the limits of the duty and not being able to come to the desired position in the occupation also increase the level of anxiety. Excessive competition and the greed to make money that we see especially in self employment will lead to occupational stress. Retiring and leaving the work environment suddenly also lead to negative psychosocial effects, just as the work environment (Nevzat, 2002).

INTUITION

Intuition is often defined as the recognition of something without rational processes involved. Alternatively, it could be described as the subconscious sensation of reality. Intuition is not necessarily a step-by-step information processing state that builds on both intellectual and emotional elements and in fact leads to a concrete understanding without deliberate reasoning. In practice, intuition appears as the subconscious of decision-making, the basis of which is experience and accumulated judgment. Intuition is not the accidental product of imagination as it had been thought before. It has been proved, however, that intuitive processes build upon experience and knowledge built in the long-run and consist of a considerable number of facts, patterns, theories, abstraction and all sorts of things that could in short be labeled as the totality of presumptions. Importantly, a connected advantage is that intuition is capable of condensing experience and knowledge into seconds.

Computer systems are churning out so much information and data that, even to sift out the relevant information, use of intuition becomes essential (Hayashi 2001). With the media and internet contracting the globe into one well-knit communication network, the flow of relevant and irrelevant information has grown uncontrollably. It is particularly challenging for individual managers as this easily leads to the common pitfalls of losing sight of the ‘big picture’, priorities changing too quickly, and weakening of interpersonal relations. Intuitive ability may be an important skill which will keep managers abreast with the knowledge revolution. An analysis of managers’ effectiveness, indicates that full information is not a sufficient condition for making the right decisions. An inverse relationship can be observed here: the greater the wealth of information that managers have, the more reduced their effectiveness and ability to make optimal decisions. This is due to the weakening and suppressing of their intuitive potential, which is often replaced by analytical work of little value. Many decision-makers do not appreciate the role of premonition, experience or anticipation skills in doing business, while these are inextricably linked to the use of intuition by managers. It is worth pointing out that the use of intuition is of particular importance, especially at the strategic level, when decision-makers are forced to solve individual, complex, and unstructured problems (Clarke, Mackaness, 2001). The power of intuition has been long discussed, and used, by the world’s great philosophers, artists and teachers: “The power of intuitive understanding will protect you from harm until the end of your days.”, Lao Tzu. “The only real, valuable thing is intuition.”, Albert Einstein. “The intuitive mind is a sacred gift and the rational mind is a faithful servant. We have created a society that honors the servant and has forgotten the gift.”, Albert Einstein.

The main functions that intuition fulfils in this process are the following (Malewska & Sajdak, 2014):

- Creative (generating a significant number of unconventional solutions),
- Integrative (allows for a smooth transition between the various stages of the decision-making process),
- Informative (allows the filling of the gap in an absence of information or the analysis of large amounts of information under conditions of information noise).

Intuition enhances analytic thinking and focuses on the present situation, providing insights as to timing, specific strategy and innovation (Khandelwal, 2010, p.151). The concept was derived from the medieval Latin word “intuitio”, which means “whisper” or “premonition”. The synonyms of “intuition” are words and phrases such as creative imagination, premonition, anticipation, instinctive knowledge, a sixth sense, and a sudden insight. It is a

psychological concept meaning an immediate act of understanding or perception of a fact, existence, or the relationship between two phenomena or results. Therefore, it can be considered that intuition is a way of acquiring knowledge and it represents the thought process which results in the quick adjustment of a given situation, problem or phenomenon to previously known templates, patterns or relationships. It takes the form of a sudden flash of inspiration resulting in finding a solution to a problem or an answer to a question.

KAIZEN STRATEGY

Decision making is necessary to solve a problem. Kaizen concept is related to problems. A problem has basic specialties: Indecision situation, at least two solutions way, emotions which is disturbed physical or/and mental. It can be said that, the life is a problem solving process, also it is a kaizen process. Kaizen is not a new philosophy, the origins are in the midtwentieth century with Masaaki Imai and his book entitled “Kaizen: The Key to Japanese Competitive Advantage” which refers to the term kaizen having possible origin in Toyota Motor. After implementing a continuous improvement system, such as kaizen, there are several benefits gained, which are reflected in social, operational and technical aspect for the company, as well as for customer and partners (Garcia et al, 2014). Kaizen is a continuous improvement approach. Kaizen (small steps) and Innovation (large steps) are both worthwhile strategies. The question is, are you free to choose whichever is more useful at the moment. Using big steps is fine and if the fear is too great, or the motivation too little, fall back on Kaizen. It is the freedom to choose that is the goal. For many people, big steps are the one and only strategy. Kaizen approach can be practised even in personal life. Kaizen is a solution against fears, as following (Maurer, 2004):

- Big target → Fear → Access to the brain membrane is blocked (brain is disabled) → Failure
- Small target → Fear is overcome → Cortex is involved (brain is active) → Success

A problem is the present solution of the situation. The Plan-Do-Check-Act (PDCA) Cycle provides a simple but effective approach for problem solving and managing change, It is particularly effective for: Helping implement kaizen or continuous improvement approaches, when the cycle is repeated again and again as new areas for improvement are sought and solved.

Kaizen is a method and philosophy that is rooted in the foundation of incremental continuous improvement. It was originally implemented in post war Japan businesses to help improve productivity and worker morale and has since expanded into the realm of personal growth. Like Morita Therapy, Kaizen does not directly strive to reduce symptoms but looks first to create purposeful action through small steps. Instead of beginning a diet to lose 50 pounds and creating a disciplined routine to accomplish that goal, Kaizen would simply begin an action-oriented process of incremental change—walk in place for 45 seconds a day. The key is the repetition of an action -- not the big brass ring of losing 50 lbs. By keeping it small, the system—be it the workers in a manufacturing plant or an individual—naturally exhibits less resistance (fear of change) and is thus more open to improvement. If one has difficulty finding one’s purpose, the best Kaizen technique is asking a question each day, opening up the heart to hear the answer. The possible questions include: What is the emotion I want to experience as I go through my day? What matters most to me in life? What am I here to be and to do? By asking the question each day, with calm curiosity, then answers will begin to appear. The repetition of the question is the key. Exercising one minute a day every day builds a habit. Increasing one minute a week and soon you have a habit.

CONCLUSION

Fear is the basic emotion of the brain. In the presence of fear we feel nothing else, in the absence of fear, everything else. It is a natural response when faced with challenges. The brain responds to big challenges by triggering the amygdala, the fear center in the brain. If the challenge is perceived as too great, if the person stumbles, the fear becomes crippling and the person gives up, often with despair or self criticism. If the steps are small, the fear mechanism is quiet and the brain develops new habits from the repetition of small steps.

Intuitive thinking is the need of the hour for managing in the new world order. It acts as a bridge between conscious and un-conscious decision making processes and plays a vital role in everyday decision making. Intuition and judgment are simply analyses frozen into habit and into the capacity for rapid response through recognition. Every manager needs to be able to analyze problems systematically. Every manager needs also to be

able to respond to situations rapidly, a skill that requires the cultivation of intuition and judgment over many years of experience and training. The effective manager does not have the luxury of choosing between "analytic" and "intuitive" approaches to problems. Behaving like a manager means having command of the whole range of management skills and applying them as they become appropriate. It is evident that neither rationality nor intuition alone guarantee success. While the present day developments in the world economy make the coming of a new renaissance of rationality more probable, the power of intuition in the decision-making process of the businessperson must never be forgotten.

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Knowledge and Skills Transfer for Sustainable Rural Tourism in the Baltic Sea Countries

Gunta GRINBERGA-ZALITE

*Faculty of Economics and Social Development
Latvia University of Agriculture, Latvia
gunta.grinberga@llu.lv*

Zane VITOLINA

*Faculty of Economics and Social Development
Latvia University of Agriculture, Latvia*

Baiba RIVZA

*Faculty of Economics and Social Development
Latvia University of Agriculture, Latvia*

ABSTRACT

Due to increasing global competition, tourist visits to the Baltic Sea countries from neighbouring European countries are declining, therefore sustainable and well educated clusters with skills, knowledge and understanding how to enter new challenging markets such as Japan are required. Although Japanese tourist market is attractive, specific knowledge and joint strategy to increase Japanese tourist visits are necessary. Rural tourism has a huge potential owing to natural and heritage culture potential, which could be an absolutely new and exciting experience for Japanese tourists. However, most rural tourism companies are small and lack specific knowledge and market intelligence how to deal with cultural differences. In 2016, a new ambitious INTERREG Central Baltic project CAITO “Meta cluster for attracting Japanese tourism market” was started with active participation of three countries of the Baltic Sea region. The overall objective of this project is to promote and support rural tourism companies to enter Japanese tourism market by strengthening their capacity and cooperation in the three Baltic Sea countries (Latvia, Estonia, and Finland). The aim of the current research is to present the data obtained in the initial phase of the project on the specifics and latest trends regarding Japanese traveller attraction to the Baltic Sea countries in particular focusing on Latvia. The specific research tasks are: 1) to characterize Japanese tourists’ interest areas in the Baltic Sea region countries; 2) to analyse the experience of Latvian rural tourism companies in dealing with Japanese tourists; 3) to develop proposals for knowledge and skills transfer to improve rural tourism products and their marketing communication according to Japanese travellers’ expectations. The research employed monographic, statistical analysis, descriptive and sociological research (questionnaire) methods.

INTRODUCTION

A tourism region is a geographical region that has been designated by a governmental organization or tourism bureau as having common cultural or environmental characteristics. These regions are often named after a geographical, former, or current administrative region or may have a name created for tourism purposes. The names often evoke certain positive qualities of the area and suggest a coherent tourism experience to visitors. Countries, states, provinces, and other administrative regions are often carved up into tourism regions to facilitate attracting visitors (Tourism Region, 2017).

Depending on the context, the Baltic region might stand for different various groups of countries:

- the countries that have shorelines along the Baltic Sea: Denmark, Estonia, Latvia, Finland, Germany, Lithuania, Poland, Russia, and Sweden;
- the group of countries presently referred to by the shorthand Baltic states: Estonia, Latvia, and Lithuania;
- Estonia, Latvia, Lithuania and Kaliningrad Oblast of Russia, exclave from the remainder of Russia;
- historic East Prussia and the historical lands of Livonia, Courland and Estonia (Swedish Estonia and Russian Estonia);
- the former Baltic governorates of Imperial Russia: Today's Estonia and Latvia (excluding parts of modern Eastern Latvia that were part of Vitebsk Governorate);
- the countries on the historical British trade route through the Baltic Sea, i.e. including the Scandinavian Peninsula (Sweden and Norway);
- the Council of the Baltic Sea States, comprised by the countries with shorelines along the Baltic Sea, in addition to Norway, Iceland and the rest of European Union;
- the islands of the Euroregion B7 Baltic Islands Network, which includes the islands and archipelagos Åland (autonomous), Bornholm (Denmark), Gotland (Sweden), Hiiumaa (Estonia), Öland (Sweden), Rügen (Germany), and Saaremaa (Estonia) (The Baltic Sea Region..., 2002).

Today, the tourism industry in the Baltic Sea region contributes significantly to the economies of the countries in the region. With about 73 million international arrivals in the region – equivalent to 7 per cent of all international

arrivals – the tourism industry generates growth, wealth and jobs to more than 1.4 million people (Tourism in the Baltic..., s.a.). However, the tourism industry in the Baltic Sea region, especially rural tourism that complies with sustainable development principles need a stronger voice at both regional and European level addressing the opportunities and challenges of the industry. Politicians often underestimate the importance and impact of tourism on the economy. Raising awareness of rural tourism industry would increase the possibilities for elimination of regional disparities and generation of jobs in rural areas, which is particularly serious problem in Latvia and Estonia.

The Baltic Sea Action Plan (BSAP) is an ambitious programme to restore the good ecological status of the Baltic marine environment by 2021. The future vision of the Baltic Sea countries is focused on healthy Baltic Sea environment, with diverse biological components functioning in balance, resulting in good environmental/ecological status and supporting a wide range of sustainable human economic and social activities. The Plan, adopted by all the coastal states and the EU in 2007, provides a concrete basis for The Baltic Marine Environment Protection Commission (HELCOM) work. It incorporates the latest scientific knowledge and innovative management approaches into strategic policy implementation, and stimulates goal-oriented multilateral cooperation around the Baltic Sea region. A highlight of the elaboration of the HELCOM Baltic Sea Action Plan has been the active participation of all major stakeholder groups in the region. Such participation ensures that the plan is truly relevant and can be effectively implemented in practice. The choices that we make reflect the choices of society as a whole. For this reason, the common vision of the healthy Baltic Sea has been defined together with all participating stakeholders – from governments, through industry and NGOs, right down to individual citizens, including older and younger generations, and organisations in both the private and the public sectors. Today, many stakeholders are engaged in implementation of the Action Plan, and the approaches and principles of the BSAP have for instance been utilized when developing the EU Strategy for the Baltic Sea Region (Interreg Baltic Sea..., 2014).

In 2016, a new ambitious INTERREG Central Baltic project CAITO “Meta cluster for attracting Japanese tourism market” was started with active participation of three countries of the Baltic Sea region. The overall objective of this project is to promote and support rural tourism companies to enter Japanese tourism market by strengthening their capacity and cooperation in the three Baltic Sea countries (Latvia, Estonia, and Finland). The project was funded by the Interreg Central Baltic programme and involves 7 partners from Finland, Estonia and Latvia, the lead partner being the Estonian University of Life Sciences.

The *aim* of the current research is to present the data obtained in the initial phase of the project on the specifics and latest trends regarding Japanese traveller attraction to the Baltic Sea countries in particular focusing on Latvia. The specific *research tasks* are: 1) to characterize Japanese tourists’ interest areas in the Baltic Sea region countries; 2) to analyse the experience of Latvian rural tourism companies in dealing with Japanese tourists; 3) to develop proposals for future improvement of rural tourism products and their marketing communication according to Japanese travellers’ expectations. The research employed monographic, statistical analysis, descriptive and sociological research (questionnaire) methods.

INCREASING INTEREST OF JAPANESE TOURISTS IN THE BALTIC SEA COUNTRIES AND THE SPECIFICS OF JAPANESE TRAVELLERS

Lately, Japanese tourists’ activity in travelling around the Baltic Sea region countries, including Latvia, Estonia and Finland, is increasing. Compared to Central Europe and Western Europe, the Baltic Sea region is comparatively safer and stands out with diverse tourism opportunities. Safety, including low natural disaster risk, alongside with beautiful unspoiled nature landscapes, rich cultural heritage and high quality accommodation services and direct flights are highly important factors for Japanese tourists while taking decision of tourism destinations. In 2015, Latvia was visited by 21 575 tourists from Japan, which is 39% more compared with 2014 (Tourism Statistics, 2016). Estonia has attracted more Japanese tourists 2015 – 96 044 (21% increase compared with 2014) (Statistics Estonia, 2017). This could be explained by Estonia’s geographic location and available infrastructure – Estonia is closer to Finland, which is the main tourism destination in the Baltic Sea region. Direct flights from the largest Japanese cities are organized only to Helsinki and are provided by Finnair. Thus, Finland is the country that can be proud of comparatively large number of Japanese tourists – 5% of the total number of tourists (454 000 tourists in 2015). In Latvia and Estonia, Japanese tourists constitute a comparatively small proportion of all inbound tourists (1.5-2%). Due to long distances and high costs, 67% of Japanese tourists usually plan to visit more than just one country. Typical travel route for a Japanese tourist in the Baltic Sea Region starts in Helsinki and can take two possible directions – to the south (Estonia, Latvia and Lithuania) or to the north (Sweden and Norway). Japanese travellers are mainly interested in the culture of the Baltic countries, experience sauna or bath-house or SPA treatments as well as visit islands with their unique flora and sauna. Moreover, Japanese tourists are interested in rural tourism – they want to enjoy good rest, walking and nature observing. During the last years, the tourists’ wish to participate in different workshops is increasing, e.g. making themselves some crafts or cooking culinary delights. The tenth of the Japanese tourists with pleasure participate in such traditional activities

in the Baltics as mushroom picking, collecting of seasonal berries and distilling birch tree juice. Tourists from Japan usually belong to 60+ age group and travel together with family or tourist group; individual way of travelling is not typical for Japanese tourists. Language barrier is an aspect that most of all upsets tourists, thus travel is usually arranged in groups with the guide that speaks Japanese language. Most often travels are organized in summer months or beginning of autumn (August and September). The total length of the travel most often is 11-14 days with spending 1-2 days in each country (Suvanto et. al, 2017).

LATVIAN RURAL TOURISM COMPANIES' EXPERIENCE WITH JAPANESE TOURISTS

In autumn 2016, Latvian Country Association "Lauku celotajs" conducted in-depth survey with 35 Latvian rural entrepreneurs who had received Japanese tourists. The survey results revealed that the tourism brochures and maps that are usually available in English, German and Russian languages and are widely used by other European tourists are not so popular and reliable information sources among Japanese tourists. Also tourism agencies and direct reservation systems most probably due to language barrier do not serve as a meaningful source of information. This means that webpages, Facebook pages and online reservation systems of rural enterprises should be informative, fresh and in many languages. Language is often a problem for Japanese tourists (Konu, 2015). The majority of respondents claimed that they had received information about the particular rural tourism enterprise in other source of information, which most probably has been in Japanese language and distributed by larger tourism information centres outside Latvia.

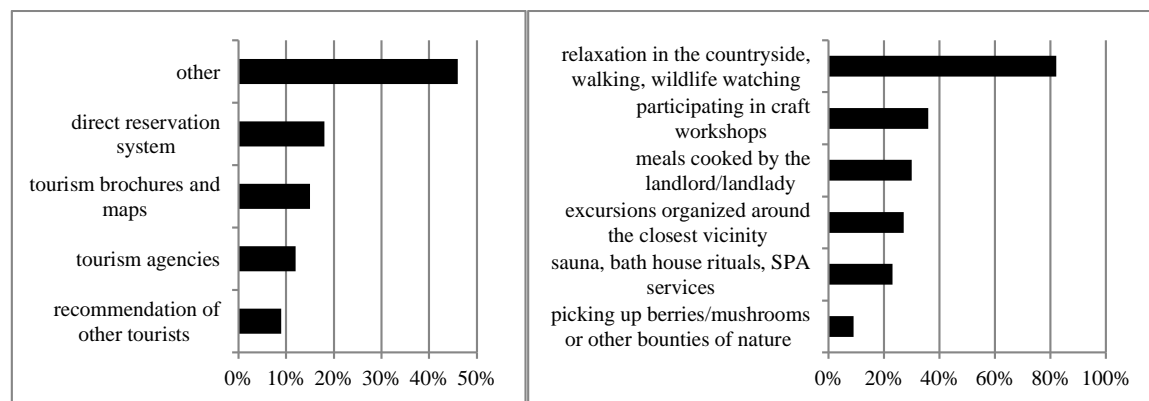


Fig. 1. (a) Japanese tourists' information sources about rural tourism enterprises in Latvia, %; (b) Most popular activities of Japanese tourists during rural tourism visits in Latvia, %

Source: authors' design based on Latvian Country Association "Lauku celotajs" data, 2016

The most popular activities in which Japanese tourists have participated include relaxation in the countryside, walking, wildlife watching, in which more than 80% of travellers participated. This gives evidence that rural tourism, which is an environmentally friendly form of tourism, is attractive for Japanese tourists who highly appreciate opportunity to enjoy harmony with nature. It is generally known that Japanese mind is flexible and absorbent, which is characteristic of Japanese culture. Japanese like to borrow some ideas from other cultures, transforming and adapting them for Japanese needs, without losing their cultural heritage. Since Sinti are very responsive, they are trying to establish harmony in all aspects of their life (Ceple-Alkadi, 2010). In addition to nature tourism, the second interesting part of the rural market is wellbeing tourism. This is a new opportunity for rural enterprises. It is an increasing trend, especially among the modern humanists, who avoid materialism, especially women (Konu, 2015). Rural wellbeing, according to Hjalager (Hjalager et. a, 2015), includes holistic wellbeing, unselfishness and responsibility, integration with local nature and its' resources, balance between work and leisure time, rural tourism as a medicine for physical and mental health, versatile wellness, climate change, escape from digital life, simplicity, local products and by-products.

NECESSITY AND SCOPE FOR KNOWLEDGE AND SKILLS TRANSFER FOR ENHANCING SUSTAINABLE RURAL TOURISM

Toady meaningful and target oriented sustainable tourism training programmes are necessary both to educate and create awareness among stakeholders: rural entrepreneurs and their staff, local communities, local municipalities and policy makers on how to implement sustainable tourism strategies and the importance of such development. Thus, the authors of the paper want to emphasize that the main focus in the above mentioned professional knowledge and skills transfer should not be put solely and directly on those rural entrepreneurs who would further deal with Japanese tourists segment. It is important that up-to-date knowledge and skills transfer in the form of

compact and target oriented training programmes should involve much wider public at all levels, especially during the initial period of intensive promotion of Latvian, Estonian and Finnish rural tourism products.

According to Vukovic, Subic and Cvijanovic training and education for rural tourism developers should be carried out at several levels.

1. *Training for trainers* – training is necessary for individuals involved in leadership positions at local level (i.e. administration, product development, marketing). With the appropriate knowledge and skills, these individuals in turn are well positioned to train other individuals at an operational level. In order to ensure professional and high quality training, the appropriate methodology for rural tourism training material, including web-based materials, are highly important. Moreover, these materials should be professionally prepared (translated, illustrated) so that they could be easily used in all the three countries – Latvia, Estonia and Finland.

2. *Training for rural tourism providers* – rural tourism product providers, or operators, require training and education in a range of subjects:

- customer care;
- language skills;
- product standards;
- understanding of partners' needs;
- product knowledge;
- basic marketing;
- e-commerce and digital marketing.

Moreover, each of the three countries could have some differences, e.g. in digital marketing specifics, which should be taken into account.

3. *Training for officials* – many officials working at government or municipality level are unaware of the potential benefits of tourism. Training and educational programmes are also necessary for this target group. Hereby, the authors consider that in Latvia, the representatives of the Ministry of Economics, Ministry of Environmental Protection and Regional Development and Ministry of Agriculture should also be regularly informed and involved in project activities, e.g. invited to disseminate the information of project activities and participation in informative seminars.

Baum (1995) and Vukovic, Arsic, Cvijanovic (2010) in their research on the role of knowledge in tourism have emphasized the importance of the following competencies that in authors' opinion need to specially be addressed by the all level tourism managers in the Baltic Sea region countries to attract the new and promising Japanese tourists segment:

- to manage with a problems of guests (tourists), with care and sensitivity;
- to be able to communicate with them in written and oral form;
- to achieve a positive working atmosphere among the staff while accepting Japanese guests;
- to obtain professionalization in every aspect of Japanese tourist business;
- to achieve the positive attitude of Japanese consumers as well as positive relationships with them.

In scope of INTERREG Central Baltic project CAITO "Meta cluster for attracting Japanese tourism market" all these aspects need to be included in a special hand-book devoted to specifics of Japanese tourism market with recommendations for improvement of sustainable tourism products for the rural entrepreneurs in Latvia, Estonia and Finland.

CONCLUSIONS AND IMPLICATIONS FOR FURTHER ACTIVITIES

The preliminary research results give evidence that tourism enterprises that are targeting Japanese tourists in the Baltic Sea region have to revise their current marketing communication channels and using of same forms of communication as with other foreign tourists and relying on the experience of tourism agencies. Moreover, the quality, cleanness and availability of clearly understandable traffic signs and organization of public transport have to be revised as Japanese tourists might be discouraged due to language barriers.

The data obtained in Latvia, Estonia and Finland during the initial phase of the INTERREG Central Baltic project CAITO "Meta cluster for attracting Japanese tourism market" show that enhancing of cooperation among Finnish, Estonian and Latvian rural tourism agencies is of high importance in the interests of all the three Baltic Sea region countries both in terms of financial investments in rural tourism industry development and in information exchange. Currently, Finland and Estonia already have started a joint approach to promotion of their rural tourism services. Enhancing of cooperation with Latvian Country Association and network of rural enterprises could enable Japanese tourists to enjoy even safer, more meaningful and diverse travel experience in the Baltics.

The next objectives of the CAITO project should be focused on conducting specially tailored training courses for rural tourism companies to better meet the needs of Japanese tourists. For this reason, firstly, it is necessary to

organize a special training for trainers, and, secondly, to elaborate a special hand-book devoted to specifics of Japanese tourism market and recommendations for improvement of sustainable tourism products should be elaborated for Latvian, Estonian and Finnish users: local development agencies and policy makers, tourism associations and service companies in rural areas; continuous training professionals (teachers and directives) and people in charge of development policies in local and regional tourism.

Moreover, it would be advisable that each rural tourism industry organization and each individual enterprise would popularize Latvia, Estonia and Finland as a joint destination, since the success of the relatively smaller and comparatively with other European regions less attractive Baltic Sea region lies in synergy of its countries' tourism potential and provides a sustainable win-win solution in the conditions of global tourism competition.

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Knowledge Management Model to Develop Creative Thinking for Higher Education With Project Based Learning

Kwanjai DEEJRING

*Department of Computer Education,
Faculty of Science and Technology,
Nakhonratchasima Rajabhat University,
Thailand
deejring@hotmail.com*

ABSTRACT

Three purposes of this research are 1) to design and develop knowledge management model to develop creative thinking for higher education with project base learning 2) to compare creative thinking between students studying in the traditional way and students studying by using the model and 3) to study the correlation between compare learning achievement and creative thinking. The results are revealed as follows. Firstly, the model consists of 5 components that are Thinking Project, Resource, Seeking tools, Knowledge Sharing, and Knowledge Testing which are designed based on academic theories. Secondly, in the experiment at Nakhon Ratchasima Rajabhat University, the average scores of learning achievement and creative thinking derived from students studying by using the model are higher than the average scores derived from students studying in the conventional way and higher than 70% in a good level. Moreover, the result shows that there is a positive correlation between creative thinking and learning achievement. Thirdly, the results derived from the experiments at Wongchavaritkul University and Nakhon Ratchasiam Rajabhat University are correspondent. This confirms the integrity of the model.

Key words: Creative thinking, higher education, project based learning

INTRODUCTION

Educational institutions need a system of management by using Knowledge Management : KM as a tool to accomplish 4 sides that are 1) working, 2) learners developing, organization developing as organization of learning and 4) community groups. This system has 3 processes that are 1) Knowledge Acquisition, 2) Knowledge Sharing and 3) Knowledge Utilization (Butcher, G., Crispen, P., Espinal, D., & Griffin, C., 2001). Thus Knowledge management will be achieved effectively, it requires both people and technology (Orr, E. & M. dan Persson, 2003). To prepare people to step into the knowledge-based society, people must have creative thinking and thinking skills to apply knowledge to benefit. One theories that can develop these human features are KM and constructivism supporting the students in knowledge construction rather than the transmission of knowledge (Spiro, R., Feltovich, P., Jacobson, Michael J., & Coulson, Richard L., 1995) (Amornsinlaphachai, P., 2015) (Deejring, K., 2015). In addition, the design of learning to help foster creativity needs media attribution and media symbol system that assist learners to understand the conceptual model of knowledge domain. Universities in Thailand need to adapt in order to step into the knowledge-based society by building thinking skills and creativity to enable the students to have an approach to resolve the problems faced by many different situations. Learning that provides essential skills for living in society and concentrates on the learners, complies with project- based learning : PBL (John Larmer & John R. Mergendoller, 2010). The PBL is a learning activity that allows students to study and take action on their own according to their aptitude and interest by the scientific process or other processes that can be used to answer problems while teachers will provide suggestion closely. This learning process help students to build creative thinking.

As the reasons above, Researchers realized the importance and the need to design and develop a model of knowledge management to develop creative thinking for higher education with project base learning based on several educational theories such as constructivism (Vygotsky, L. S., 1962), knowledge management (Alavi, M., 1997), creative thinking (Guilford, J.P., 1950), project-based learning , CLE (Jonassen, D. H., 1999), Bloom taxonomy (Bloom, B. A., 1956), Mental model (Frederiksen, J., White, B., et al., 1999), Media Symbol System (Salomon, G., 1979) and other related researches which can be applied into practice in order to develop ways of learning.

THE PURPOSES OF RESEARCH

Three main purposes of this research are as follows.

1. To design and develop knowledge management model to develop creative thinking for higher education with project base learning
2. To compare creative thinking between students studying in the traditional way and students studying by using the model
3. To study the correlation between learning achievement and creative thinking.

METHODOLOGY

Target group

The target groups used in the research are as follows:

1. The first group of 30 second year students in computer education field at Nakhon Ratchasima Rajabhat University studying the knowledge management model.
2. The second group of 30 second year students in computer education field at Nakhon Ratchasima Rajabhat University studying in the typical way.
3. The 19 third year students studying in education technology and computer education field at Wongchavaritkul University used to insist the integrity of the model.

SCOPE of content

The content used in this research is a part of educational system analysis and design subject at Nakhonratchasima Rajabhat University, Thailand. The content of this subject corresponds to educational system analysis and design subject at Wongchavaritkul University, Thailand.

RESEARCH INSTRUMENTS

The instruments used in the study and data collection include the followings:

1. The Knowledge management model to develop creative thinking for higher education with project base learning.
2. The assessment forms to confirm quality and usability of the model.
3. The learning achievement tests for typical learning and learning with the model.
4. The creative thinking tests for typical learning and learning with the model.

Data collection and analysis

In the research, we develop the knowledge management model to develop creative thinking for higher education with project base learning is developed and then compare creative thinking between students studying in the traditional way and students studying by using the model and study the correlation between compare learning achievement and creative thinking. The data are collected and analyzed by the researcher as the following details.

1. The knowledge management model is evaluated by the experts. Three facets of assessment are (1) learning content, (2) design based on theories and principles and (3) media and technology. The result is analyzed by summarizing interpretation.
2. The learning achievement and creative thinking score are collected and analyzed by using mean (\bar{x}) and percentage (%).
3. The correlation between compare learning achievement and creative thinking is analyzed by using Correlation coefficient of Pearson.

RESULTS

The research results can be summarized as follows:

1. The results from developing the knowledge management model

The knowledge management model designed in this research consists of 5 components that are Thinking Project, Resource, Seeking tools, Knowledge Sharing, and Knowledge Testing as shown in the designing framework in Figure 1. An example of developing the model is shown in Figure 2.

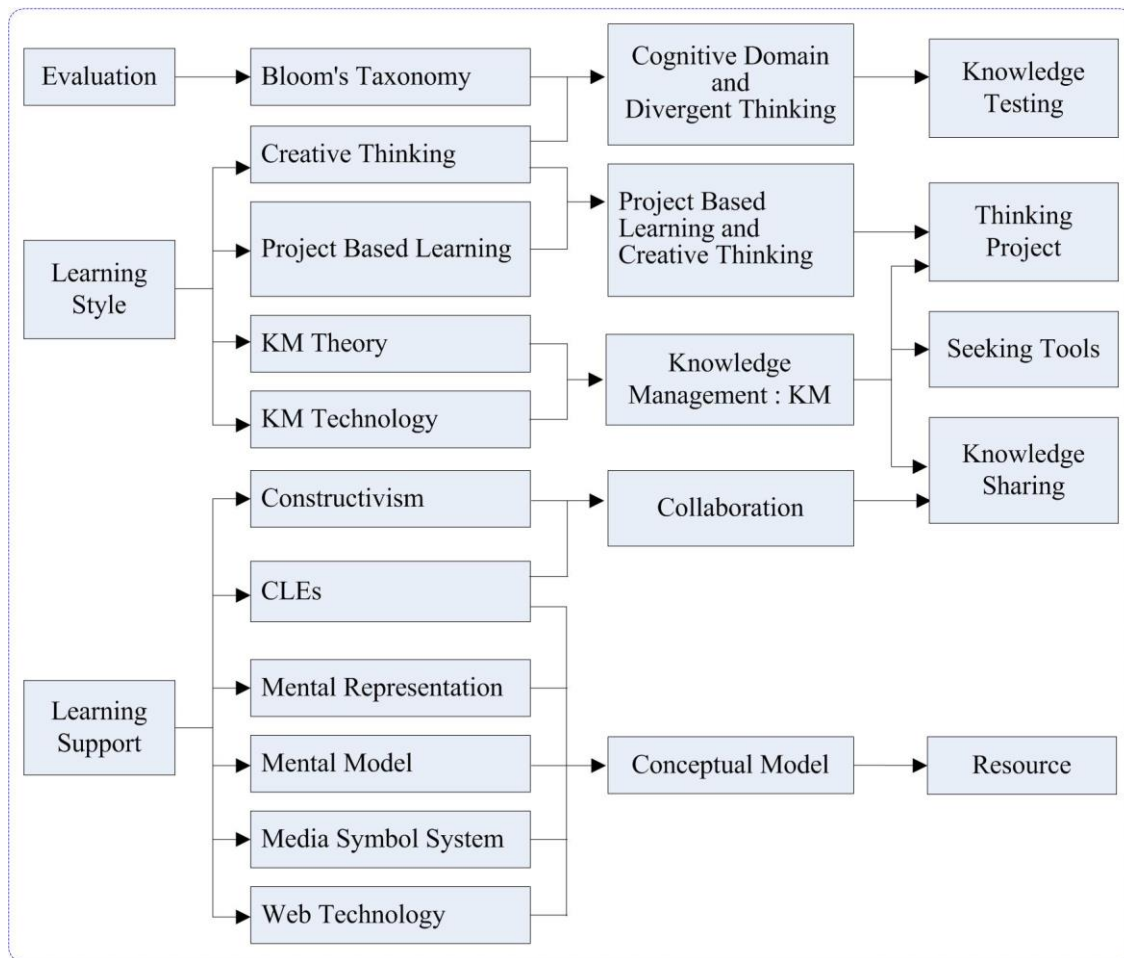


Figure 1. The framework of a design of the knowledge management model

The results derived from four experts to evaluate content, media and design are as follows.

The content of the model is accurate, right up to date timely. Design and media can encourage students to construct knowledge and enhance learners' creative thinking by using project base learning. This is because the model has been designed based on a theoretical basis. This theory leads to the practice.

2. The results from comparing creative thinking

The percentage of score for creative thinking derived from learning with the model is 71.13% while the percentage of score derived from traditional learning is 62.20%. Thus the average score of creative thinking derived from studying with the model is higher than the average score derived from typical studying. In addition, percentage of score for creative thinking derived from learning with the model is higher than 70% in a good level.

3. The results from studying correlation between achievement and creative thinking

The correlation between creative thinking and learning achievement is experimented at Nakhon Ratchasima University and Wongchavartikul University. The results derived from the experiments at both University show that there is a positive correlation between creative thinking and learning achievement. This insists the reliability of the model.



Figure 2. An example of developing the knowledge management model

CONCLUSIONS

In the research, the knowledge management model is design and developed. The framework design of the model comprises of 5 elements that are Thinking Project, Resource, Seeking tools, Knowledge Sharing, and Knowledge Testing. The experts reveal that the content of the model is accurate and modern; furthermore the design and media are designed based no educational theories that help students to enhance their creative thinking. The results from the experiments at Nakhon Ratchasiam Rajabhat University and Wongchavaritkul University are exposed as follows. The average scores of creative thinking derived from students studying with the model is higher than the average scores derived from students studying in the typical way. There is a positive correlation between creative thinking and learning achievement. This means the average scores of learning achievement derived from students studying with the model is higher than the average scores derived from students studying in the traditional way. The experimental results derived from Nakhon Ratchasiam Rajabhat University and Wongchavaritkul University are correspondent. Thus this can show the generalization of the model.

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Korean High School Student's Perception of Trust in Teachers

Ryumi Choi

*Pusan National University, Republic Of Korea
Crm0718@Naver.Com*

Daehyun Kim

*Pusan National University, Republic Of Korea
Dnkim@Pusan.Ac.Kr*

ABSTRACT

This paper is a report on clarify the grounds of trust in high school students and what factors influence them. To study these research questions, we interviewed 19 high school students. After gathering the interview data, this study attempted to adapt content analysis. As a result, three factors were categorized as 'student factor', 'teacher factor' and 'situation factor'. The characteristics of high school students' trust in their teachers revealed through research are as follows. First, when students(trustor) trust their teachers(trustee), it can be seen that a student's expectation on teacher role or advance information about their teacher influences rather than the teacher's behavior and attitude. Second, high school students refer to teachers' apparent behaviors and attitudes that are consistent with their expectations, but they also take teacher's effort behind the scene into account. Lastly, student' trust in teachers is influenced by the context and circumstance around them.

Keyword: trust, trust in school, student's trust in teacher, qualitative research, content analysis

INTRODUCTION

In a society where many people interact with each other, trust in others is compared to air. Like air, the very existence of trust in other people cannot be recognized until it is in deficiency(Baier, 1994). Without trust, people will consume considerable energy to protect themselves(Tschannen-Moran, 2014).

According to 2014 report on the time use survey, Korean high school students spend 8 hours and 21 minutes in learning at school. As students and teachers spend considerable amount of time together in school, trust between them would play a crucial role in building and maintaining healthy educational relationship. However, it cannot solely explain the meaning, cause and characteristics of trust between teachers and students, which thus leads to the necessity of examining the perception of students on their trust in teachers. The followings are prior studies focusing on student's trust and distrust in teachers: Lee, Sook-Jeong & Han, Jeong-Shin(2004) explained it as 'student's attitude to build and maintain an undoubtedly positive relationship with teachers based on teacher's cognitive, emotional and moral characteristics'. Furthermore, Ryu Yun-Seok(2016) described that 'members of a class community firmly trust teacher's intention, motivation and behaviors and rely on teachers'. The following are some factors that build students' trust in teachers. Lee(2006) found that the elements of trust were competence, openness, reliability, intimacy, caring and integrity. Another study by Lee, Hye-Sook(2010) analyzed constructs inducing trust factor and distrust factor in teacher from students. She drew trust factors: students were found to consider a sense of closeness, abilities, sincerity, consideration, consistency, a sense of community, belief, and openness as factors of trust in teachers. And students considered insufficient abilities, selfish and authoritarian behavior, lack of sincerity, inconsiderate behavior, lack of belief, ineffective communication, discrimination, and physical punishment as factors of distrust in teachers. Although precedent studies clarified various theoretical and empirical factors that build student's trust in teachers, they mainly focused on the attitude and behavioral characteristics of teachers who are the trustees.

On the other hand, the sociocultural environments in schools play as much important roles in promoting the trust relationships. Lee(2006b) analyzed that senior high students showed relatively higher level of trust in teachers than junior high and the bigger the size of a school or class was, the lower the level of trust became. And the level of trust was higher when they reached the end of the semester rather than the beginning of the school year(Adams&Christenson, 2000). In addition, tenth-graders showed a higher tendency of trusting teachers due to a sense of closeness and belief than eleventh-graders(Lee, Hye-Sook, 2010).

The trust carrying these characteristics has positive correlations with student's learning motivation and physical education attitudes (Furrer & Skinner, 2003).

Also, Lee's study (2006b) suggested student's trust in teachers had effect on student's academic achievement through having influence on one's self-esteem, academic motivation, and class climate.

As these studies discuss the concept, cause and result of trust with no broad concurrence on what the trust between a student and a teacher refers to, the conceptual ambiguity increased, which faced criticism in that it seemed something in an ivory tower. (Jeong, Young-Su et al, 1998)

As such, to identify what the bases are that students use to build trust in teachers, the focus should move to students. Students experience constant environmental change in school. They interact with tens of teachers in each grade with changing classroom, peer group, physical environment and rules. Therefore, this study will clarify the grounds of trust in high school students and what factors influence them. Interview data with students will be analyzed to explore the meaning of trust in teachers that students think along with the characteristic of trust that can be found in teacher-student relationship. Based on this purpose, research questions were established as follows :

1. On what basis do high school students trust their teachers?
2. What are the influence factors of high school students' trust in teachers?

METHODOLOGY

To study these research questions, we interviewed 19 high school students. After gathering the interview data, this study attempted to adapt content analysis. Content analysis is a research technique for making replicable and valid inferences from texts (Krippendorff, 2004, p.18).

Participants

Participants were 19 students who attended B high school in Korea and agreed to provide the information in accordance with the purpose of the study. In selecting the participants, we tried to consider the intimacy with teachers and their grades. Through the snowball sampling method, we interviewed the other students who had similar characteristics through the first interview. The basic information of participants is summarized in <Table 1>

<Table 1> basic information of participants

Name	Sex	Grade	Name	Sex	Grade
S1	F	2	S10	F	3
S2	F	2	S11	F	2
S3	F	3	S12	F	2
S4	F	3	S13	M	1
S5	M	3	S14	M	1
S6	F	3	S15	M	1
S7	F	3	S16	M	2
S8	F	3	S17	M	2
S9	F	3	S18	F	2
			S19	F	3

Data collection process

Data was collected through individual interviews or interviews with 2 participants. After getting consent to participate in the study from all research participants, the research purpose and interview questions were presented to the participants in advance. Analysis of previous studies and interviews were conducted for 7 months from October 2016 to April 2017. The interviews were mainly conducted by the researchers at the home or near the school.

The researcher explained the purpose of the study and the anonymity of personal information when using data processing. The interviews encouraged the research participants to naturally speak their thoughts and experiences by applying semi - structured interview. During the interview, the researchers encouraged the participants to keep the topic of the interview. In some cases, the researcher questions were changed, excluded,

or added by the researcher. At the end of the interview, we organized the overall contents of the students' trust experience and corrected the ambiguous expressions that were found during the interviews.

After completing the interview, we transcribed the interview within three days to prevent the loss of data. In addition to confirming the missing parts that were found during the transcription process, we checked the participant through phone or text message.

Prior to conducting interviews, the researchers made the interview questions based on their analysis of previous research related to school trust, student-teacher trust and trust effects. The content of the interview that has been revised is followed:

- Do you keep good relationship with your teachers?
- How many trusty teachers are there in your school?
- What is the major influencing factors in creating trust among teachers?
- How long does the trust typically last?
- What kind of changes happen after trust was created between teachers and student?
- Have you experienced the loss of trust in teachers?

Data analysis

The researchers conducted the content analysis process proposed by Krippendorff (2004). The first step is the 'deep understanding of the whole text'. In order to understand the text in depth, we read the whole data more than five times and carefully examined the students' experience. The next analysis procedure is 'finding meaningful statements'. The researchers organized the texts into appropriate units, selected meaningful statements related to the research questions and coded them. The third step is to collect similar or interrelated content to form a higher-level 'category'. the researchers categorized higher-level categories by grouping similar or interrelated contents. As a result, three factors were categorized as 'student factor', 'teacher factor' and 'situation factor'.

FINDINGS

1. Student Factor

-Students' different expectations on teacher role

Every student have different expectations about how teachers should be. As one teacher plays various roles such as a subject specialist, counselor, and classroom manager, there are various expectations from students on each role of the teacher. First of all, when a teacher is subject specialist, students want their teachers to engage all students in learning with responsibility(S5), to instruct knowledge beyond textbooks with professionalism(S11) and to answer student's questions in detail(S1, S8).

“Teacher is a teaching job. But some teachers don't have any responsibility or sincerity in teaching. A good teacher should take care of even the students left behind(S5)”

Students share their concerns and thoughts on going to college with teachers in and out of classroom as they spend considerable amount of time together. At this time, students want their teachers to listen to their story carefully, giving sincere advices (S2, S3, S7) and to pay attention to every student equally regardless of student's grades(S5). In addition, students don't want their teachers to tell inconsistent information about them to parents or other teachers while expecting their teachers to treat them respectfully(S2, S7).

On the other hand, they have different expectations on a teacher as a homeroom manager from those on subject specialist. As students spend a year together with their homeroom teacher, they want their teacher to pay attention to individual student(S9, S11, S12) and to understand each student's interest. Also, students expect teachers to create an atmosphere conducive to academic pursuit and give them every information that are helpful for preparing for college(S12).

“I think what teachers do first is to know their students. I mean for example, they should know how the atmosphere of the class the students are in...They should just see the students as they are with no bias based on their grades(S12)”

-Advance information about their teacher from their peers or seniors

Students tend to hear information about their teachers from their peers or seniors before the new school year begins. They are told stories about how well a teacher can teach, whether teachers treat students equally regardless of their grades, and whether teachers engage in counseling with affection. Interacting with their teachers for a year, some students actually get to build good relationships even with teachers whose reputation was bad and they face different attitudes and behaviors of teachers from those that they had expected.

“My homeroom teacher was notorious for his temper. Sometimes, he hit students. So, I was worried when he became my third grade teacher. However, he was not bad-tempered at all and took a good care of us(S3)”

2. Teacher factor

-Teacher behavior in accordance with student's expectation

High school students make a decision on whether to trust the teacher or not primarily based on their expectations toward teachers. When they think a teacher as a counselor, they seem to build trust in teachers when teachers are attentive in listening to students(S1, S2), understand each student's situation(S15) and try to give sincere advice(S4). Especially in counseling on their going to college or future career, students are likely to build trust on teachers seeing their teachers giving best advice and information considering the potential and the interest of each student with being free from bias formed based on each student's grades.

A homeroom teacher interacts more with students. As such, high school students want their teachers to create a good atmosphere for studying(S2) and give them positive energy to live through a hard school life(S5, S6, S7). In some cases, students trust their teachers when their teachers are fully aware of the information they need to deliver to students. In contrast, when teachers put their opinions and emotions first rather than student's and force them to follow to solve any problems they confronted, student's trust level in teachers declined(S18).

Also, students feel trustful of their teachers when they find that teachers are proud of their job, organize instructions flexibly depending on the interest or conditions of students(S1, S2, S3, S11, S12) and give kind and easy answers to understand to student's questions. However, when a class is taught depending on the mood of a teacher(S11, S12, S19), too teacher-centered(S3, S11) and the instruction does not go beyond textbooks, students don't appear to trust their teachers.

“When some teachers teach in class, it seems like we are not in the scene. There's only the teacher. It is not teaching students, but teaching themselves. They write on the board without checking whether we're with them. And when the students do not answer, they give us pressure for answers(S3).”

-Teacher's professionalism based on their efforts behind the scene

Students seem to strengthen their trust in teachers when they find out about their teachers' effort in preparing for classes with prior research and examples and reference materials. Students said they know whether teachers put a lot of effort and energy in preparing for classes or not (S5) because they check out teacher's 'writing on the board' or 'teacher's textbook'(S3, S4, S9, S10). Students not only build trust in their teachers but also get motivated seeing their teacher's constant effort.

“Sometimes I am curious about the teacher 's teaching materials when I sit in the front seat. I look at their books, some teachers books are completely black, well organized by highlighter. Then I promise myself I should be a hard-working student. Those teachers are great stimulation for me(S4).”

In addition, when students see their teachers try to memorize all the names of students they teach, they take it as a 'symbol of attention' and identify their teachers' affection toward them. Observing teachers remembering not only students' names but also their interest and concerns and give helpful advices, students feels the responsibility a teacher has in teaching students.

-Consistent behavior and attitude of teachers

It was found that teacher's consistent behavior and attitude contribute to student's trust building in teachers. Even if a teacher is met with student's expectations and equipped with a professionalism as a teacher, unless teacher's behavior and attitude are consistent, students find it hard to fortify their trust in their teachers. For example, if the atmosphere of a class varies depending on the mood of the teacher and when a student is given a report card that was written differently from what they had been informed, student's trust level in teachers declined(S18).

“When we talked with teachers in class, I felt much closer to teachers. But when I saw teachers are together talking with each other in school office, I felt like we were scored by them(S18).”

3. Situation factor

-Multiple situations in which students interact with teachers

Students' trust in teachers is different in each scene because of the variety of situations (instructor, classroom manager, guidance teacher) that students interact with teachers. For instance, even if a teacher gives clear and easy instruction, if he seems to have no affection and interest in his homeroom class, the trust level in that teacher is likely to vary in each scene. For this reason, rather than defining the concept of trust as a whole, students tend to have different trust levels even on the same teacher based on different reasons for each scene.

“My homeroom teacher taught English when I was freshman. He taught us well. But once he/she became my homeroom teacher, she didn't take care much of homeroom teacher. Rather, she seemed more interested in other classes so I was disappointed(S1).”

In addition, individual student may experience that the level of trust changes between when they interact with teacher in groups and when they meet one-on-one with teacher. Even when students don't have enough time to judge trust on teachers, they get to experience the unseen behaviors and attitudes of teachers through one-on-one interaction with teachers, which then influences student's trust level.

-Teacher's influence on student's future plan for college

As planning for college is important in high school, it had both direct and indirect influences on student's trust level in teachers. Especially as teacher's influence is growing for teachers are the ones that fill in the personal schooling record of each student, Also, as in the case of 'S19' who hopes to major in music, relationship with a teacher from private academy has more influence on her than school teacher. Thus she have little opportunity or necessity to build trust in school teachers.

“They are adults. So it's kind of uncomfortable. When I talk to my friends, I have a lot to talk about. But I do not know what to talk with teachers. It's hard to feel close to them when they talk only about my grades. So I just want to maintain normal relationship with teachers as a student(S7).”

-Changing expectations on teachers by grade

Most students were found to have changing expectations on their homeroom teachers as they enter higher grade. A student may have different opinion on the same teacher when she met the teacher in 1st grade and later in 3rd grade. It shows that the expectation on the teacher is different depending on the situation the students are in.

“We have to get good grade until 2nd grade. And finding fun in school life is also important. So I think being close with teachers is helpful in getting good grades. But in senior year, we don't interact with teachers as much as we used to because we spend more time watching online class. So I think teachers should understand that(S10).”

CONCLUSIONS

Trust in others is not naturally given. It is not externally given, nor is it a fixed concept. High school students' trust in teachers will have similar characteristics as trust in other relationships.

Previous researches focused on the influence of student's trust in teachers on the individual and school. However, a comprehensive study on how students build trust in their teachers and what factors influence the trust building process was not included. Therefore, this study is the result of analyzing their thoughts and experiences on trust in teachers obtained from interviews with 19 high school students in South Korea. The results of the interviews show that high school students' trust in teachers is complicated by the behavior and characteristics of teachers, the characteristics of individual students, and various situations surrounding them. The characteristics of high school students' trust in their teachers revealed through research are as follows.

First, when students(trustor) trust their teachers(trustee), it can be seen that a student's expectation on teacher role or advance information about their teacher influences rather than the teacher's behavior and attitude. This leads to a conclusion that the characteristic of individual student(trustor) plays a role in building and developing trust in teachers.

Second, high school students refer to teachers' apparent behaviors and attitudes that are consistent with their expectations, but they also take teacher's effort behind the scene into account. It can be seen that preparing the materials and illustrations for good instruction and showing the teachers time and energy for studying the instruction as an opportunity to deepen the trust in teachers.

Lastly, students' trust in teachers is influenced by the context and circumstance around them. Even on the same teacher, there are differences in the grounds and meanings of students' trust in them depending on the scenes they are facing such as instruction, classroom, and counseling. Also, students feel there are invisible wall between them and teachers as teachers have great influence on student's future plan for college. Therefore, it can be seen that the students' trust in friends, parents, etc. and the trust in teachers do not develop in the same way.

This study can complement the existing research in that it examines the grounds and related trust factors in teachers in terms of high school students. In the future, it will be necessary to explore on the basis of teacher trust formation and its meaning in the elementary and middle school scene.

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La Fete De La Francophonie and Intercultural Communication of French University Students in Indonesia

Sri Harini Ekowati

Faculty of Languages and Arts

Universitas Negeri Jakarta

sriharini@unj.ac.id

ABSTRACT

The study portrays the development of students' intercultural competence through La Fete De La Francophonie activities. In developing the language skills, the French students need to explore the French culture as part of their learning process to develop the language and intercultural competences. La Fete De La Francophonie activities are designed to commemorate Francophonie Day which is held on every March 20. The activities give a broad opportunity to students and lecturers to interact with the French people and Francophone for approximately a week. The qualitative research approach is employed as a research methodology which involved 20 participants. The study result shows that the intercultural competence of participant developed because of this activity. The activity also involved participants from other countries such as Switzerland, Canada, Belgium, Morocco, Algeria, Laos and Vietnam.

Keywords : *La Fete De La Francophonie, intercultural competence, France as foreign language, university student*

INTRODUCTION

La journée de la francophonie is a worldwide celebration of international organization of La francophonie which takes place on March 20th of each year.

This event is created in 1988 as the way for 220 million francophones on 5 continents celebrate their shared language and the diversity of La francophonie, through many competitions as word competition, films festivals, songs festivals, literally meeting, gastronomic meeting and artistic meeting.

The event was in collaboration with FIPF (Federation International des Professeurs de Français), RFI (Radio France International), AUF (Agence Universitaire Française), TV5 monde. In Indonesia, francophonie is held through various activities which is initiated by France Embassy cooperate with Swiss, Canada, Belgia, Algeria, Maroco, Vietnam & Laos Embassy. Francophonie celebration is held regularly. At the beginning the event was held in big hotels that affiliated with Accor Group, but in 2000 the event moved to campus. Embassy of francophone countries and France Embassy in Jakarta cooperate with French study program in UNJ (State University of Jakarta) and UI (University of Indonesia) to started the event in the campus.

Approximately in 2010, UIN (State Islamic University) open French course and collaborate with IFI (Institut Français d'Indonésie), and then francophonie event held in those three campus. Francophonie event started with opening ceremony and then various activity such as singing, speech contest, debate contest, drawing contest, photography, writing contest, francophonie movie screening and ended with closing that usually consist of announcement of each contests' winner. The closing ceremony usually held in France Ambassador's residence in Jakarta. But, last year the closing was held in University of Indonesia.

French study program of UNJ, one of participants in francophonie event, always participate every year. In 2011 French study program UNJ hosted this big event. The opening ceremony of francophonie event was held in Teacher Certification Building UNJ, that was attended by Catherine, France Ambassador of Indonesia, Canada Ambassador, Swiss Ambassador, representative from Maroco, Algeria and Laos. The event also attended by FBS Dean, UNJ Rectorate, Representative from UI, UIN, IFI and student from French study program of UNJ, UI and student representative from UIN.

Francophonie event in March 2017 was held also in French study program UNJ. The opening was held in University of Indonesia that was attended by France, Swiss, Canada, Maroco and Algeria Ambassador. The debate contest took place in University of Indonesia was held in French which is involved by 40 students from UI and UNJ. It is also involved by the native speakers Immene and Amel.

French Study program UNJ celebrate francophonie by making singing and speech contest in French. Singing and speech contest who was followed by High School student from Jakarta. The jury were Josef, native speaker from Canada Embassy and Amel from France Embassy. All activity in celebrating francophonie that was followed by student always involved native speaker from France or francophonie country. So, during francophonie event for seven days, a cultural communication was certainly happen among the participants.

Non direct cultural communication also happen during france movie screening and francophonie that was held for four days. The movies was screened and discussed in class and used France language.

Based on activity above it is concluded that there are intense intercultural communication when francophonie held. This writing will discuss on how intercultural communication happen, whether this activity gives positive impact on student intercultural ability and other things that related to this activity. Chornet and Par in Journal of Intercultural Communication, March 2017 stated that a corollary of understanding speech codes through six steps interactive training cycle is the development of emic intercultural communication competence and sensitivity (Journal of Intercultural Communication, ISSN 1404-1034, March 2017). Thus intercultural communication competence enhancement can be achieved in many ways.

To know whether intercultural communication ability increase, questionnaire is used as data collection tool and comes with a portfolio that tells experiences, comments, suggestions and critics after they follow the activities of la semaine de la francophonie.

To discuss the matter above, the definition of intercultural ability according to experts will be presented. Intercultural communication simply define as communication done by minimum of two people with different cultural background. The culture differential can cause misunderstanding and fatal misunderstanding. The misunderstanding can cause lack of communication. The obstacles in intercultural communication usually caused by the different of language that used by two persons that communicate, different of culture and different of value. According to Ting-Toomey in Cinfo, intercultural communication definition build on these elements:

- deux personnes (ou deux groups), de cultures différentes, en interaction, négociant un signifié commun. (Véronique Schoeffel et Phyllis Thompson, 4 :2007).

Those definition explain that intercultural communication happen if there are two persons or two groups with different culture interacting and negotiating with same language. The word *negotiation* in those definition is very important because in intercultural communication, a communication is not the only important thing, but moreover to understand between communication participants.

It is the same with Gudykunst & Kim notion in Fathur Rokhman (2013: 100) stated that intercultural communication understood as oral transaction process, symbolic process that involved attribution of meaning between individuals from different culture. Therefore to have good intercultural ability someone should understand and receive other culture, because if it is not, then shock culture happens. Transactional process what is meant above related to negotiation of meaning. In negotiation of meaning, individuals that communicating should *experience either light obstacle or correct obstacle*.

According to Lewis and Slade in Fathur Rokhman, at least there are three sectors that become a problem in intercultural change, there are language constraints, different of value and different of pattern of cultural behaviour (Rokhman, 2013 : 100).

Language constraints become the main problem, because in verbal and non verbal communication a difficulty will occur if someone using different language. For example, Indonesian that communicate with French. If both

of them don't understand both languages, misunderstanding will happen. Sometimes although Indonesian can speak French and communicate with French, some constraints still happen.

Every country must have their own values so if two persons with different language and culture communicate, constraints still happen. While pattern of cultural behaviour is the reflection of a country, so each country has a different pattern of cultural behaviour, therefore it is also become the problem. From the three constraints, language constraint is more easy to handle. Because language can be learned by themselves or participate in a private course or in an institution.

To have intercultural ability, a student must have three characteristics above plus things like stereotype and prejudice. Stereotype is people's view of others or other group based on limited knowledge of others or group.

Intercultural ability can be developed if each side that interacts can eliminate or minimize cultural misunderstanding such as prejudice and stereotype. And if each side can arrange or manage worry or uncertainty that exists.

In globalization era like today, the meeting between two cultures or more cannot be avoided. Therefore intercultural ability is indispensable by everyone, moreover student that learn French language. In the La Fête de la Francophonie event organized by the French study program, French and the people of francophone country were involved, so there is a meeting of two or more cultures, and it gives the students and lecturers opportunity to be able to increase the intercultural communication competence.

Methodology

This research followed by 20 respondents that were active in La Fête de la Francophonie event. They are debate participants at University of Indonesia and also active as committee in Francophonie event in UNJ. Therefore, they also hang out and interact with French and Francophone at the event.

To know their intercultural ability, measurement instrument is used. The instrument was in the form of writing that tell about message, comment and everything connected with La Fête de la Francophonie event. From their writing, (portfolio) it is found that their intercultural ability has developed.

Findings

After data were analyzed, these are the results:

1. Understanding French people in this case native

For example statement M.N:

- Grâce à ce concours-là, j'ai obtenu plus d'information sur les caractéristiques de chaque pays francophone.
(Thanks to this competition, I obtained more information on the characteristics of each francophone country)

Statement HK :

- Je suis arrivée à l'heure mais les natifs ne sont pas arrivés quand j'ai été là. Mais enfin je comprends que pour le rendez-vous avec des français, 15 minutes de retard, c'était normal.
(I arrived on time but the natives haven't arrived when I was there. But finally I understand that for the appointment with French, 15 minutes late, it was normal)

Statement F.

- Je peux collaborer avec des autres étudiants et des natifs.
(I can collaborate with other students and natives)

Statement N.K :

- Nous nous sommes entraînés par les natifs : Madame Amel Bouhekouk et Madame Immène Maa donc j'ai compris comment les natifs nous entraînent et c'est dur.
(We trained by the natives: Mrs. Amel Bouhekouk and Mrs. Immène Maa so I understood how the natives train us and it's hard)

2. Understanding vestimentaire style.

Statement I.N.

- Je comprends qu'aujourd'hui, la jeunesse a son propre style vestimentaire et je peux le respecter.
(I understand that today, the youth has its own style of dress and I can respect it)

3. Understanding culture of francophone's country.

Statement N.W.

- Je suis dans le groupe de Maroc, et Je comprends petit à petit le Maroc, les gens de Maroc, les vêtements et la culture.
(I am in the group of Morocco, and I understand little by little Morocco, the people of Morocco, the clothes and the culture)

Statement N.K:

- Le nom de notre group était Canada, alors dans ce débat le nom de chaque groupe a utilisé le nom de pays francophones. Et moi je dois savoir ce pays.
(The name of our group was Canada, so in this debate the name of each group used the name of francophone countries. And me, I must know this country)

4. Could cooperate with French people or francophone.

Statement M.N.

- Le plus important de tout cela, la relation entre des étudiants et des natifs est bien construite.
(Most important of all, the relationship between students and natives is well built)

Statement HK:

- Je peux collaborer avec des autres étudiants et des natifs.
(I can collaborate with other students and natives)

Statement TL:

- Avant j'ai peur de participer à cette activité mais enfin j'ai réussi de le faire.
(Before I was afraid to participate in this activity but I managed to do it)

Statement Ina:

- D'abord je ne suis pas sure que je peux y passer enfin j'ai pu y participer.
(At first I'm not sure that I can pass it, finally I could participate it)

Statement NK:

- J'étais choquée quand notre professeur m'a informé pour participer à ce concours, enfin j'ai réussi de résoudre ce problème et j'ai été contente.
(I was shocked when our teacher informed me to participate in this contest, finally I was able to solve this problem and I was happy)

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Leading Software Development Methodologies in Central Europe

Veronika VESELÁ

Faculty of Applied Informatics

Tomas Bata University in Zlín

Czech Republic

vvesela@fai.utb.cz

ABSTRACT

This paper describes results of research undertaken to obtain information about used methodologies and their combination by SW companies in central Europe. Research was processed as an anonymous online questionnaire. It was addressed a wide range of software development companies. It was the company developing in a commercial, personal, governmental and non-profit sector. These companies engaged in mobile, desktop or web development. These companies are focused on mobile, desktop, or web development. This research followed previous research of software development in Czech Republic. Combination of these two researches could determine the most used methods of software development in across the central Europe. Results of this research could be used in the teaching of software engineering (Veselá, Krbeček, 2016).

INTRODUCTION

Large number of new software is developing every day. Software development could be done in several ways based on standardized methodologies. Selection of the right methodology is a key part which could affect time and quality of development. This paper describes results of research undertaken to obtain information about used methodologies and their combination by software development companies in central Europe. Research was processed as an anonymous questionnaire. It was filled by the leading members of the development team or person responsible for the choosing of process for software development. It was divided into three main parts. First part was about main information of software companies (size, type, software platform, ...), second part was focused on used methodologies and third part was focused on custom software development process (Veselá, Krbeček, 2016).

THE STUDY

There are several methodologies to develop software. These methodologies can be divided into two main groups: "Traditional" and "Agile". Traditional development approaches have been around for a very long time. Traditional methodologies may be characterized by a sequential series of steps like requirement definition, planning, building, testing and deployment. These methodologies must follow the exact development process (Awad, 2005), (Xie, Shen, Rong, & Shao, 2012).

Everything changed in 2001. Seventeen process methodologists held a meeting to discuss future trends in software development. There was created Agile 'Software Development' Manifesto. Representatives from Extreme Programming, SCRUM, DSDM, Adaptive Software Development, Crystal, Feature-Driven Development, Pragmatic Programming, and others ("Manifesto for Agile Software Development", 2001). This manifesto brings new possibility in software development. The Agile methods place more emphasis on people, interaction, working software, customer collaboration, and change, rather than on processes, tools, contracts and plans. Agile developers are more flexible through their iterative style of work than Traditional developers. The main advantage of Agile methodologies is that the Agile methodologies allow clients to make changes throughout the development process. (Awad, 2005), (Al-Zewairi, Biltawi, Etaiwi, & Shaout, 2017).

FINDINGS

Questionnaire was sent to SW companies across central Europe. It was divided into three main parts and consists of 30 questions. It was filled by the leading members of the development team or person responsible for the choosing of process for software development. First part was about main information of SW companies (size, type, software platform, ...), second part was focused on used methodologies, and third part was focused on custom software development process. The survey was undertaken during the period from January to June 2017 (Veselá, Krbeček, 2016).

Responses were used to answer these questions like:

- What types of methodologies are used (Traditional/Agile)?
- What principles are used in development process most?
- Are there newly created methodologies or the commonly known are used?

From the first part of the questionnaire, we found that all of the companies work for a commercial sector. The size of companies was represented by numbers of employs. Main part of respondents (45%) has 16-30 employees. Next

main group of respondents (28%) can be considered as small companies since they have 1 to 5 employees. Next aspect of company identification was number of new project per year quarter. Main part of respondent (54%) has 1 to 5 new projects. Second group (32%) has 6 to 10 new projects.

A. What types of methodologies are used (Traditional/Agile)?

Data shows that the trend of using Agile methodologies is more popular than Traditional methodologies. In previous research in Czech Republic the trend was quite balanced between Traditional and Agile methodologies (Veselá, Krbeček, 2016), see Figure 1 and 2.

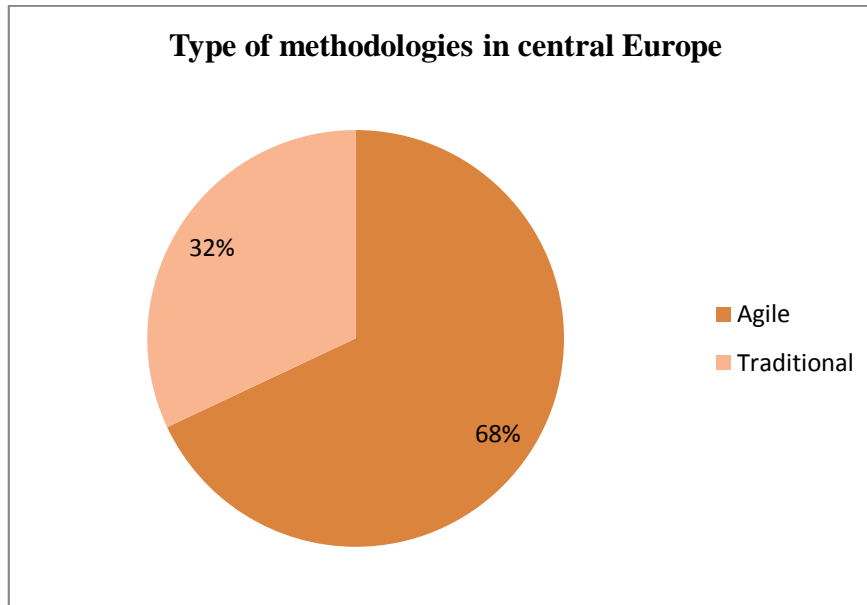


Figure 1: Type of methodologies in central Europe

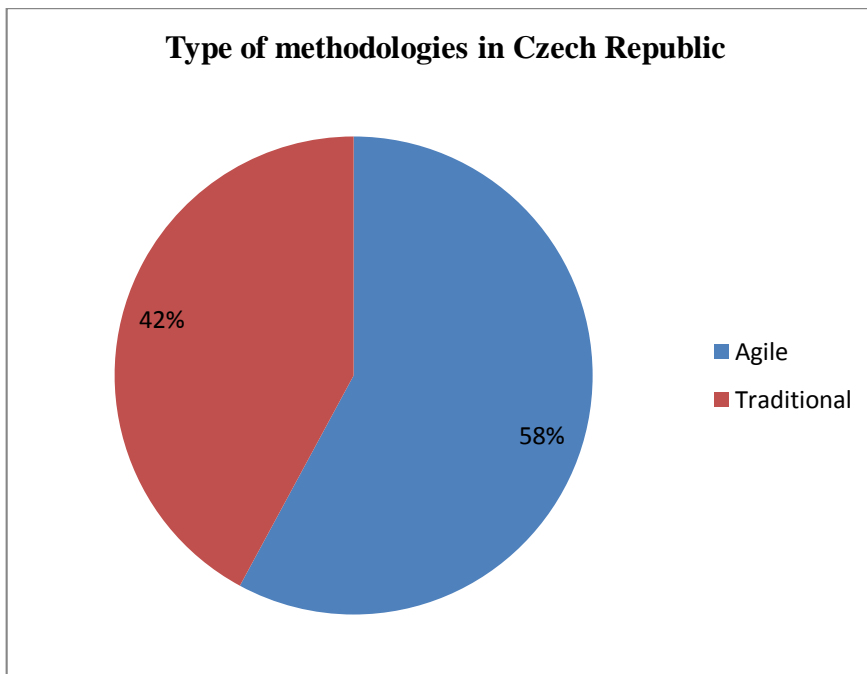


Figure 2: Type of methodologies in Czech Republic

Almost 70% of the respondents claim to have knowledge of both types of methodologies very height. It shows that people working in area of development software have good knowledge about possibilities and ways of

development. They can choose from several ways of development.

B. What principles are used in development process most?

The most used principle is "Regular meetings of the development team". This principle is based on Scrum methodology, which is mentioned below (Table 3 and 4) as the most known methodology. It is followed by principles "Development is customized for each project", "The rapid development, prototyping and client involvement" and "A quick start of development". Least used principle is "Development process repeatedly follows several parts in spiral". Full data can be seen in Table I. below.

Regular meetings of the development team	35
Development is customized for each project	29
The rapid development, prototyping and client involvement	21
A quick start of development	16
Actions follow consecutively	14
A predetermined rules	10
First are test scenarios and then code	9
Learning from mistakes	8
Ordinary activities are tightened to extremes	5
Development is carried in small sections so called features	4
Development process repeatedly follows several parts in spiral	3

Table 1: Basic principles of development in central Europe

In previous research in Czech Republic was the most used principle "Regular meetings of the development team". "A predetermined rules" and "Development is customized for each project". Full data can be seen in Table II. below. (Veselá, Krbeček, 2016).

Regular meetings of the development team	20
A predetermined rules	19
Development is customized for each project	18
Ordinary activities are tightened to extremes	16
Actions follow consecutively	12
Development process repeatedly follows several parts in spiral	11
First are test scenarios and then code	11
The rapid development, prototyping and client involvement	8
Learning from mistakes	8
A quick start of development	5
Development is carried in small sections so called features	4

Table 2: Basic principles of development in Czech Republic

There are some comments filled in by respondents:

- A quick start
- Low ongoing costs
- The core team of experts is on permanent stand-by with the flexibility to engage coders and other staff on part-time basis.
- Flexibility of operations because clients may be change by them requirements specification at any time
- Clients have the right to control the work of the team.

- At all parts of the project development the client has access to the team and can see the progress.

C. Are there newly created methodologies or the commonly known are used?

In this part was intended to answer this question. None of obtained custom development process descriptions contain any new principle or part. All process was composed from principles contained in standard methodologies.

In the small companies is used a more liberal approach. The methodologies can be modified by other practice from other methodologies. In the large companies are used more Traditional methodologies because they can plan the added complexity of running and a sequential series of steps like requirement definition, planning, building, testing and deployment (STOICA, MIRCEA, & GHILIC-MICU, 2013).

Scrum	41
Waterfall development	39
Extreme Programming	25
Dynamic software development	19
Test driven development	16
Rational Unified Process	15
Rapid application development	13
Crystal	12
Adaptive software development	8
Unified Process	6
Lean development	4
Feature driven development	3
Spiral development	2

Table 3: The most used methodologies in central Europe

Scrum	34
Waterfall development	23
Test driven development	23
Rapid application development	20
Extreme Programming	20
Rational Unified Process	19
Lean development	13
Spiral development	12
Feature driven development	11
Unified Process	9
Adaptive software development	0
Dynamic software development	0
Crystal	0

Table 4: The most used methodologies in Czech Republic

CONCLUSIONS

Field of software development is a very important part of information communication technologies. It could be done in several ways based on standardized methodologies. Research shows that the most known and used methodology is SCRUM. This Agile methodology has gained wide acceptance in the world. It is especially effective for developing custom web and mobile applications.

Agile methodologies can be described by following claims (Awad, 2005), (Al-Zewairi, Biltawi, Etaiwi, & Shaout, 2017):

- People and interactions are more important than processes and tools;
- Working code is more important than perfect documentation;
- Cooperation with customer is more important than contractual commitments;

- Response to changes is more important than sticking to a plan.
- Agile development methodology is especially effective for projects with limited timeframe. It requires minimal documentation at all stages of project development.
- Close interaction of clients with the development team provides quick response to client's requests.

This research followed previous research of software development in Czech Republic. Combination of these two researches could determine the most used methods of software development and will lead to design of a new hybrid methodology for software development.

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Learning About Safety, Prevention and Quality of Life Through PBL: Implications for Teacher Education

Laurinda LEITE

*Research Centre on Education, Institute of Education,
University of Minho, Portugal
lleite@ie.uminho.pt*

Luís DOURADO

*Research Centre on Education, Institute of Education,
University of Minho, Portugal
ldourado@ie.uminho.pt*

Sofia MORGADO

*Research Centre on Education, Institute of Education,
University of Minho, Portugal
sofiamorgado@ie.uminho.pt*

Manuela VALE

*Secondary School of Castelo da Maia, Maia, Portugal
manuelasilvavale@gmail.com*

Carla MADUREIRA

*Secondary School of Castelo da Maia, Maia, Portugal
carcon133@hotmail.com*

ABSTRACT

In Problem-Based Learning (PBL) students learn ‘new’ knowledge by solving problems. Studies focusing on the efficacy of PBL for the learning science content knowledge are rare and their results are not fully consistent. This study aims at: comparing the effectiveness of a transdisciplinary PBL and traditional teaching with regard to students’ learning of science knowledge within the scope of the theme Safety, Prevention and Quality of Life; finding out students’ opinions on transdisciplinary PBL approach. The sample is made of two 9th grade classes of a school located in the north of Portugal. The experimental class (24 students) approached the theme through PBL in an integrated way that is, Natural Sciences and Physical Sciences teachers pooled together the concepts that they were supposed to teach and organized PBL oriented teaching as if those concepts belonged to a single school subject. The control class (25 students) studied the same theme through traditional teaching, with the concepts of each school subject addressed separately by each one of the teachers. Data relative to content learning were collected by means of a pre- and a post-test and data relative to PBL students’ opinions on the new teaching approach were collected through an opinion questionnaire. Results indicate that transdisciplinary PBL led to a bit better results than traditional teaching and that students valued PBL.

CONTEXT OF THE RESEARCH

Problem-Based Learning (PBL) is a student-centred teaching approach that is consistent with the key principles of active learning as it is defined by Savery (2006) and Tan (2004). In a PBL learning environment, students are at the centre of the teaching and learning process (Barrows 1986; Barrows, 1996; Boud & Feletti, 1997; Lambros 2002; Hmelo-Silver, 2004) and they play an active role in it as they have to take the appropriate actions to learn (deeply) knowledge (that is new to them) by solving problems (Dahlgren, Castensson & Dahlgren, 1998).

In a PBL approach, problems are the starting point for learning (Barrows, 1986; Barrows, 1996; Dahlgren, Castensson & Dahlgren, 1998; Lambros, 2002; Hmelo-Silver, 2004). They determine what students learn, as this depends on the problem-solving process demands concerning knowledge and skills. Problems are qualitative or quantitative statements that offer an obstacle to problem-solvers who have to find strategies to overcome the obstacle and to reach a solution (Pozo, Postigo & Gómez-Crespo, 1995; Neto, 1998; Jonassen, 2004). To succeed in doing so, students need to use conceptual and procedural knowledge within the scope of the field(s) of the problem, as well as appropriate problem-solving strategies (Hmelo-Silver, 2004). Usually, problem-solvers do not possess all the necessary knowledge and skills and therefore they need to develop them (through study, inquiry, etc.) before being able to reach a good solution (if there is one for the problem that is at stake) or concluding that the problem has no solution.

In a PBL learning environment, teachers do not teach in the usual sense (Dahlgren, Castensson & Dahlgren, 1998; Chin & Chia, 2004). They are not there to *tell science* or to even to explain science concepts to students (Leite & Esteves, 2012). Thus, there is a risk that they feel that they are not playing their role as teachers (Li & Du, 2015). If it is the case, it may interfere negatively with the learning environment, as they may reduce

students' learning freedom and responsibility. This is why teachers may need support (Goodnough & Nolan, 2008; Pepper, 2009; Morgado, 2016) before they are used to and become comfortable with PBL.

However, as it was discussed in another paper (Leite & Esteves, 2012), in a PBL context, teachers have a variety of important roles to play and many key things to organize and monitor. Above all, teachers *are there* to stimulate students' curiosity through scenarios or problems that interest to students and that make them feel willing to engage into a problem-solving process (Lambros, 2002). In doing so, teachers provide students with learning opportunities that these may feel as being relevant for school as well as for daily life purposes. Nevertheless, within school systems that acknowledge curricula which are not problem-based (as defined by Boud and Felletti, 1997) students' learning possibilities are often conditioned by the problems that are selected by the teacher. As a matter of fact, when making this selection, the teacher bears in mind a mandatory curriculum that requires certain concepts, laws and theories to be taught and learned at a given school level.

Besides, teachers have other key roles to play, namely to guide students' work towards learning goals achievement and to ascertain that learning takes place (Dahlgren, Castensson & Dahlgren, 1998; Hmelo-Silver, 2004). In the former case, teachers need to prevent the possibility of having students stuck before some difficulty, as this would cause demotivation and even frustration along with waste of time. The idea is not that the teacher gives direct answers to students' questions but rather that he/she 'answers them' by asking other questions (Hmelo-Silver, 2004) that make students think about relevant issues or rethink some procedures, or redistribute the group roles, etc. In the latter case, teacher needs to ascertain that learning takes place. To do so, he/she needs to use appropriate tools both during the problem-solving process (e.g., questioning the problem-solving teams about their achievements and the foundations of their actions) and afterwards. In fact, by the end of the process, teacher should promote a new knowledge synthesis (Hmelo-Silver, 2004) or revision (if necessary) and a retrospective analysis of the problem-solving process. On one hand, asking students to make the synthesis themselves can make evident the need for knowledge revision through appropriate remediation strategies, which should be student-centred, consistently with the PBL underlying philosophy. On the other hand, the retrospective analysis can help students to develop an awareness of the problem-solving strategies that showed to be more or less useful, as well as the team members' actions and behaviours that were more or less productive and consistent with the group's mission.

Arguments for teaching science through a PBL approach (see, for example, Hmelo-Silver, 2004; Lambros, 2004; Azer 2008) assume that PBL may enable students to:

- learn science content knowledge, as problems focus on some science issue that is new or partly new for the students and that needs to be mastered before the problem solution is reached;
- learn procedural knowledge, including problem-solving skills and science process skill, as students need to find the most appropriate strategies to solving the problem. Reaching this goal may require the use of several process skills, some of which may be new to the students;
- develop interpersonal skills, as PBL is usually done in small groups or teams whose members need to cooperate so that they can reach their common goal that is to find one or more solutions for the problem, if it has a solution;
- develop communication competences, as they need to read, write, prepare materials, do presentations and discuss, at least, with colleagues and teacher.

These arguments are consistent with, for instance: Dewey's ideas of learning as a social process; Piaget's idea that learning depends on the learner's logic-mathematic reasoning abilities (Piaget, 1979); Vygotsky' idea that learning takes place in social contexts in which the teacher should scaffold the students (Palincsar, 1998; Tan, 2007); Bruner's idea that students learn better by doing (Palincsar, 1998); and Ausubel's idea that the type of learning that matters is meaningful learning which requires knowledge to be integrated into the cognitive structure of the learner (Ausubel, Novak & Hanesian, 1980).

Despite the convincing arguments for PBL, reviews of research focusing on the effects of PBL on science learning (e.g., Albanese, & Mitchell, 1993; Demirel & Dağyar, 2016; Dochy et al, 2003; Leite, Dourado & Morgado, 2016) do not provide unequivocal support for PBL as a teaching approach. In fact, PBL students' conceptual learning results are often similar to the ones attained through conventional methodologies and seldom overcome them. However, there are two aspects in favour of PBL that deserve being stressed: no PBL-based published research was found leading to lower results than the traditional approaches; PBL fosters the development of relevant learning components other than the conceptual one. However, it should be noted that some research studies have methodological limitations (Albanese & Mitchell, 1993; Hung, Jonassen & Liu, 2008; Leite, Dourado & Morgado, 2016) that reduce the credibility of the results attained.

Research on teachers' reactions towards PBL suggests that they fear (Goodnough, 2008; Leite et al, 2013; Morgado, 2016) but (after getting used) enjoy (Vernon, 1995; Dahlgren, Castensson & Dahlgren, 1998; Pepper, 2008; Ribeiro, 2010; Leite et al, 2013; Morgado, 2016) the challenge of trying a very different methodology but they feel unsecure about students' learning (Li & Du, 2015) in a PBL environment. They themselves ask for support from people experienced on PBL in order to get advice on how to deal with the challenge of putting PBL into practice in real classrooms. Besides, research indicates that according to teachers, students' reactions

towards science teaching through PBL depend on students' academic level, with the low achievers (according to teachers' criteria) showing better attitudes than top students (Leite et al, 2013; Morgado, 2016).

As it is well known, PBL started in medical schools (Barrows, 1996; Camp, 1996; Boud & Feletti, 1997; Barret & Moore, 2011; Hmelo-Silver, 2004; Savery, 2006) but it quickly spread to other areas and reached science education, namely in Portugal where the first known paper was written in 2001 (Leite & Afonso, 2001) and the first research was completed in 2001 by Gandra. At the time the research reported in this paper took place, the National Curriculum (DEB, 2001a) as well as the Physical and Natural Science Curriculum Guidelines (DEB, 2001b) did not explicitly mention the use of problems for science curriculum development but they suggested the use of problem-solving in the science classroom (Morgado & Leite, 2011). Nevertheless, they did not make any explicit reference to PBL. However, it seems possible to integrate PBL into science classes without contradicting the spirit of the national curriculum guidelines. This may happen because the guidelines argue for the use of student-centred teaching approaches that give students an active role and that acknowledge their previous knowledge as a starting point for the development of a diversity of competences, ranging from conceptual, to procedural, attitudinal and metacognitive.

Most science teaching in Portuguese schools is still teacher-centred and subject-based. There are a few experiments with PBL focusing on different science topics and school grade levels, organized on a school subject basis (e.g., Gandra, 2001; Carvalho, 2009; Torres, Preto & Vasconcelos, 2013). Despite the reduced sample size, they suggested that students might have benefited from PBL because they achieved better learning results or because they developed competences that their counterparts did not. In addition, a research study carried out by Morgado et al (2016) suggested that PBL organized into a transdisciplinary basis led to better results than the traditional approach when high demanding cognitive questions were at stake but not necessarily in the case of low demanding questions. If this can be confirmed, it would be a strong argument in favour of PBL.

In summary, even though PBL seems to be a powerful approach, research results are not clear enough with regard to PBL effect on science learning, partly due to some research design weaknesses. Besides, some studies did not take into account the multidisciplinary nature of real problems, which requires PBL to be transdisciplinary rather than school subject-centred.

RESEARCH QUESTION

Bearing in mind the disciplinary teacher-centred characteristics of most Portuguese science teaching and the multidisciplinary nature of real life problems, this study aims at comparing a transdisciplinary PBL approach with traditional teaching of the theme 'Safety, Prevention and Quality of Life', with regard to students' learning of science content knowledge; finding out students' opinions on the transdisciplinary PBL approach. According to the official curriculum, this 9th grade theme is supposed to be approached within both Natural Sciences and Physical Sciences school subjects and therefore the two of them were involved in this study.

RESEARCH METHODOLOGY

In Portugal, science education for all children goes up to 9th grade that is to 14/15 years old. Afterwards, students must continue at school but they can choose to study science or not. Thus, this research is centred on the last school grade in which science is taught to all children, which is a relevant stage from a citizen's education point of view. It took place in a secondary school that volunteered to participate in a research project which encompassed the research reported in this paper.

As mentioned above, the science theme chosen for the purpose of this research was 'Safety, Prevention and Quality of Life', which belongs to the syllabuses of two school subjects: Physical Sciences (includes Physics and Chemistry) and Natural Sciences (includes Biology and Geology). Physical Sciences are supposed to cover topics like Basic motion concepts, Collisions, Airbags, Helmets and seat belts, Traffic accidents prevention. Natural sciences are supposed to address issues like Traffic accidents, Effects of alcohol and drugs on the driver's abilities, Driver's food behaviour and psychological characteristics.

A quasi-experimental, pre-/post-test design with control group (see McMillan & Schumacher, 2010) was adopted. Two 9th grade classes and their four teachers were involved in the study even though with different degrees of engagement. Thus, from the experimental group (EG) side, a Physical and a Natural Sciences teacher were involved together with their 24 students. From the control group (CG) side, a Physical and a Natural Sciences teacher were also involved together with their 25 students.

The EG followed an active student-centred transdisciplinary PBL approach. Teachers were invited to work together to approach the topics referred to above, with no differentiation between what used to be the class time periods of each one of the two school subjects. Teaching materials were prepared or selected by the EG teachers and the researchers. To start the PBL sequence, a scenario like a press news focusing on 'Reducing traffic accidents: a matter of safety, prevention and quality of life', was adapted by the two schoolteachers and the researchers. It worked as a context for students to raise problems that would require concepts within the scope of the whole theme if they were to be solved by the students. Both teachers monitored the students, which were asked to work in small groups, each at a time or together, according to their availability and the anticipated students' needs of guidance. One of the researchers observed all the EG classes to give support to teachers.

However, at the end, both teachers assisted to students' presentations and conducted the solution analysis and the process evaluation. Figure 1 gives a synopsis of the process followed in the EG.

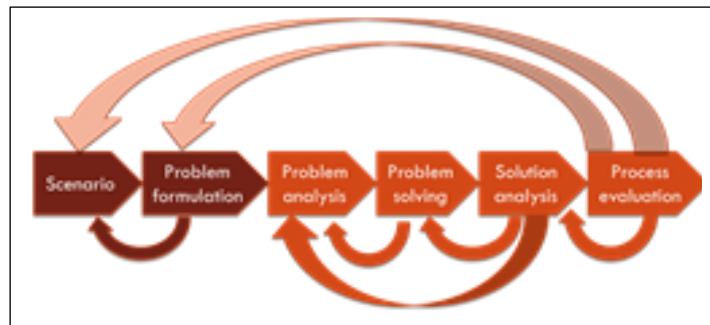


Fig. 1: Synopsis of the PBL approach followed in the EG

The CG followed a disciplinary teacher-centred approach with teachers working separately and with a well-marked differentiation of the two subjects. They followed the assigned textbooks approach, namely with regard to the sequence of the topics and the activities performed in each subject.

Both interventions lasted for about a month. However, in the CG part of the time was devoted to solving exercises after addressing the content.

Inquiry through questionnaire was the data collection technique adopted. Then, to avoid contamination, the researchers alone designed a paper and pencil test to be used as pre- and post-test in the two research groups. The test covers the contents addressed and includes open-ended questions so that students could explain their ideas without being influenced by a given set of predetermined possible answers.

Students answered the test individually, two days before initiating the theme (pre-test) and eight days after concluding it (post-test). Both groups have done it in a Physical Sciences class time, supervised by their own Physical Sciences teacher.

Data analysis included content analysis based on a set of predetermined categories, as follows:

- *Correct answer*: scientifically accepted and complete answer, according to what is expected for this grade level, based on what is prescribed in the syllabus;
- *Incomplete answer*: answer that misses one or more elements required to be considered complete but does not include any incorrect idea;
- *Answer including alternative conceptions*: answer that includes ideas which are not consistent with the scientifically accepted ones;
- *Don't answer*: comprises no answer, incomprehensible answers and answers that simply repeat the question.

Pre-/post-test gains were also computed. They have to do with the difference between the post-test and the pre-test percentages obtained for each category of answer. They indicate a variation that can be either positive or negative and that is good or bad depending on the category that is at stake. A positive gain is desirable for the correct answer category and a negative gain is desirable for the Don't answer category. For the other categories, the interpretation of the gain in a category depends on the gains in the other categories. Finally, to attain the objective of the study, control group *versus* experimental group comparisons were made.

Afterwards, a more detailed analysis was performed in order to get more information on the incomplete answers and the ideas that were more and less hard for students to acquire.

In a physical sciences class after the post-test, the EG students were asked to answer to an opinion questionnaire on the PBL approach. The questionnaire, composed of 15 directional Likert type items, had been developed previously by Leite, Dourado & Esteves (2011). The scale used was a five degrees scale ranging from *Nothing* to *A lot*. Frequencies per item and scale grade were computed in order to get information on issues that deserved more and less positive reactions from the EG students.

RESEARCH RESULTS

Students' learning

Table 1 shows the results relative to students' science content knowledge learning which were collected through a test used as pre- and post-test in both research groups (EG and EC). In the pre-test, no research group reached a correct answer in any question. In the post-test, correct answers were obtained in one question (question 3) only.

Table 1: Control/experimental gains comparison for questions asking for an explanation (%)
(N=49)

Question	Group	Correct		Incomplete		Including AC		Don't answer	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
1 - Driving under alcohol	CG	0,0	0,0	96,0	92,0	4,0	4,0	0,0	4,0
	EG	0,0	0,0	75,0	91,6	25,0	8,3	0,0	0,0
2 - Driving under drugs	CG	0,0	0,0	84,0	96,0	16,0	0,0	0,0	4,0
	EG	0,0	0,0	83,3	87,5	12,5	0,0	4,2	12,5
3 - Slow down motion	CG	0,0	4,0	24,0	44,0	4,0	20,0	72,0	24,0
	EG	0,0	29,2	20,8	16,7	12,5	20,8	66,7	33,3
4 - Speed and velocity	CG	0,0	0,0	0,0	4,0	36,0	44,0	64,0	52,0
	EG	0,0	0,0	0,0	70,8	33,3	4,2	66,7	25,0
5 - Asleep driver after lunch	CG	0,0	0,0	28,0	44,0	72,0	44,0	0,0	12,0
	EG	0,0	0,0	45,8	62,5	50,0	37,5	4,2	0,0
6 - Instantaneous velocity <i>versus</i> mean speed	CG	0,0	0,0	12,0	24,0	8,0	0,0	20,0	60,0
	EG	0,0	0,0	20,8	58,3	8,3	0,0	70,8	41,7
7 - Collisions on a road	CG	0,0	0,0	28,0	40,0	8,0	8,0	64,0	52,0
	EG	0,0	0,0	42,2	54,2	4,2	0,0	53,6	45,8

Note: $n_{EG} = 25$; $n_{CG} = 24$

Table 2 shows the gains (positive, null or negative) for the seven questions used to assess students' learning in this research study. An analysis of the gains obtained for the correct answers shows that non-null gains were obtained for question 3, the only got correct answers. Those gains are positive for the two research groups. However, the gains obtained for the EG (29,2%) are much larger than those obtained for the CG (4,0%) which is a result in favour of the EG.

Table 2: Control/experimental gains comparison for questions asking for an explanation (%)
(N=49)

Question	Correct		Incomplete		Including AC		Don't answer	
	CG	EG	CG	EG	CG	EG	CG	EG
1 - Driving under alcohol	0,0	0,0	-4,0	16,6	0,0	-16,7	4,0	0,0
2 - Driving under drugs	0,0	0,0	12,0	4,2	-16,0	-12,5	4,0	8,3
3 - Slow down motion	4,0	29,2	20,0	-4,1	16,0	8,3	-40,0	-33,4
4 - Speed and velocity	0,0	0,0	4,0	70,8	8,0	-29,1	-12,0	-41,7
5 - Asleep driver after lunch	0,0	0,0	16,0	16,7	-28,0	-12,5	12,0	-4,2
6 - Instantaneous velocity <i>versus</i> mean speed	0,0	0,0	12,0	37,5	-8,0	-8,3	-4,0	-29,1
7 - Collisions on a road	0,0	0,0	12,0	12,5	0,0	-4,2	-12,0	-7,8

Note: $n_{EG} = 25$; $n_{CG} = 24$

Then, an analysis of the gains for the incorrect answers shows that: no null gains were obtained; larger positive gains were obtained for the experimental group in three questions (question 1, 4 and 6); similar positive gains were obtained for questions 5 and 7; lower gains were obtained for the EG in question 2 and 3. However, if in the case of question 3 we sum up the gains obtained for the correct and incomplete answers, for each group, 24,0% and 25,1% will be obtained for the CG and the EG, respectively. Even though these two percentages are similar, the 25,1% of the EG are better because they come mainly from complete answers while the 24% of the CG come mainly from incomplete answers. Data given in table 2 also show that positive gains in the complete and incomplete answers are associated with negative gains in the Don't answer and/or Including Alternative Conceptions (AC) answer. Thus, it can be stated that the EG achieved better results than their counterparts in the CG.

As far as the incomplete answers are concerned, table 3 shows that in question 1 the CG incomplete answers were more incomplete than those of the EG as the percentage of incomplete answers mentioning 2 or 3 effects that alcohol can have on a driver's organism is much larger in the EG (40,9%) than it is in the CG (26,1%). Being the numbers of students similar in both groups (22 and 23, respectively), this result is also in favour of the EG.

Table 3: Driving under the effect of alcohol - # of effects in Incomplete Answers (%)

# effects mentioned	Pre-test		Post-test		Gains	
	CG (n=24)	EG (N=18)	CG (n=23)	EG (n=22)	CG	EG
1	87,5	83,3	73,9	59,1	-13,6	-24,2
2 or 3	12,5	16,7	26,1	40,9	13,6	24,2
4 or 5	0,0	0,0	0,0	0,0	0,0	0,0

Table 4 shows that the two research groups mentioned the same effects of the alcohol, in the pre- and the post-test, the only exception being the EG that did not mention sleepiness, in the pre-test. ‘Difficulty of risk assessment’ was the effect mentioned by larger percentages in the pre-test probably because it has to do with every day (including mass media) arguments against drink ingestion before driving.

Table 4: Driving under the effect of alcohol - Effects mentioned in Incomplete answers (%)

Effects	Pre-test		Post-test	
	CG (n=24)	EG (n=18)	CG (n=23)	EG (n=22)
Reduction on the reaction capacity	25,0	27,8	65,2	63,6
Difficulty of risk assessment	50,0	61,1	34,8	54,5
Sleepiness	20,8	0,0	8,7	9,1
Vision limitations	20,8	27,8	17,4	22,7
Motor coordination limitations	0,0	0,0	4,3	9,1

Percentages relative to ‘Reduction on the reaction capacity’ and to ‘Motor coordination limitations’, increased from the pre- to the post-test, being a bit favourable to the CG in the former case and to the EG in the latter case. These effects have to do with human physiology (Ogden & Moskowitz, 2004; Carson-DeWitt, 2003) and the increase in the percentages from pre- to post-test may mean that learning took place in both groups.

Table 5 shows that in question 2 the CG incomplete answers were quite as incomplete as those of the EG, as the percentage of incomplete answers mentioning 2 or 3 effects of drugs on a driver’s organism is quite as large in the EG (28,6%) as it is in the CG (29,2%). It should be emphasised the CG students that had mentioned 4 or 5 effects in the pre-test did not mention the same number of effects in the post-test. Therefore, these results are not clearly in favour on any of the groups.

Table 5: Driving under the effect of drugs - # of effects in Incomplete Answers (%)

# effects mentioned	Pre-test		Post-test	
	CG (n=21)	EG (n=20)	CG (n=24)	EG (n=21)
1	85,7	95,0	70,8	71,4
2 or 3	9,5	5,0	29,2	28,6
4 or 5	4,8	0,0	0,0	0,0

Data given in table 6 show that the most mentioned effects in Incomplete answers relative to the effects of drugs on the driver compare to those most mentioned for the alcohol question (see table 4). However, the control group added a new effect in the pre-test that is hallucinations, which is also mentioned by authors like Ogden and Moskowitz (2004) and Carson-DeWitt (2003). In the EG, from pre- to post-test, percentages increased for all effects except for ‘Difficulty of risk assessment’. In the control group, the percentages obtained for several effects decreased a little bit. The ‘Reduction on the reaction capacity’ was again the effect whose percentages suffered a larger increase as it happened in the case of alcohol (see table 3). This increase was larger for the EG.

Table 6: Driving under the effect of drugs - Effects mentioned in Incomplete answers (%)

Effects	Pre-test		Post-test	
	CG (n=21)	EG (n=20)	CG (n=24)	EG (n=21)
Reduction on the reaction capacity	28,6	10,0	50,0	61,9
Difficulty of risk assessment	47,6	85,0	41,7	57,1
Sleepiness	9,5	0,0	4,2	4,8
Vision limitations	14,3	5,0	8,3	14,3
Motor coordination limitations	0,0	5,0	0,0	9,5
Hallucinations	28,6	0,0	25,0	4,8

Question 3 asked students to explain why a child (Rui) traveling without the car seat belt fasten was project forwards and hit the head when his father slowed the car down due to meeting a red traffic light, in a raining day. Table 7 shows that each incomplete answer for this question includes one of two explanations. The first explanation is a synthetic statement that does not provide fully evidence that their holders really understand what they are saying. This interpretation is supported by answers like the following one: “His seat belt was not fasten and a body that is moving tends to keep on motion” (post-test, CG11). The first part of this answer is a repetition from the question (the seat belt was not fasten) which is not explicitly related to the second part of the answer, which is a general statement (on the inertia law), not explained.

Table 7: Motion when slowing down - Explanations in Incomplete answers (%)

Explanation	Pre-test		Post-test	
	CG (n=6)	EG (n=5)	CG (n=11)	EG (n=4)
Rui's body tends to continue in motion	0,0	20,0	63,6	0,0
As Rui's seat belt was not fasten, there was nothing to prevent him from keeping moving with the car speed at the slow down instant	100,0	80,0	36,4	100,0

The second one is much more explicit in terms of why Rui was projected. In fact, it implicitly mentions the role of the seat belt (it would prevent Rui from keeping moving with the car speed), as shown by the following answer: “As a force was exerted on the car, it stopped; as no force was exerted on Rui, he kept on moving” (post-test, EG18). In the post-test, all the incomplete EG answers fell into this category, while the same happened with only about one third of the CG incomplete answers.

Question 4 focused on Rui's conversation with his father; Rui was talking about the car speed and his father talking about the car velocity. Table 8 shows that incomplete answers relative to a possible difference between the meanings of the two words were registered in the post-test only and that they fell into three categories.

While the CG incomplete answer fell into the most incomplete group of answers, the EG incomplete answers are distributed by the three categories, being some of them (11,8%) quite complete, which is an indicator of deeper learning. An example of this is the following answer, which combines type of magnitude and trajectory: “Velocity is the distance (straight line) between points A and B (displacement) over a certain time; speed is the path travelled between points A and B over a certain time.” (post-test, EG18). Bearing in mind table 1, the incomplete answers are a result of a reduction in Including Alternative Conceptions and/or Don't know answers. Therefore, data in table 8 reinforce the idea of a better performance of the EG.

Table 8: Speed and velocity - Explanations in Incomplete answers (%)

Explanations	Pre-test		Post-test	
	CG (n=0)	EG (n=0)	CG (n=1)	EG (n=17)
Velocity is a vector magnitude and speed is a scalar magnitude	0,0	0,0	100,0	52,9
Velocity is a ratio between the displacement and the time spent to make it; speed is a ratio between the path covered and the time used to cover it.	0,0	0,0	0,0	35,3
Velocity is a ratio between the displacement and the time spent to make it; speed is a ratio between the path covered and the time used to cover it. Then, opposite to speed, velocity does not depend on the trajectory.	0,0	0,0	0,0	11,8

When explaining why a truck driver fell asleep after lunch, having slept well the night before (question 5), students mentioned only one of the two issues that would be demanded to them according to the syllabus. Thus, they based their explanation either on ‘Digestion energy requirements’ or on ‘Blood concentration on stomach and intestine’ (table 9), which are effects that are mentioned in the literature (Barr & Wright, 2010; Eldelstone & Holzman, 1981). The former was the most popular in both research groups, in the pre- as well as in the post-test. Surprisingly, a few students of the EG abandoned the explanations based on the idea of ‘Blood concentration on stomach and intestine’. In the whole, these results are consistent with those given in table 1, as they are not in favour of none of the research groups.

Table 9: Driving when feeling asleep after lunch - Explanations in Incomplete answers (%)

Explanation	Pre-test		Post-test	
	CG (n=7)	EG (n=11)	CG (n=11)	EG (n=15)
Digestion energy requirements – needs energy and originates a deficit in the rest of the body	85,7	45,5	100,0	86,7
Blood concentration on stomach and intestine – brain has not enough blood to react	14,3	54,5	0,0	13,3

Question 6 focuses on who was right: a driver, arguing that he made calculations (with time and km) and was moving at 100km/h, and a police officer, accusing the driver of having exceeded the maximum velocity (or instantaneous speed, that is equal to instantaneous velocity magnitude) limit of 120km/h. Table 10 shows that three types of incomplete explanations were obtained, being the first one a statement that does not make explicit the difference between the two concepts that are at stake: instantaneous velocity and mean speed.

Table 10: Instantaneous velocity vs mean speed - Explanations in Incomplete answers (%)

Explanation	Pre-test		Post-test	
	CG (n=3)	EG (n=5)	CG (n=6)	EG (n=14)
Mean speed is different from instantaneous velocity	0,0	0,0	16,7	0
The value shown by the policy radar has to do with instantaneous velocity	33,3	0,0	16,7	0
The driver's argumentation is wrong because it is based on the computation of the speed and this is not what the radar shows.	66,7	100,0	66,6	100,0

Even though many incomplete answers were got in the post-test for the EG, they not only resulted from a decrease in the Alternative conceptions and Don't know answers but also fell into the most complete group of incomplete explanations. This group shows disagreement with the driver's reasoning, uses the concept of mean speed and implicitly or explicitly suggests that the radar does not shows that magnitude. This can be illustrated by the following answer: "The car driver calculated the mean speed [100km/h] but he may have exceeded the velocity limit [120km/h] even though the mean was that one." (post-test, CG25).

Table 11 shows that the number of Incomplete answers increased in both research groups from pre- to post-test, for question 7. This question focuses on the effects of two cars colliding with the road protection rails. In one of the collisions, the rails were damaged but not broken; in the other collision, the rails were broken. The two explanations obtained for incomplete answers suggest that students seem to focus on the observable effects rather than on the interaction between the cars and the protection rails. Nevertheless, it seems that the second explanation given in table 11, shown by less students in both groups, is a bit more complete than the first one. In fact, the second explanation relates force, speed and collision effects, as illustrated by the following answer: "To break the protecting rails a large force is needed; this means that it was travelling with a larger speed." (Post-test, EG15). These results suggest that the numbers of students showing the most complete answer did not change from pre- and to post-test.

Table 11: Collision on a road - Explanations in Incomplete answers (%)

Explanation	Pre-test		Post-test	
	CG (n=7)	EG (n=10)	CG (n=10)	EG (n=13)
The larger the magnitude of the impact force, the more violent is the collision	85,7	80,0	80,0	92,3
The larger the speed, the larger the magnitude of the impact force and the strongest is the effects of the collision	14,3	20,0	20,0	7,3

EG students' opinions on PBL

The EG students' opinions on PBL were collected through an opinion questionnaire, after the post-test. Table 12 shows the questionnaire 15 items, clustered according to the skills that underlie them, and the frequencies obtained for each grade of the scale.

Table 12: EG students' opinions on the PBL approach (f)

(N=24)

Skills	Items	Nothing	A little bit	Moderately	Quite a lot	A lot
Learning	13. Deepen knowledge/ideas	0	0	7	9	8
	14. Understand content	0	5	4	10	5
	12. Learn about issues that interest to me	0	3	7	8	6
Problem-solving	10. Learn how to solve problems	0	1	4	15	4
	8. Learn how to plan tasks	0	2	4	14	4
Thinking	11. Learn how to synthesize	0	2	5	13	4
	7. Learn to think	0	2	2	12	8
	5. Learn how to interpret information	0	0	9	11	4
Communication	3. Learn how to communicate ideas	0	3	3	14	4
	4. Learn how to present own ideas	0	2	6	14	2
	1. Learn how to argue and counter-argue	0	2	9	11	2
Social interaction	6. Learn how to share tasks	0	1	7	15	1
	2. Learn how to cooperate with colleagues	0	0	4	14	6
	9. Learn how to respect the others' opinions	0	0	7	12	5
Welfare	15. Feel comfortable	2	5	8	4	5

An analysis of the frequencies given in this table shows that at least two thirds (that is 16) of the 24 students choose the Quite a lot or A lot degrees for 10 (out of 15) items. Item 15 was the only item that got non-null frequencies for the Nothing degree and about one-third only for Quite a lot plus A lot, meaning that some students did not feel comfortable with PBL classes. This sensation may be due to students' initial lack of experience with not only PBL but also with teamwork and with enquiry like tasks, as well as with their high level of anxiety regarding the non-distinction between the two disciplines and the nonexistence of exercises to be solved by (and after) the end of the classes. Thus, it seems that the novelties introduced may have really caused initial discomfort to students. Nevertheless, for what researchers and teachers could observe, most of them overcame those difficulties and anxiety quite fast. An additional evidence of this is that the discomfort felt did not impair them from recognising the positive things they got from the PBL approach. Excluding item 15, items 1 and 12 are the ones that got less Quite a lot and A lot. In the former case, on one hand, it should be noted that argumentation is not an easy competence to develop (Belland, Glazewski & Richardson, 2008) and, in the other hand, it may happen that students were not familiar with the words, especially with counter-argumentation. It may be that argumentation and counter-argumentation competences development may need more assistance from the teacher than the PBL context provided. In the latter case (item 12), it should be emphasized that what students learned was limited by the problems that emerged from the scenario. During the classes, teacher(s) were used to monitor the small groups' activities in order to check whether they were on the task or whether they were doing other things. It was necessary to settle strict rules for internet access in order to prevent waste of time with issues that were not relevant for the task students had at hands. In fact, undue internet use was an expected issue (see Dogruer, Eyyam & Menevis, 2011) as it was students' unhappiness with limitations on this. On the other hand, as argued above, the fact that the Portuguese curriculum is not a problem-based one, obliged teachers and researchers to find problems to be solved that were consistent with the curriculum demands, as the use of a new methodology and the undertaking of a research experience could not prevent the compulsory curriculum to be followed.

CONCLUSIONS AND IMPLICATIONS

The global results together with the incomplete answer analysis suggest that students in the EG performed better than their CG counterparts, which is a result consistent with studies that compared PBL with traditional teaching (ex. Gandra, 2001, Carvalho, 2009; Khoshnevisasl et al, 2014; Zahid et al, 2016; Strobel & van Barneveld, 2009; Morgado et al, 2016). However, both groups rarely reached complete answers, which may be partly due to strict correction criteria adopted in this research and partly due to language issues. The latter may be especially true for physics questions that deal with the speed and velocity concepts, as the words that give names to these two physics concepts are usually used undistinguishably in Portuguese everyday language. Besides, even though the EG students may have felt an initial discomfort (as it happened in other studies – see, for example, Gandra, 2001; Selçuk, 2010; Alessio, 2004; Larin, Bucciari & Wessel, 2010), they seem to have valued PBL as they recognized that they have developed several types of competences.

Thus, the use of a transdisciplinary approach neither impaired students from learning nor made them feel confused and unhappy. However, the fact that some students (not only but also in the EG) used a sort of slogan-like explanations when trying to explain their reasoning on issues related to daily life situations should deserve

attention. On one hand, pedagogic attention is needed in order to find better ways of promoting deep learning. Hence, results obtained through the present study should be combined with those obtained by Morgado et al (2016) in order to find ways of making PBL more useful for the learning of students' complex and familiar issues. On the other hand, research attention is needed in order to find out whether slogan-like answers just happened or whether this is a result consistent with what Silva, Leite and Pereira (2013) found with seven graders, which were asked to solve familiar problems.

This concern raises a few questions that are worth considering. Were students happy with their previous common sense knowledge about the effect of drugs and alcohol on the organism so that they did not feel the need to learn more about it? Should the teaching context have been able to deal with such knowledge to show that it is not enough to fully explain the situation? Was inertia law too much emphasized so that students memorized it and, maybe, based on previous experiences, felt that it would be enough to restate the law without explicitly relating it to the problem-situation that was at stake? Of course it may also have happened that the information sources used by the students were reinforcing the slogan-like answers or that they were unable to propel students to go deeper into the issue. Answering to these questions would be useful for organizing learning situations more able to foster students' deep learning through PBL.

Finally, bearing in mind that EG students managed well with transdisciplinary PBL, it should be investigated how disciplinary and transdisciplinary PBL convey students the ability to deal with real problems which are transdisciplinary in nature. Transdisciplinary PBL is more demanding for teachers and school organization. From the authors' experience, teachers need to get not only training but also support from researchers or colleagues used to PBL as well as from the school director. PBL requires flexible classroom organization and school resources use which need to be acknowledged by the whole school. Effort to get such support may be worthwhile as PBL seems to be one of the best teaching approaches for XXIst century students, which need to be prepared for solving real problems. As it was argued elsewhere (Leite et al, 2017; p.159), PBL can "show students that science [...] is all around them and that the knowledge it encompasses may help them not only to better understand, fully appreciate and respect more the natural world but also to take more advantage from what the natural world can offer without putting it at risk."

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Learning Adequacy of Nigerian Tertiary Educational System for Sustainable Built Environmental Course

R. OJELABI

Covenant University (NIGERIA)

rapheal.ojelabi@covenantuniversity.edu.ng

A. AFOLABI

Covenant University (NIGERIA)

adedeji.afolabi@covenantuniversity.edu.ng

P. TUNJI-OLAYENI

Covenant University (NIGERIA)

pat.tunji-olayeni@covenantuniversity.edu.ng

L. AMUSAN

Covenant University (NIGERIA)

lekan.amusan@covenantuniversity.edu.ng

I. OMUH

Covenant University (NIGERIA)

ignatius.omuh@covenantuniversity.edu.ng

ABSTRACT

Learning is highly pivotal in every areas of life, it could be formal, informal or non-formal. Irrespective of the form of learning, it has turned out to be a veritable medium in human training. This study will concentrate on the adequacy of learning in a formal environment. The study examined some indicators that can limit learning of building course in some selected tertiary institutions which include the lecturer capacity, lecturing method and learning facilities indicators. The study adopt survey method with the aid of structured questionnaire to elicit information from the respondents on the adequacy of learning in their institutions. Findings revealed some gaps across the selected institutions learning adequacy and to address the gap, it is recommended that there should be collaboration among the institutions as to strengthen each other weakness and to encourage industries role in education funding.

Keywords: *learning, education, higher-institution, building program.*

1.0 INTRODUCTION

The concept of learning has attracted high attention from different stakeholders in the past and on till the present day. Learning as gather such momentum due to its numerous impact that is evidenced in the present world. Learning has proved to be a veritable tool that have advanced and sustained our world. Learning is not limited by human class, gender or race, it is an insatiable well from which all human drinks. Either formal, informal or non-formal learning, man has benefited immensely from learning potential. Learning has immensely contribute to advancing frontiers of knowledge. Learning effect on human mind are vivid in our world as great discoveries emerged from the learned mind. Egmond, Kuhnen and Li (2013) opines that learning is indispensable to man as it is part of life. Man's sustainability lies in his ability to learn. The concept of learning has been an issue of discourse among researchers as they tend to discover effective learning medium. In line with their findings, Nganga (2011) asserted that learning concept cannot be generalized due to its multidimensional views. Laal (2011) further affirmed that concept of learning cannot be generally defined due to differing perceptions of various cultural groups across the globe on this subject matter. Egmond, Kuhnen and Li (2013) however reveal the parallel view of learning across two different cultural background. To the western world learning is viewed as a mind-oriented tool while the East-Asia viewed it as a virtue-oriented. Mind oriented learning primarily focus on the cognitive center which as to do with mental development and alertness through knowledge acquisition. Virtue oriented learning however leap beyond the scope of the mind learning as it encompass the mental development to developing the wholeness of a man. It is evidenced from the forgoing that learning defines the uniqueness of different culture. Irrespective of the cultural view of learning, the form of learning is universal. Tissot (2004) further buttresses on the three forms of learning which

include formal, informal and non-formal learning. Formal learning is viewed as a form of learning which are obtainable within a structured and organized environment. Informal learning are form of learning which are synonymous with the acquisition of vocational skills while the non-formal learning is form of learning which evolve through daily life activities. This paper will strictly be limited to formal form of learning. In a formal environment, it is pertinent to address dependent indicators on which sound learning can be attained and they includes lecturer, learning facilities among others. The concept of learning cannot be certified without addressing the dependent variables. The various benefits of learning cannot be achieved without addressing the factors that can enhance learning effectiveness. The state of learning in our higher institution has been an issue of concern due to the gap in the expected to the observed performance in a learned individual. Such observation as generated questions as to the competency of our instructor, the state of our leaning facilities and other key factors of concern. To this end, this study will carry out an enquiry as to ascertain the state of learning in our higher institutions. It will look at the various indicators that can limit learning of building course in our institutions which include the lecturer attitude, lecturing method and lecturing facilities.

2.0 LEARNING CONCEPT

The sustainability of any education system across the globe is dependent on teaching and learning effectiveness. Teaching and learning are two inseparable twin which must flow together. Learning is what makes teaching interesting. The premium placed on learning is evidenced from researcher's efforts to making learning appealing to all. The concept of learning has evolved in different dimension from traditional learning to electronic learning (e-learning) to mobile learning (m-learning) and presently to blended learning. Nordin and Alias (2013) identify blended learning as a type which allow for integration of traditional learning (face to face learning) with online learning. Both m-learning and e-learning are both online learning mode. The changing phase of learning is aimed at arriving at the optimum learning mode to solving existing challenges in learning. However, effort towards making learning more effective cannot be ascertained without involving the learners. The best route toward solving the issues with learning in higher institutions can only be ascertained from the student's perceptions. Centra and Gaubatz (2005) opines that beyond the student's grade for the evaluation of learning in a course which is mostly limited to the course learning outcome, there are need to be holistic in the students learning indicators to be able to capture the realistic perception. Koon and Murray (1995) further reveal the general indicators that can best measure the student's perception of learning and they include; students' affinity in the subject, students reasoning ability, student's self-understanding and cooperative abilities. Measuring students learning perception by assessing their affinity for the subject matter is without doubt one of the veritable medium of measuring learning. The interest in a subject is not just a sudden occurrence as there must have been some level of interaction which are only obtainable under a friendly learning environment. Also, student's critical thinking skills are product of effective learning which has expand student's capacity to reason. Corporative abilities and understanding capacity are two values that are evidenced in a learned individual. Teaching effectiveness was also found to be a realistic indicator to measure student's perception of learning (Ryan and Harrinson, 1995; Cashin and Downey 1999). Without doubt teaching effectiveness is one of the key medium that ascertained learning capacity. Poor teaching skill can demoralize student's zeal to wanting to learn a subject of interest while a good or effective teaching can boost the morale of the individual and such a person will be highly informed. Aside the teaching effectiveness, teaching facilities and environment are also relevant factors that should be given high consideration in measuring students learning capacity. Considering a building technology course which entails a lot of practical training, student imaginative ability can be better appreciated when the necessary facilities are in place to assist in students learning. Arfwork and Asfaw (2014) affirmed that critical thinking learners will no doubt require learning facilities to aids their thinking capacity. Learning in higher field of learning is no more purely traditional as there are need to adopt modern technology as to aid students learning capacity. In the same vein learning environment also contribute to student's capacity to learn effectively as it defines the wellbeing of the mind which is the core center of learning.

2.1 HIGHER INSTITUTION OF LEARNING IN NIGERIA

Like other country around the globe, Nigeria is abound with several higher institutions and they are tasked with human training, learning and all-round development. These institutions are widely spread across the geographical zones of the country. The ownership of these various institution are categorized under three ownership structure which are State, Federal and Private. Both the federal and state are under the auspices of the government while the private ownership is controlled by an individual or group. This study will capture institutions across the identified group of institution. The three institutions that will be focused on for this study are Covenant University, Moshood

Abiola Polytechnic and Federal Polytechnic Ilaro. Covenant University is a private own university and it is located in Ogun state which is south-western region of the country. Also, Moshood Abiola Polytechnic and Federal Polytechnic Ilaro which are state and federal owned institutions respectively are both located in Ogun state south-western region of Nigeria as well. The three institution are offering technical and engineering related courses which include building program. This paper will be assessing the adequacy of building program in the identified three institution of learning in Nigeria.

3.0 RESEARCH METHODOLOGY

The study is aimed at assessing anti-sustainable indicator to the learning of building program in our higher institutions. The aim is achieved by considering the objectives which are to ascertain the adequacy of the building program from the human and facilities resources consideration and as well to compare the adequacy of the building program among selected institutions. Both primary and secondary data are sourced for to achieve the stated objectives. Primary data were collected with the aid of structured questionnaires administered to the students in the selected institutions which are Covenant University, Moshood Abiola Polytechnic and Federal Polytechnic Ilaro. Purpose sampling technique was used in selecting the sample in other to control the response. Higher institutions students were the targeted respondents due to their learning status in the various institutions. A total of 70 questionnaires were administered to the students studying building program in the three selected institutions and each two of the institutions received twenty five questionnaires each while the last received twenty questionnaires.

The questionnaire was divided into two sections, section one examined the characteristics of the respondents, the second section assessed the anti-sustainable indicators of building program and the assessment are placed on the likert scale of 1-5 to be scored accordingly. Respondents were to score in accordance to level of agreement where; 1 = do not agree, 2 = slightly agree, 3 = neutral, 4 = agree, 5 = strongly agree. The third section addresses the strategy to developing technical education and respondents are to attest to the agreement of the factors in the following order on the likert scale; 1 = do not agree, 2 = slightly agree, 3 = neutral, 4 = agree, 5 = strongly agree.

4.0 ANALYSIS AND RESULT

4.1 Characteristics of the Respondents

In this section, the personal information of the respondents used for the study was analyzed using percentage. The result obtained are presented in table 1

Table 1 shows the summary of the demographic characteristics of the respondents. The male gender represents 47.1% while female gender represents 52.9%. It is evidenced from the result that there is adequate representation of both genders in the study. The age bracket, 15-20 years represents 52.9% of the total respondents which is second-to-none in the age bracket group. 30% of the respondents fall within the age bracket 21-25 years of age while the age bracket with the least respondent was 25 years and above with respondents percentage rate of 8.6%. The result shows that the respondents are well represented age wise. The respondents rate of the selected there institutions which are Covenant University, Moshood Abiola Polytechnic and Federal Polytechnic Ilaro are 35.7%, 35.7% and 28.6% respectively.

Table 1: Characteristics of Respondents

Characteristics	Frequency	Percentage
Gender		
Male	33	47.1
Female	37	52.9
Total	70	100
Ages		
15-20 years	37	52.9
21-25 years	27	38.6
>25 years	6	8.6
Total	70	100
Institution		
Moshood Abiola Poly	25	28.6
Covenant University	25	35.7
Ilaro Polytechnic	20	35.7
Total	70	100

4.2 Assessment of tertiary institutions learning adequacy

Table 2: Assessment of higher institutions learning adequacy

Lecturer Indicators	CU		MA POLY		Ilaro Poly		Overall
	Mean	Rank	Mean	Rank	Mean	Rank	Mean
The lecturers in my department teaching course attitude is very outstanding.	4.72	1 st	4.24	2 nd	4.65	2 nd	4.35
The lecturers in my department are academically and professionally qualified.	4.64	2 nd	4.48	1 st	4.60	3 rd	4.57
The lecturer in my department have a good understanding of the course they teach.	4.56	3 rd	4.16	3 rd	4.50	4 th	4.40
The lecturer in my department believes in our learning capacity.	4.12	4 th	3.96	4 th	4.70	1 st	4.23
Method of Lecturing							
The lecturer in my department are detailed in teaching.	4.60	1 st	4.12	1 st	4.50	1 st	4.40
The lecturers in my department use multimedia for teaching	4.56	2 nd	3.04	3 rd	1.75	4 th	3.21
The lecturer in my department engage us in adequate practical session.	4.56	2 nd	3.12	2 nd	4.40	3 rd	4.00
The lecturer in my department adopt problem base learning in teaching.	4.28	4 th	2.04	3 rd	4.45	2 nd	3.89
Learning Facilities							
There is fully equipped library in my institution.	4.76	1 st	2.40	1 st	4.45	1 st	3.83
My department has a fully equipped laboratory.	4.72	2 nd	1.72	5 th	4.35	2 nd	3.54
There is internet facilities in my institution.	4.72	2 nd	1.84	4 th	4.45	1 st	3.61
The reading tables and chairs in my class are adequate.	4.72	2 nd	1.96	3 rd	4.45	1 st	3.66
My class room is equipped with good reading tables and chairs.	4.68	3 rd	2.20	2 nd	4.30	3 rd	3.69
My classroom is equipped with multimedia facilities.	4.40	4 th	1.40	6 th	4.20	4 th	3.64

CU: Covenant University. MA: Moshood Abiola Polytechnic.

Table 2 shows the various learning parameters which can be used to measure adequacy of learning under three headings which are 'lecturer indicator, learning methods and learning facilities'. The various parameters are categorized under the three headings which are used to measure and compare the learning adequacy of the three selected institutions. The result in table 2 shows that Covenant University was mean values was higher compare to other institutions for the parameters under learning indicator. However, the ranking of the various parameters differs for different institutions. Covenant University respondents ranked the parameter 'the lecturers in my department teaching course attitude is very outstanding' highest with a mean score of 4.72 while the same was ranked second on the ranking scale of both Moshood Abiola Polytechnic and Federal Polytechnic Ilaro with a mean score of 4.24 and 4.65 respectively. However, it is evidenced from the result presented under the lecturer indicator for the three institutions are very outstanding as all the mean values of all the parameters used in the assessment is above 4.0. The overall mean also collaborate the former statement.

In the same vein, the parameters under learning method indicator are all outstanding for Covenant University as all the parameters mean value is above 4.0. However, in Moshood Abiola Polytechnic, aside the parameter 'lecturer are detailed in teaching' with a mean score of 4.12, all other equally relevant parameters are on mean score of 3.0 which signifies neutral on the likert scale. Such mean score can be linked to the uncertainty of the respondents of the assessed parameters in the institution. Federal polytechnic Ilaro performed well in most of the parameters under learning method as the mean score is above 4.0 except in the use of multimedia in teaching which it ranked lowest with a mean score of 1.75 which signifies 'do not agree' on the likert scale.

Under learning facilities assessment, Covenant University ranked very high in all the parameters considered with a mean score of 4.0 and above which signifies excellent performance by the institution. However in Moshood Abiola Polytechnic the reverse is the case as the mean score in all the parameters considered are between 1.0 and 2.0. Such response shows that her learning facility assessment is very porous and that can affect the student learning. Federal polytechnic Ilaro performance is excellent in all the learning facilities assessment except in multimedia facility assessment which it ranked 2.0 on the mean score which tends towards disagreement on the likert scales.

4.3 Research Hypothesis

The research hypothesis for the study is that there is no significant difference among the institutions on the assessed learning adequacy. The results is presented in Table 4.0.

Table 4: ANOVA results for significant difference among higher institutions on learning adequacy assessed

		Sum of Squares	Df	Mean Square	F	Sig.
The lecturers in my department have a good understanding of the course they teach.	Between Groups	2.280	2	1.140	2.091	.131
	Within Groups	36.520	67	.545		
	Total	38.800	69			
The lecturers in my department are academically and professionally qualified.	Between Groups	.343	2	.171	.373	.690
	Within Groups	30.800	67	.460		
	Total	31.143	69			
The lecturers in my department teaching course attitude is very outstanding.	Between Groups	3.293	2	1.646	4.980	.010
	Within Groups	22.150	67	.331		
	Total	25.443	69			
The lecturer in my department believes in our learning capacity.	Between Groups	6.543	2	3.271	5.507	.006
	Within Groups	39.800	67	.594		
	Total	46.343	69			
The lecturer in my department are detailed in teaching.	Between Groups	3.160	2	1.580	4.892	.010
	Within Groups	21.640	67	.323		
	Total	24.800	69			
The lecturers in my department use multimedia for teaching.	Between Groups	88.916	2	44.458	45.918	.000
	Within Groups	64.870	67	.968		
	Total	153.786	69			
The lecturer in my department adopt problem base learning in teaching.	Between Groups	28.136	2	14.068	24.199	.000
	Within Groups	38.950	67	.581		
	Total	67.086	69			
The lecturer in my department engage us in adequate practical session.	Between Groups	30.400	2	15.200	32.228	.000
	Within Groups	31.600	67	.472		
	Total	62.000	69			
My class room is equipped with good reading tables and chairs.	Between Groups	87.446	2	43.723	52.650	.000
	Within Groups	55.640	67	.830		
	Total	143.086	69			
The reading tables and chairs in my class are adequate.	Between Groups	112.821	2	56.411	102.287	.000
	Within Groups	36.950	67	.551		
	Total	149.771	69			
My classroom is equipped with multimedia facilities	Between Groups	124.071	2	62.036	129.887	.000
	Within Groups	32.000	67	.478		
	Total	156.071	69			
My department has a fully equipped laboratory	Between Groups	130.741	2	65.371	152.981	.000
	Within Groups	28.630	67	.427		
	Total	159.371	69			
There is fully equipped library in my institution	Between Groups	80.433	2	40.216	71.834	.000
	Within Groups	37.510	67	.560		
	Total	117.943	69			
There is internet facilities in my institution.	Between Groups	123.236	2	61.618	87.189	.000
	Within Groups	47.350	67	.707		
	Total	170.586	69			

Significant Level: 0.05

The significant difference in the three institutions was tested by setting the level significant at statistical value of 5%. The results in Table 5 shows that the significant level of all the parameters under lecturer assessment was above 0.05 which signifies that there is difference among the institutions on lecturers assessment on learning adequacy. As such the alternative hypothesis is rejected and the null hypothesis which says there is significance difference among the three institutions response on the assessment of lecturer indicator on the adequacy of learning in tertiary institutions. Under lecturing method, the only parameters above 0.05 was ‘the lecturer in my department are detailed in teaching’ while all other parameters are below 0.05. It can be concluded from the result also that null hypothesis which state

that there is no significant difference among the three institutions on all the parameters on learning method is accepted except the parameter ‘the lecturer in my department are detailed in teaching’ in which the alternative hypothesis is accepted. Under learning facilities assessment, result shows that all the parameters are below 0.05 and that signifies that alternative hypothesis is rejected while the null hypothesis which says there is no significance difference among the institutions on learning facilities on the adequacy of learning in tertiary institutions is accepted.

5.0 DISCUSSION OF FINDINGS

The study conducted shows the state of learning adequacy under the three indicators which are ‘lecturer assessment, lecturing method assessment and learning facilities assessment in three tertiary institutions. The results shows that learning adequacy under the three indicators in Covenant University are very outstanding. The outstanding capacity of Covenant University in learning can be attributed to its ownership structure as their drive is second to none.

Learning indicator assessment is excellent in Ilaro Polytechnic and also method of lecturing assessment except in the use of multimedia facilities in teaching. Such inadequacy can be attributed to institution less priority to information technology (IT) in learning. The institution also performed excellently in learning facilities assessment except in multimedia facilities availability which is earlier observed.

Moshood Abiola Polytechnic lecturer indicator assessment is excellent why method of lecturing and learning facilities are porous. The porosity in method of lecturing assessment and learning facilities assessment can be affiliated to lack of training of lecturer and poor funding of the institution. The study also revealed that there is no significant difference among the selected tertiary institutions on lecturer indicator assessment. The study further revealed from the tested hypotheses that there is significant difference among the tertiary institutions on lecturing method and learning facilities.

6.0 CONCLUSION AND RECOMMENDATION

It is evidenced from the study conducted that there are differences among the tertiary institutions on the assessment of learning adequacy. Covenant University learning adequacy assessment under lecturer learning indicator, method of lecturing and learning facilities report are excellent compare to the other two tertiary institutions which are Moshood Abiola Polytechnic and Federal Polytechnic Ilaro. Among the two institutions Moshood Abiola Polytechnic is highly porous in method of lecturing and learning facilities measurement and performed better in lecturer indicator assessment. Federal polytechnic Ilaro is highly adequate in lecturer indicator assessment while it shows some measure of inadequacy under method of lecturing and learning facilities. The inadequacy observed in Ilaro Polytechnic is attributed to lack of multimedia facilities as revealed from the study.

In concise, the study shows some gaps in some of the selected institutions on learning adequacy assessment. The following recommendations are hereby made to address the observed gaps from the study;

- I. Government should give education priority in her budget allocation as lack of funding has contributed to institution inability to procure facilities that can aid students learning ability.
- II. There should be collaboration among the institutions as to strengthen each other weakness.

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Learning Difficulties in the Study of Structural Analysis in Tertiary Institutions

Ignatius O. OMUH

*Building Technology Department
Covenant University (NIGERIA)
ignatius.omuh@covenantuniversity.edu.ng*

Lekan M. AMUSAN

*Building Technology Department
Covenant University (NIGERIA)
lekan.amusan@covenantuniversity.edu.ng,*

Rapheal A. OJELABI

*Building Technology Department
Covenant University (NIGERIA)
rapheal.ojelabi@covenantuniversity.edu.ng*

Adedeji O. AFOLABI

*Building Technology Department
Covenant University (NIGERIA)
adedeji.afolabi@covenantuniversity.edu.ng*

Patience F. TUNJI-OLAYENI

*Building Technology Department
Covenant University (NIGERIA)
pat.tunji-olayeni@covenantuniversity.edu.ng*

ABSTRACT

In Education lies the bedrock of the future. Sustainability in education can be achieved through the transfer of knowledge and technology to the next generation and one of the vital ways of achieving this is through teaching in the classroom. Without proper dissemination of these knowledge and skills, there is a disconnection and the students are left without the proper foundation they should have in the first place. Several studies have shown that student experience difficulties in mathematical based courses. This study sought to identify the challenges students of structural analysis face and the factors responsible for these challenges. A survey of three institutions was carried out and data was obtained through the distribution of well-structured questionnaires to students that offered structural analysis from University of Lagos, Covenant University and Yaba College of Technology. Data obtained from this survey were analyzed using Statistical Package for the Social sciences. The results were presented in form of frequency tables using relative index importance index to get a clearer view of the most significant factors. Results from the factors affecting students learning difficulty of the course showed that, poor background (in physics & mathematics) from secondary school made the course difficult for them, their lecturers mode of delivery made the course uninteresting, and also the class sizes were also a problem. To curb this situation, it was recommended among other things, that lecturers should try as much as possible to deliver the course in creative ways that would entice the interest of the students. Secondary and primary school education should be improved, by investing in continuous workshops, seminars and training of teachers to improve their productivity, and lastly, public universities should admit the number of students they have enough resources to cater for, so as to reduce the class sizes.

Keywords: Education, mathematical based, learning difficulties.

INTRODUCTION

There are several factors that have been identified as contributors to students learning difficulties in which includes, peer pressure, parental and home background, teacher's attributes, school environment and socio-economic status of the student (Riliwani, 2014).

However, it attention has been paid to the attributes of teachers as a critical factor influencing the academic performance of students. It is believed that the students success is hinged on the effectiveness and efficiency of the

teachers (Sabitur and Nuradeen, 2010). Therefore, how knowledgeable a teacher is and how well the teacher is able to adopt the apt strategies will play a significant role in the teaching process (Zarei and Sharifabad, 2012). Parental and home background is another significant factor, because according to a saying charity begins at home, so no matter how effective or ineffective a teacher might be, the background given to a child (student) would always serve as a pulling or pushing factor.

Furthermore, the school environment is also another critical factor affecting learning especially in the developing nations of the world, due to poor facilities and lack of appropriate teaching aids. For examples, there are some public schools in Nigeria that cannot afford enough chairs for their students, hence some of them have to stand for hours stretch receiving lectures, some institutions do not even have the right textbooks and resources to stimulate the interest of the student, also other environmental factors like improper ventilation, inadequate lighting and a host of them contribute to the difficulty in learning. This singular factor is what distinguishes the performance of students in Africa to other developed nations of the world (Riliwani, 2014).

Research problem

Structural analysis being a combination of two core science subjects which are mathematics and physics have imposed a lot of difficulties on student (Johnson and May 2008), this proposition has been backed up by several researches like the engineering council of British (2000), which explains that Academics may encounter challenges of a weak foundation they may have had in mathematics and physics prior to their admission into a university. Johnson and May (2008) further expressed that one of the challenges encountered is the fact that an increasing number of students join a discipline without having an appropriate understanding of mathematics.

It has also been observed that architectural students have the highest number of failure in structural analysis. According to Herr (2013) the main challenge of structural education in architecture are the students trying to incorporate structural design into their applied design skills. This research sets out to empirically answer the bogging question of how students really respond to structural analysis and the difficulties encountered.

Significance of this Study

Every sector in the world is experiencing tremendous changes, including the construction industry. Nowadays constructions which were previously deemed impossible are being made possible due to a better understanding of structural analysis and design. Since a good understanding of structural analysis is one of the brains, behind the great innovation in the construction industry, then it is important that students have a good knowledge of the course, so that they can become relevant in the construction industry, hereby having a successful career. This study would trigger this, by helping the student to identify what they feel about the course, the challenges encountered, and then appropriated solutions will be provided.

Furthermore, this study is of inestimable value to the respective institutions, as it will help them identify what student think about the course, the challenges the students are encountering, hereby creating a platform for them to know how to increase productivity hence improve the performances of the students at the same time.

Lastly, this research work will help the construction industry and society at large to boast of well-rounded graduates, who can withstand the ever-increasing changes taking place in the construction industry, through the adequate knowledge and application of structural analysis

Research Questions

1. What are the factors responsible for difficulties student face in learning structures and determine the severity ranking?
2. What are the agreement ranking of students' responses and factors?

Research Objectives

1. To identify the factors responsible for difficulties students, face in learning structures and determine the severity ranking.

2. To determine the agreement ranking of the learning difficulties students come across in the study of structural analysis, among Architecture, building, civil and quantity surveying programs.

LITERATURE REVIEW

Structural analysis is an ancient craft and has been known to humankind since the onset of civilization. The earliest structures have included the pyramids built by Egyptians around 2000 B.C, Parthenon at Athens (2500 years old), these structures have gradually progressed to the Taj Mahal (350 years old), and Eiffel tower (120 years old) thereby testifying to the skill and the advancement human achievement. That these monuments are still standing speak to the great accomplishment of the craftsmen in the construction of large structures which invariably involve analysis and design.

Amazingly, these monuments were constructed not only without any computation but also without any theoretical concepts as we know it today (Pedron, 2006), but these masters used the knowledge of rules of proportion developed through experience and practical training. These rules of proportion were what developed over the years to form the fundamentals of mathematics and physics, so to say that these great feats achieved by these outstanding craftsmen were a proper understanding of mathematics and physics would not be an understatement. Having identified evidences from researchers that a faulty foundation in mathematics and physics, amongst others are the problems facing students' structural analysis skill, then it is best to deduce the causative factors.

Learning is difficult to define and there is scarcely one universally acceptable definition that has been acknowledged by researchers, theorists and practitioners (Shuell, 1986). In the same manner, students also vary, and hence there are differences in the difficulties encountered by them. In a research conducted by Felder and Brent, (2005) they noted that different students can be motivated by different things and each student possesses a unique attitude towards learning. They further observed that no two students are exactly the same as they have different backgrounds and upbringing and characteristics that make their individual approaches to studying unique.

The diversities of students' approach to learning and orientation to studying were examined by (Irfan and Shabana, 2012) they identified three approaches to learning, the surface approach, the deep approach and the strategic approach. Students who adopt a surface approach to learning usually dwell on facts but do not delve deep to understand reasons behind the facts such as origins and limitations. They are motivated to study solely to avoid failure thereby making their motivation extrinsic. The students who adopt a deep approach to learning go beyond memorizing the facts but rather dwell on understanding the intricacies of the material they are studying. Their desire to learn more is sparked by intellectual curiosity. This motivation is indeed intrinsic. The third group which consists of students that adopt the strategic approach to learning are a category that are efficient and well organized in their efforts, they know where they are in their studying and know the effort they need to put in to achieve the success they desire and attain their ambition.

Very obvious that if the difficulties encountered by students have different diversities, also parameters in judging the students' performances should also vary, the analyses of the students' performance would then help to get to the root of the difficulties student encountered.

Hansen, (2000) outlined two factors that affect students' academic performance. They are the internal factors which include class size, learning facilities, environment of the class, innate ability of the student, motivation, complexity of the course material, teachers' role in the classroom, technology used in the class and the exam system; and external factors, which constitute social economic factors, extracurricular activities, family problems. Further research conducted by Bangbade, (2004) shows that students performance may also depend on other factors such as gender and age differences.

School environment when analysed has a great role to play in difficulties students' encounter, the more conducive the environment, the lesser the difficulties students' encounter. Social environment could mean a conducive learning environment, availability of good teaching aids (computers, teachers, laboratories, libraries etc.) For example, temperatures above 80 degrees tend to produce harmful physiological effects that decrease work efficiency and output.

It was noted further, that poor ventilation interferes with students' ability to understand. Also decaying environmental conditions such as poor lighting, inadequate ventilation, inoperative heating and cooling systems etc. can affect the learning of students i.e. in any learning environment, comfort is vital to improving student's assimilation rates. Overcrowded institutions are a serious problem in many school systems. Crowded classroom

conditions not only make it difficult for students to concentrate on their lessons, but inevitably limit the amount of time teachers can spend on innovative teaching methods.

In a study on class size, (Ronald et al, 2001) observed that changing how students learn can be achieved by simply changing class size because it is believed that class size is pivotal to achieving a good learning experience. While the class size is important, there are other factors on which learning is dependent. These factors include the background of the student and the influence of the broader community.

Interest in the job fuels passion for the job and a lack of interest in a job will lead to the inability to be good at it. There is a relationship that exist between a teacher's interest in the job, knowledge of the the subject, ability to communicate effectively and the overall academic performance of the student (Riliwani, 2014). A research by (Wenglinsky, 2000) on how a teacher's experience affects a student's ability to learn showed that a positive relationship exists between the teacher's years of experience and effectiveness. This implies that an inexperienced teacher is less effective in passing knowledge across to students. Other researchers (Starr, 2002), (Schacter and Thum, 2004), Rivkin, Hanushek, and Kain. 2000). Also studied the relationship between students' academic performance and the teachers' skills and attribute and it was discovered that there exist a strong relationship between the three variables.

According to a research by Umar *et al.*, (2010), it was explained that cults, which are associations with organized structures have a way of looking out for the interest of their members can influence and impact positively or negatively the performance of a student who is its member. These cults entice prospective members with the perceived benefits they offer such as protection, popularity and even sometimes assistance in school fees payment. The problem usually arises when the student member does not strike a balance between the demands of his studies and the demands of the cult association because most times the promised benefit never get to the student members.

It was argued that students make educational decisions by calculating their costs, anticipated benefits, probability of success, and the attractiveness of alternative options (Breen and Goldthorpe, 1997). Because these aspects vary among socio economic status (SES) groups, the degree to which students of different socio-economic backgrounds view schooling as desirable varies as well, it was also maintained that student begin to understand at an early age about how the society is structured. They begin to become to be aware that the society rewards people or individuals of different SES differently, therefore these students of low SES families realize that they are likely to be exempted or excluded from desirable job and hence, they go through a process of disillusionment. As a result, these students expect a wide gap with age due to students' being less motivated and placing efforts into their academic activities.

METHODOLOGY

Area of study

The study was conducted in Covenant University, Ota and two Lagos universities, the first one which is University of Lagos, Akoka and Yaba School of technology. The reason for choosing these other two institutions in Lagos state universities was because one represented a federal government institution while the other represented a state institution.

Population of study

The targeted population for this study were students in 100-500 level studying any construction related courses basically architecture, building technology, Civil Engineering and Quantity surveying in covenant university, university of Lagos, and Yaba College of technology.

Data collection instrument

Data used for this research were obtained from using multiple choice structure questionnaires to answer the question of student's response to calculation based courses. The questionnaire was adopted from a rigorous review of the literatures used. The questions were in a 5-point Likert format ranging from (SD= strongly Disagree, D=Disagree, U= Unsure, A=Agree, SA=Strongly Agree) which were used to measure the respondent response and factors affecting the learning of structural analysis as a case study. the questionnaire consists of two sections.

Sample size and administration of the research instrument

A sample consists of selected elements, subjects or observations from a given population. It is a finite part of statistical population of which properties are studied to gain information about the whole population. For the purpose of this research work, a survey was conducted and it was realized that all together in the three institutions

there were more than a thousand students in the courses. Therefore, for this research work 195 questionnaires were distributed and 164 were retrieved which is 84.10%.

Research instrument for data analysis using Statistical package for social sciences (SPSS)

Statistical package for social science (SPSS) was used to process and analyse the information obtained from the questionnaire survey. Mean and agreement ranking were used to achieve objectives 2 and 3 as stated in chapter one by the use of SPSS. The result gotten would be made in a pictorial form for example pie chart and also frequency table for clarity of the analysis of the obtained data.

Descriptive tools

These are the tools used for describing the entire population or samples. This helps to show the relationships among the variables and other significant features. These tools are very useful in conveying quick impression of any clustering variations and possible trends in the value of variation. An example of such tools collected in the analysis of this data includes charts, frequency, percentages and measure of central tendency.

ANALYSIS AND DISCUSSION OF RESULT

Demographic distribution of respondents

In the first section, the personal data of structural analysis students were acquired through the self-administered questionnaires. Information such as gender, institution, levels and departments were analysed. The following were discovered

Covenant University had 77 respondents; university of Lagos (UNILAG) had 47 respondents while Yaba School of technology had 40 respondents. The following data shows that Covenant University had the highest respondent for the study, owing to the fact that it was the researcher's institution.

In order to get accurate information, and views from different sides, the entire department offering structural analysis were included in the research work. From the figure above building technology had 36.27% of the respondents, followed by civil engineering with 33.33%, also Architecture had 25.49% and lastly quantity surveying with 4.90% of the total respondent. The department of building technology has the highest number of respondents for this research work.

It was also observed that 100 level respondents had the lowest percentage at 4.90%, followed by 200 level respondents with 7.84%, 300 level respondents with 17.65%, 400 level respondents at 24.51%, then 500 level respondents which carries the largest percentage at 45.10%.

The reason 500 level respondents had the largest percentage was because the researcher assumed that, the respondents had spent quite a considerable time doing structural analysis, therefore with their experience they could provide accurate information.

The gender distribution of the respondents was as follows; it indicated that the male gender has 65.69% while the females have 34.31%. From this distribution, the male gender had a greater population than the females, the reason for this is not far-fetched as the construction industry is male dominated.

Factors responsible for learning difficulties amongst covenant university respondents, University of Lagos and Yaba College of Technology.

The factors were divided into positive and negative factors with the positive affecting their success and understanding of the course, structural analysis. The negative factors on the other hand related directly to the reasons for the difficulties experienced in the study of the course. The factors were ranked according to the responses obtained from each university. And the results are displayed in tables 1 and 2 below.

Table 1 Negative factors causing learning difficulties amongst covenant university, University of Lagos and Yaba College of Technology respondents.

FACTORS	Covenant university	Rank	UNIVERSITY OF LAGOS	Rank	YABA COLLEGE OF TECHNOLOGY	Rank	Remark
The prior background I had makes it difficult for me to understand structural analysis	3.77	1 st	3.59	2 nd	2.33	7 th	Negative factor
The Lecturers' mode of delivery makes the course uninteresting	3.56	2 nd	3.38	3 rd	2.5	5 th	Negative factor
The class is too large and I am unable to follow	1.85	7 th	3.62	1 st	4.04	1 st	Negative factor
I have a solid mathematical background but struggle with the basics of structural analysis	3.4	4 th	3.28	4 th	3.58	3 rd	Negative factor
I have a poor mathematical background and it makes it difficult for me to understand the subject	3.25	6 th	2.97	7 th	3.63	2 nd	Negative factor
My physics background from my secondary school education is poor and therefore an obstacle to understanding structural analysis	3.27	5 th	3.28	4 th	3.28	4 th	Negative factor
The lecturer is not able to communicate the subject area clearly and I find it difficult to keep up	3.5	3 rd	3.28	4 th	2.38	6 th	Negative factor

From the table 1, it can be observed that the major problem encountered by the public institution is the class size while for Covenant university that represents a private institution, the major problem is the prior background of the student as the class sizes are regulated. Closely related in agreement is the ability of the student to relate structural analysis with his/her basic knowledge of mathematics and physic. Despite the solid mathematical background, they still struggle with understanding basic structural analysis. This problem of not being able to understand the course could be closely tied to the mode of delivery by the lecturers and the inability of the lecturers to communicate the subject area. Poor mode of delivery will fail to spark interest of students and that will translate to their poor performance in the course.

Table 2 Positive factors causing learning difficulties amongst covenant university, University of Lagos and Yaba College of Technology respondents.

FACTORS	Covenant university	Rank	UNIVERSITY OF LAGOS	Rank	YABA COLLEGE OF TECHNOLOGY	Rank	Remark
I have no problem understanding the basic structural concepts	2	6 th	3.38	1 st	3.5	2 nd	Positive factor
The Lecturer has no problem communicating and expressing himself/herself	3.27	3 rd	3	2 nd	3.54	1 st	Positive factor
There are practical examples provided in class that makes it easy to understand the concepts and principles of structural analysis	3.29	2 nd	2.79	5 th	2.79	6 th	Positive factors
The lecturer takes time to solve examples in class to give us a better understanding of the subject area	3.6	1 st	3	2 nd	3	5 th	Positive factor
The tools for teaching structural analysis are available and we are exposed to them	3.19	4 th	2.69	6 th	3.08	4 th	Positive factor
We are exposed to the use of computer softwares to aid in structural analysis	2.24	5 th	3	2 nd	3.33	3 rd	Positive factor

The table 2 shows a summary of positive factors ranked amongst Covenant University, university of Lagos and Yaba School of technology. From the above table, it can be observed that the ability of the lecturer to communicate

the subject area and expose the students to examples ranked highest among Covenant University responses. This will help with the students' performance in the course. In the public schools, their main concern is understanding the basics of the course but in the private school, their understanding was hinged on the lecturers taking time to explain and work some example in order to help with their comprehension.

CONCLUSIONS

1. The major problem most students are facing was as a result of faulty background, especially in the core science subjects (physics, mathematics, chemistry) which is a stumbling block to them understanding the course
2. Class sizes is a problem, especially to the public universities as most of them inferred that they are unable to follow up and concentrate when lectures are going on, due to the large crowd. This is in agreement with (Ronald et al, 2001; Westerlund, 2008; Bedard & Kuhn, 2008)
3. A teacher's ability to communicate the subject area and engage the class will help with the students understanding the course and performing well in the course. This is in agreement with (Bangbade, 2004; Starr, 2002; Schacter and Thum, 2004; Rivkin, Hanushek, and Kain. 2000).
4. Exposure of students to computer aided software, that would help their understanding and appreciation of the course.

RECOMMENDATIONS

The following are recommended to minimize learning difficulties students encounter in construction measurement.

1. Secondary and primary school educations should be improved, by investing in continuous workshops, seminars and training of teachers to improve their productivity. Also there should be continuous monitoring and evaluations of teachers' performance, in order to ensure that students are well informed.
2. Public universities and higher institutions should restrict their admissions to the number of students they have enough resources to cater for, so as to reduce the class sizes. Should in case they want to admit quite a number of students they should ensure that they are divided into groups and given different lecture times.
3. Lecturers should try as much as possible to deliver the course in creative ways that would entice the interest of the students. This entails a balance between theory and practical, in which could be achieved by showing students life model of how some structural concept works. Also the classes should be interactive so as to reduce anxiety and fear.
4. Also, there should be provision for computer aided software, examples of which are. These computer soft wares simplify the work of the lecturer and hastens the understanding of the students, as it translates the whole structural concept from abstract to reality, boosts the creativity of the student, and lastly helps students to solve real life problems.

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Learning for Placement.Fostering Innovation in the Construction Sector Through Public-Private Partnership in the Emilia-Romagna Region

Marcello BALZANI

*Laboratory TekneHub, University of Ferrara,
Clust-ER Construction,Emilia-Romagna High Technologies Network,Italy
marcello.balzani@unife.it*

Fabiana RACO

*Laboratory TekneHub,University of Ferrara ,Italy
fabiana.raco@unife.it*

Theo ZAFFAGNINI

*Department of Architecture, Laboratory TekneHub ,
University of Ferrara, Italy
theo.zaffagnini@unife.it*

ABSTRACT

The Fourth Industrial Revolution increasingly deals with the application of new abilities, skills and workforce strategy as well as the introduction of new integrated technologies to support both productivity and innovation. The current research project carried out in collaboration between TekneHub, a research laboratory of the Emilia-Romagna High Technology Network, the Department of Architecture (DA) of the University of Ferrara and national and international public and private parties has focused on knowledge updating in the construction sector. The study was based on the application of both collaborative *Integrated Project Delivery Methods* (IPD) and *Value-Chain Analysis* (VCA), which allow the most effective learning strategies to be identified in relation to industry needs, academia capability and placement requirements. Managerial knowledge and data based decision-making are certainly emerging as key findings in order to drive the Framework of Qualifications for higher education towards more contemporary and effective results.

Keywords: Construction management / Innovation management / Integrated Project Delivery Method (IPD) / Skills for Innovation in Higher Education.

INTRODUCTION

To ensure that new opportunities for increasing the productivity and the competitiveness of the construction sector determine a Fourth Industrial Revolution, it is not enough to introduce new technologies, such as automation in production processes and Internet of Things (IoT), or Advanced Materials.

At both national and European level, the construction industry has to deal with the inadequacy of job organization and skills in key areas, such as managerial knowledge, basic financial knowledge (ERA SGHRM, 2011) and data based decision-making, that are becoming even more crucial to make a new level of productivity effective. The upgrading of skills would allow the industry to “significantly contribute to job creation, by increasing its activity in some very promising areas such as the renovation of buildings” (EC, 2012, p.2).

Due to its slow innovation adoption, at both technological and organizational level, and the lack of collaborative work, associated with a variety of site-based project sizes, the construction sector has always been characterized by insufficient sharing of best practices among all the players and stakeholders involved, as often experienced in the Italian setting. Consequently, huge waste is still observed along the construction value chain.

“One reason for the industry’s poor productivity record is that it still relies mainly on paper” (McKinsey, 2016, p.7). Moreover, the fact that the construction industry invests less than 1% of net sales in R&D (EC, 2016) must be taken into account in order to understand the lack of innovation and technological progress.

For this reason, thanks to the reforms of the UK Government, the European States have recently undertaken actions to enable the development of a digital and automated production environment. In fact, since 2014 several codes and standards have become law and are being implemented. These include the sets of rules which refer to the adoption of Building Information Modeling tools; a set of ICT integrated tools for collaborative design and

management.

The first results of an ongoing research project can be found below, which aims both to measure the impact of digitization and automation in the construction sector and the reflections (effects) on the higher education system in the Emilia-Romagna Region, which is part of a national industrial cluster, strictly linked with the European market.

Considering the complexity of the players involved throughout the industry, the research project was based on the application of both collaborative *Integrated Project Delivery Methods* (IPD) and *Value-Chain Analysis* (VCA) to access, through quantitative and qualitative analysis, the correspondence between industry needs and public sector capability offering adequate higher education solutions to address placement opportunities.

The first results of the research project show that an integrated and collaborative approach to the upgrading of higher education solutions, helps to identify more effective strategies, in order to support the introduction of new skills and technologies in the construction sector.

THE STUDY: SKILLS FOR CONSTRUCTION INDUSTRY DIGITIZATION

Despite the increasing demand of digitized processes in the construction industry, “the sector is among the least digitized” (McKinsey, 2016, p.2). While the construction process is becoming more complex due to the amount of specialized knowledge that is necessary to effectively put a project in place, cost and schedule overruns are the norm.

This research study considers knowledge and Information Management (IM) as assets which are fundamental for the efficient and effective delivery of a project and which lead, if well managed, to better outcomes, including:

1. Increasing collaboration;
2. Improving the quality of data-decision making;
3. Enhancing the speed of decision-making;
4. Reducing duplication of effort;
5. Increasing business resilience.

The aim of the project is to investigate the quality of the regional higher education offer in order to verify the presence of knowledge areas such as the capacity to manage big data, creative thinking, complex problem solving and the risk management approach which have been identified as drivers for making the new industrial revolution effective.

In fact, according to *The Future of Job Report* “in many industries and countries, the most in-demand occupations or specialties did not exist 10 or even five years ago” (WEF, 2016, p.1) and one job type is mentioned, among others, across all industries and geographies: data analysts. In this new scenario, the skills set is expected to change rapidly according to industry needs so the “exposure to industry and other relevant employment sectors” (PIDT, 2011) becomes crucial right from the early stages of education, with particular reference to levels five to eight of the European Qualification Framework. It should be stressed that “the term industry is used in the widest sense, including all fields of future workplaces and public engagement, from industry to business, government, NGOs, charities and cultural institutions (e.g. musea)” (ERA SGHRM, 2011).

The finding of the study sample was based, first, on the definition of the target involved. In this study, higher education courses such as bachelor higher national diploma, bachelor, master and doctorate courses for architects and engineers were considered as main areas of the research. (Figure 1)

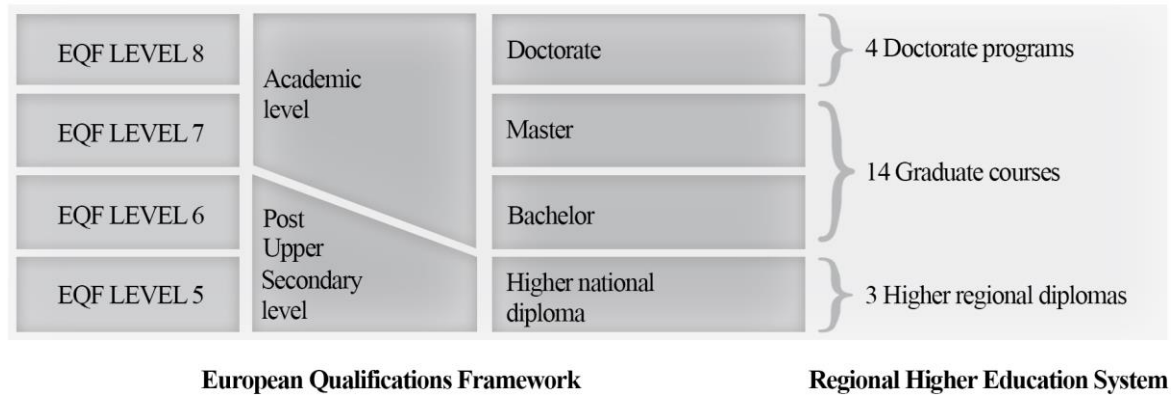


Figure 1: European Qualifications Framework and regional higher education system. Research domain.

Secondly, criteria such as the representativeness from the territorial point of view were considered. In fact, higher education courses for the construction sector as well as continuing education and on the job training activities are an integral part of the regional education system.

However, despite this scenario there is currently no common data set of information, either at regional or national level, which could allow the most effective strategies to be identified in order to meet the new placement opportunities. A long-term fallout of the study is certainly providing the regional sector with a comprehensive database of information regarding the quality of supply and demand of professionals in the construction sector.

This purpose can only be pursued thanks to strong cooperation between the public and private players involved. In fact, the research project is carried out in collaboration between the regional “Association Construction Clust-ER”, which is regional a public-private initiative, the TekneHub centre, a research laboratory of the Emilia-Romagna High Technology Network, the Department of Architecture (DA) of the University of Ferrara and other regional, national and international public and private parties. (Figure 2)

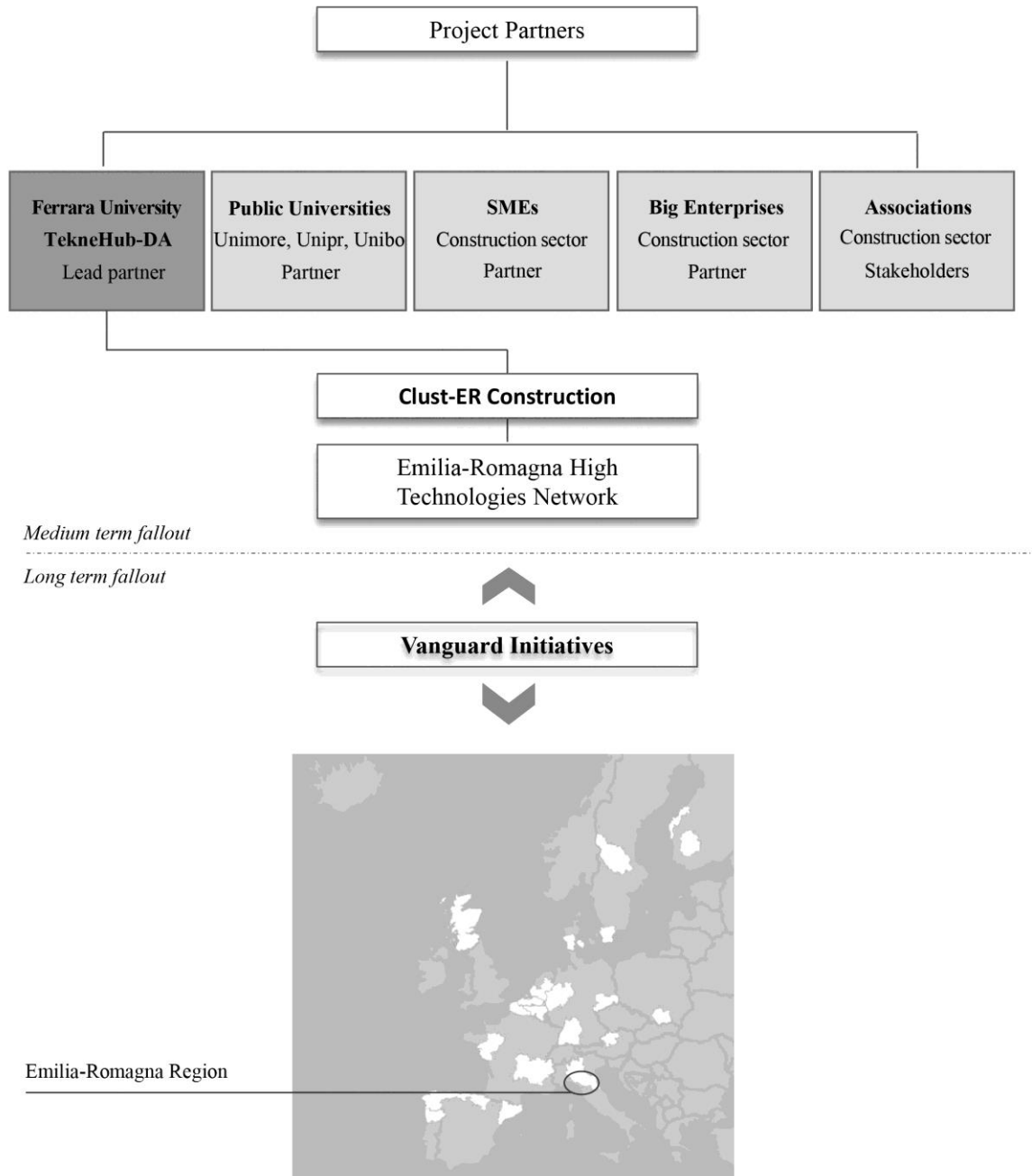


Figure 2: Projects partners. All the actors and stakeholders were involved at the early stage of the project

METHODOLOGY

As stated so far, the construction value chain is characterized by complexity, uncertainty, a fragmented supply chain, and short-term thinking which are obstacles for long-term innovation and learning (Oesterreich, Teuteberg, 2016, p. 123). However, Europe's Construction Value Chain (CVC) is a key industry, which accounts for 7% of European GDP, gross domestic product, and employs 11 million people.

Industry 4.0 requires, on the other hand, shared data-based knowledge which can only be reached through comprehensive data mining, data analysis and a risk management based approach along the entire value chain. As a result, the ability to manage this quantity of data became of crucial importance.

Subsequently, the research questions are as follows.

Research question 1: What impact does Industry 4.0 have on the regional higher education system in terms of

updating skills and competencies? (RQ 1)

Research question 2: Are regional and national Qualification Frameworks consistent with the needs of the current construction industry? (RQ 2)

Research question 3: Which teaching methods are suitable with reference to the target of the end users involved? (RQ 3)

Research question 4: Which new research areas are supposed to be of great importance for the future of the regional construction sector? (RQ 4)

During the initial stages of the research, intensive brainstorming activity was conducted with all the stakeholders involved and, within the IPD methodology, the research indicator sets were defined, such as:

- The target of students/end users involved;
- The set of skills and competencies related to the digitization process of the construction industry;
- The regional and National Qualifications Framework;
- The European Qualification Framework.

Furthermore, for the purpose of answering research question 1, the whole set of higher regional diploma, graduate, postgraduate and doctorate courses is undergoing analysis with respect to the following parameters:

- Basic project management knowledge;
- Advanced project management knowledge applied to specific subjects, areas and phases of the value chain;
- Basic risk management knowledge;
- Advanced risk management knowledge applied to specific subjects, areas and phases of the value chain;
- Data mining based knowledge;
- Ability to manage data interoperability;
- Competencies in terms of human resource management;
- Transferable skills (ERA SGHRM, 2011);
- Skills from the knowledge based economy such as communication, entrepreneurship, IPR, ethics and standardization (ERA SGHRM, 2011).

To answer research questions 2 and 3, four pilot projects have been put in place and are under evaluation, such as: Post-graduate courses in the field of digitization (target: BIM manager and BIM coordinator for public and private sectors); (Adoption of) Specific PhD training paths in the field of collaborative design and management; Program of lectures in the field of digitization (target: professional development and continuous improvement)

Research in the field of BIM impact on design quality and process management (partners involved: private and public players). Meanwhile, the three main regional construction value chains have been taken under evaluation in relation to RQ 1, 2 and 3 in order to answer to question 4.

RESULTS AND LONG TERM FALLOUT

The introduction of digitization tools and methods could represent a great opportunity for improving the productivity of the construction sector. However, significant updating of skills is needed as well as ways of sharing professionals' knowledge among all the players in the construction sector.

With reference to the construction industry, the regional higher education system is characterized by:

- 3 higher regional diplomas;
- 14 graduate courses;
- 4 doctorate programs. (Figure 3)

Despite the high level of quality of the regional training offer, since 2006 the University of Ferrara has been the top University among national graduate courses in architecture (CENSIS, 2017). The research project made it possible to verify a lack of digital collaboration based knowledge issues within the courses, as mentioned before. The analysis of the regional education system also demonstrated the almost total lack of project management based knowledge even within five years courses.

In fact, there are huge numbers of courses in areas such as digital representation, virtual modeling for architectures and engineering, integrated ICT technologies for survey, 3D survey, GIS and high quality doctoral research on BIM, Big-Data management, 3D Printing tools for architecture and Artificial Intelligence tools and so on. On the other hand, the teaching of collaborative work tools and methods has not been introduced yet.

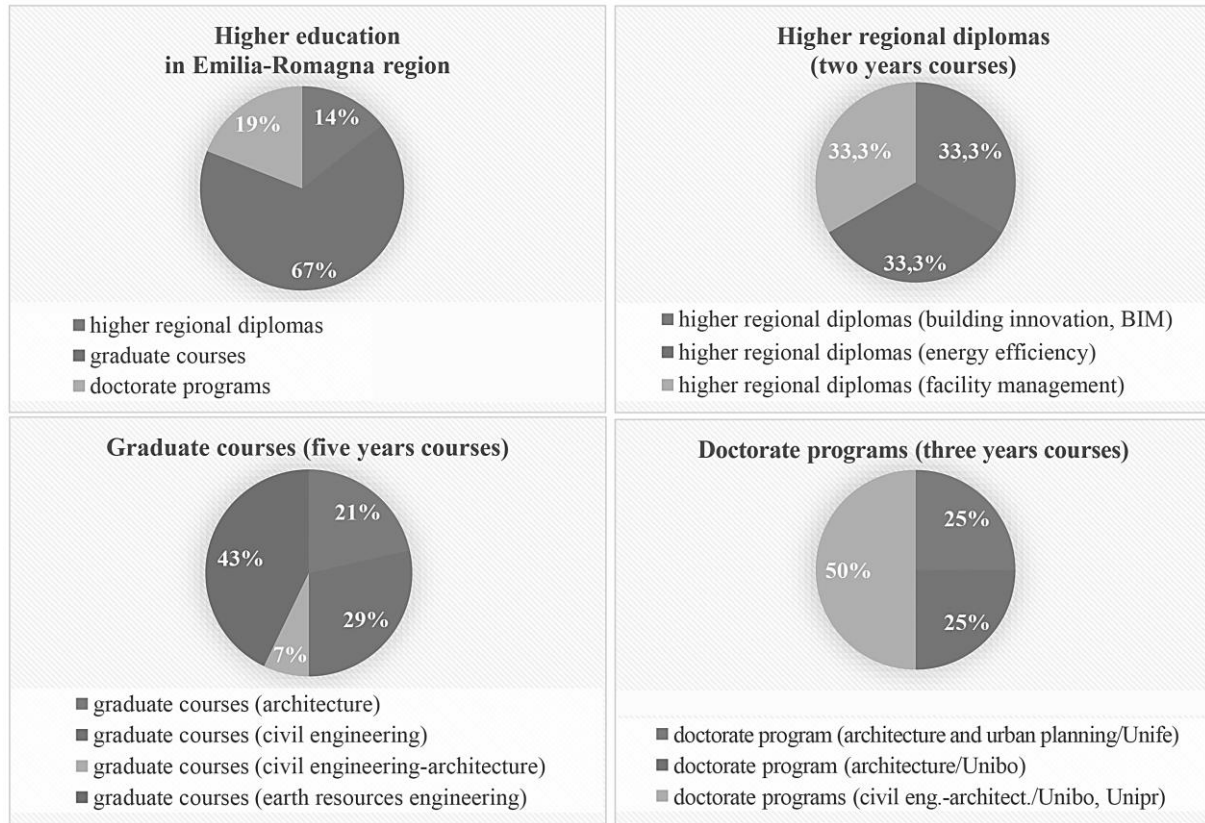


Figure 3: Emilia-Romagna higher education system.

However, with reference to the New Italian Procurement Code the following knowledge areas also need to be considered in order to achieve construction sector digitization:

- Strengthening the digitization of surveying and diagnostic processes;
- Supporting Public Procurement through data based decision-making processes;
- Developing a New Project Management approach for the construction sector (IM, Information Management and BIM, Building Information Modeling).

Furthermore, especially in the field of managerial knowledge and data-based decision making the lack of basic knowledge in master's courses is observed. This sort of difficulty can be properly managed through the introduction of project management knowledge at the beginning of five year courses. As a result, it would be possible to adopt more effective strategies, such as an inductive approach and on the job training, in post-graduate courses.

In conclusion, while the most important medium-term fallout is updating the National Qualification Framework there are other main goals to be achieved within three to five years:

1. Updating existing training courses, in specific areas, with reference to the new qualifications identified;
2. Scheduling the adoption of specific training methods (deductive training activities, on the job training etc.) to be applied in order to rapidly reach the expected target.
3. Updating bachelor, master, PhD programs (managerial knowledge, data based decision-making methods and tools, risk management, skills to enhance interactions between academia and Industry, awareness of financial tools)
4. Making post-graduate courses more effective (inductive approach, on the job training, etc.)
5. Strengthening the partnership between the public and private sector in the field of digitization in the construction industry.

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Learning Geometry Through Mathematical Modelling: An Example With Geogebra

Maria Giovanna FRASSIA

*Department of Mathematics and Computer Science
University of Calabria
Italia
frassia@mat.unical.it*

Annarosa SERPE

*Department of Mathematics and Computer Science
University of Calabria
Italia
annarosa.serpe@unical.it*

ABSTRACT

This paper is in line with the critical thinking and reflection process on the role of mathematical modelling with the use of technology in mathematics education. After some considerations about the teaching - learning of Geometry in Italian secondary schools and the analysis of the theoretical framework inherent mathematical modelling, the paper will illustrate a practical, coherent example of a classroom activity. Starting from a real object, the activity develops into mathematical modelling - that explores meaningful properties and concepts - which allows the simulation of a computer prototype in the dynamic geometry environment GeoGebra.

INTRODUCTION

Mathematical modelling is one of the topics in mathematics education, which has been the object of debate particularly in the last few decades. In classroom practice all over the world, however, modelling still has a far less prominent role than is desirable. The main reason for the gap between the goals of the educational debate and everyday school practice is that modelling is difficult both for students and for teachers. Today more than ever before, the teaching and learning of Mathematics play a crucial role in shaping thinking and reasoning as well as impacting on the whole personality. That is why we firmly believe mathematical modelling ought to be included in an updated mathematics secondary school curriculum as a sound basis for further education.

The International Commission on Mathematical Instruction (ICMI) has been promoting discussion on this topic at international level for some time (Blum et al., 2007; Stillman, 2013 and 2015; and many others), stressing - among other things - that teaching Mathematics must take into consideration not just the cultural role of the subject (which is generally accepted), or the reasons which consistently reinforce it in an ever - changing society, but also how school education is structured, with its procedures, trends as well as its restrictions.

Teaching while keeping in mind the mathematics-real world binomial signifies promoting active learning in class, turning studying into a process of discovery, thus aiding the understanding of mathematical concepts (Niss, 2003); moreover, it means providing the learners with the chance of cognitively reconstructing mathematical structures which echo and enhance students' natural cognitive structures, especially perceptive-motor ones (Gallese, & Lakoff, 2005).

For instance, in the teaching of Geometry the use of the Dynamic Geometry Software (DGS) continually opens up new didactic perspectives because it privileges the constructive aspect of the subject while at the same time maintaining the same degree of deductive accuracy, clarity of hypothesis and consequences pertaining to the discipline (Hannafin et al., 2001; Hohenwarter et al., 2008; Leikin et al., 2013). Thanks to the DGS, the graphic - constructive phase - both before the acquisition of some concepts and geometric properties, and afterwards as verification and/or in-depth analysis - greatly helps didactics, as it lends itself both to visualization and exemplification and/or exploration.

The real world stimulates both the connection with "significant geometric properties" (Enriques, 1921), and their simulation by means of modern technological tools. Indeed, it ought to be remembered that Geometry originated as modelling of the physical world and its surroundings. In the Italian school, the teaching of geometry has progressively endorsed the formal aspect of the subject, "de-contaminated"- so to speak - of even the smallest figural and constructive element. On the contrary it has been appropriately and explicitly claimed that 'geometrical concepts should not overlook the dual conceptual and figural aspect' (Fischbein, 1993), therefore it is advisable to incorporate both into everyday teaching, else geometry teaching will fail to contribute to informed learning. This paper illustrates an example of mathematical modelling in secondary school with the aid of the DGS GeoGebra.

THEORETICAL FRAMEWORK

The inclusion of modelling in school Mathematics curricula is crucial for the development of problem solving

skills, and promotes a reflection on the relationship between Mathematics and sensible reality (Gallegos, & Rivera., 2015).

A real problem offers a learning opportunity in three dimensions (Wedelin, & Adawi, 2015):

- Familiarity with real-world problems:
A realistic problem and its solution (including any necessary derivation), acts as a representative case and contributes to a familiarity with real-world problems in the domain of interest.
- Supporting knowledge:
The concepts and methods required to solve the problem (known in advance or created as a part of the solution process).
- Processes and skills:
The particular way in which the solution (and its derivation) was found, and the modelling and problem solving techniques involved.

In addition, teaching Mathematics through problems is important because dealing with real life problems helps students to (Siller, & Greefrath, 2010):

- understand and cope with situations in their daily lives;
- acquire the necessary tools for moving from the plane of reality to that of Mathematics;
- have a clear picture of Mathematics, and in the process identify the tools they need for life;
- comprehend Mathematics and Computer Science in depth, so as to be able to recall important concepts with confidence at a later time;
- see the history of Mathematics as a kind of 'laboratory in which to explore the development of mathematical knowledge'.

Almost all of the research on learning with Mathematics modelling is based, with few exceptions, on an epistemological perspective that begins with an examination of the relationship between the real world and the world of the model. Doerr and Pratt (2008) suggest two epistemological foundations for mathematical modelling: the first entails a separate model from the world that must be modelled, while the second sees modelling as a cyclical and interactive process.

The epistemological position that separates the real world of the phenomenon from the world built with the model is in some way artificial; on the other hand, however, it is crucial for modelling. This separation is not a naive and modern version of a platonic point of view of reality, but is distinctly represented in a mathematical model. The essence of the epistemological position is that the two worlds - that of the phenomenon and the model - co-construct one another: the co-construction of the real world on the one hand, and the model world on the other, is highlighted by the way in which the models are planned and designed in the real world.

The real model may be affected by results, which are extraneous to it; therefore, the separation between the real world of the phenomenon and the mathematical model of the world is in a way artificial. At the same time, the separation of the phenomenon from the model is a crucial point in the meaning of a model.

The second epistemological position - based on research and practice in relation to mathematical models - takes on modelling as a cyclical and interactive process. The reason for this interaction is the attempt to validate in the real world the results, manipulations and objects in the model world. The results of the validation process are derived from a model, or generate a further cyclic modelling activity. The cyclic nature of this modelling paradigm (National Council of Teachers of Mathematics, 1989; Giordano, Weir, & Fox, 1997; Galbraith, & Clatworthy, 1990; Niss, Blum, & Huntley, 1991) is represented in Figure 1; the paradigm can also be subject to changes.

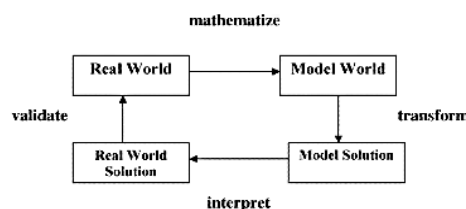


Figure 1: The cyclic nature of the modelling process.

In Figure 2 the most common Blum and Leiss' cyclical model (2007) is showed.

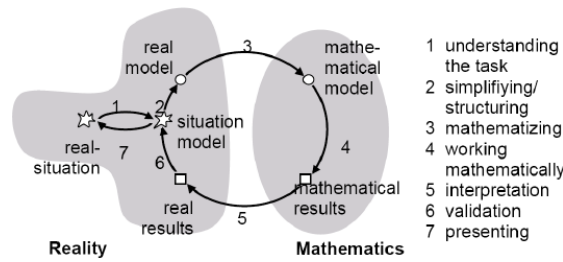


Figure 2: Modelling cycle of Blum & Leiss.

In Blum and Leiss' modelling cycle we can identify three fundamental points:

- Design and development:
Comparable to "Finding the real model" and to the step of "Translation" - Real situation to real model by including the situation model.
- Description:
Comparable to "Finding the mathematical model".
- Evaluation:
Comparable to "Finding (Calculating) mathematical results" and to the step of validating.

Several research studies recognize that the development of technology creates more opportunities for practicing mathematical modelling in the classroom (Galbraith, et al., 2007); this has led to the promotion of modelling activities in schools. In recent years the practice of modelling with the use of technology has been fully included in the Mathematics school curricula (CAS, DGS, spreadsheets, programming environments, etc).

Siller and Greefrath (2010) have implemented *Blum and Leiss' modelling cycle*, introducing the world of technology (Figure 3).

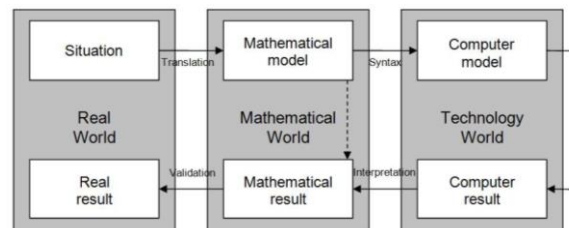


Figure 3: Extended modelling cycle-regarding technology when modelling.

The three worlds shown in Figure 3 are idealized, and influence each other. For example, the development of a mathematical model depends on mathematical knowledge on the one hand, and on the other hand is influenced by the technology.

The use of technology increases the chance to solve some mathematical models; in particular, the intelligent use of computers in teaching allows to increase motivation on the one hand and to recognize the importance of mathematics in life on the other. Unfortunately, many teachers prefer not to introduce modelling in classroom practice for different reasons, which include the lengthier learning process; at the same time, there are many reasons in favour of integration between modelling and technology (Siller, & Greefrath, 2010).

In classroom teaching practice, the use of technology allows you to create new opportunities in the processes of teaching-learning and at the same time operate active links between the ideas and the mathematical content (Frassia, 2016).

Fuchs and Blum (2008) quote the aims of Möhringer (2006) which can be reached through (complex) modelling with technology:

- Pedagogical aims:
With the help of modelling cycles it is possible to connect skills in problem solving and argumentation. Students are able to learn application competencies in elementary or complex situations.
- Psychological aims:
With the help of modelling the comprehension and the memory of mathematical contents is supported.
- Cultural aims:
Modelling supports a balanced picture of mathematics as science and its impact in culture and society (Maaß, 2005).
- Pragmatically aims:
Modelling problem helps to understand, cope and evaluate known situations.

The use of technology can help to simplify the difficulties typical of some modelling procedures. Siller and

Greenfrath (2010) identify some key elements when you engage in modelling activities with technology: computationally-intensive or deterministic activities; working, or evaluating structuring of large data sets; visualizing processes and results; experimental working. In technology world, the geometry learning can be facilitated. In short, the surveyor's traditional tools (ruler, square ruler, compasses), retrieved and simulated by DGS, on the one hand facilitate geometrical intuition, while on the other raise and stimulate interest and learners' imagination, enabling speculation, which is sometimes immediately verifiable, thanks to the simultaneous computer feedback (Jones, et al., 2000; Hollebrands, 2007; Güven, & Kosa, 2008; Hohenwarter, et al., 2008; Ruthven, et al., 2008; Baccaglini-Frank, & Mariotti, 2010, Keşan, & Çalışkan, 2013).

The connection between a drawing and a geometric object in everyday teaching practice is nearly always established through a process of approximation. This is based on the idea that with subsequent, better attempts the drawing can eventually achieve something close to the ideal figure. Geometric constructions made with traditional tools also fit this framework and are opposed to free-hand constructions in purely empirical terms of precision. The use of tools is then seen in practical rather than theoretical terms (Mariotti, 1995). However, in this way a fundamental aspect is ignored and remains unknown to students: each tool contains some knowledge, which is useful for the solution of a particular class of problems. In this sense a geometric construction appears like a geometrical problem (Mariotti, 1996) whose solution can be worked out within a given theoretical framework. Geometric construction, suitably contextualized in the teaching practice, helps the students to begin just this complex path which starts with the simple and evident and moves on to the complex and 'non evident' in a tangible, critical and rigorous way. The integrated tools offered by a DGS represent a valid aid along the way as they progress in the same way from what is predefined to what is made by the user (Serpe, & Frassia, 2015). The authors illustrate a practical, coherent example - based on the theoretical framework outlined - of a classroom activity about geometry: starting from a real object, the activity develops into mathematical modelling which allows the simulation of a computer prototype in the DGS GeoGebra. Specifically, the modelling example fits within the second epistemological position.

AN EXAMPLE WITH GEOGEBRA

On the basis of the overarching ideas established by OECD's PISA study and of recent international research in the field of didactics (Goos, et al., 2007, Doerr, & Pratt, 2008; Arzarello, et al., 2011), we have chosen a type of methodology with the aim of posing 'open' problems involving the modelling of real situations. Specifically, the task is for the students to model the Mercedes car maker's logo with GeoGebra, to be used as a means of constructing a new kind of knowledge that is nevertheless based on well-known basic concepts and knowledge in Euclidean geometry. In order to simulate any process, it is necessary to find an appropriate model for it and to create an efficient algorithm to evaluate the model (Henning, & John, 2011).

Modelling is crucial in mathematics learning and it is different from other mathematics topics because of its unique definition and steps. In this example - type activity Blum and Leiss' (2005) a simplified modelling cycle process (Figure 4) is used just so students can experiment how to apply the acquired skills in order to find out or verify properties, using inductive and deductive reasoning.

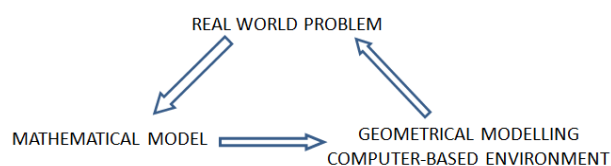


Figure 4: Modelling Cycle Process.

Now, we describe the example of activity carried out in the 9th (13-14 years) of a scientific high school and aimed at developing and enhancing of fundamental geometrical objects (point, segment, circumference, angle and triangle). The steps of activity are reported here in brief.

STEP 1 - Real World Problem

The class is divided into groups, and each group gets and becomes familiar with the object - Mercedes logo (Figure 5).



Figure 5: Mercedes logo

The teacher (T) invites the students (S1, S2,..., S5) to record on the page the first geometrical intuitions. Some of the recorded comments are reported below:

- S1: I can see a three point figure - like a three point star - in a circle.
 S2: The outer edge consists of two concentric circumferences.
 S3: The inner figure is formed by three quadrilaterals with a common vertex, but the common vertex is in the middle.

The methodology of guided discovery encourages the students to formulate the first conjectures and to explore further; the conversation triggered and guided by the teacher is very important because it avoids the construction of formal games and it educates to reasoning before formulating conjectures and hypotheses, stimulating creativity, intuition and the imagination.

STEP 2 - Mathematical Model

The experimental analysis of the real model leads to the formulation of a possible mathematical model; this requires clear hypotheses and rigorous deductions.

This is a delicate phase not always easy to grasp (Serpe, 2007). In particular, the second step is based on recognition and characterization of geometric properties by measuring with ruler and goniometer.

- S4: The quadrilaterals are congruent ... each quadrilateral is divided by a diagonal greater in two congruent parts.
 T: What's the name of three quadrilaterals in the logo?
 S3: The three quadrilaterals are kites or deltoids.
 T: In fact, they are non-convex quadrilaterals with two pairs of adjacent equal sides. How are the three deltoids arranged?
 S2: The three vertexes are all equidistant from each other.
 S5: Each deltoid/kite is rotated by 120° in respect to the previous and/or successive one.

Now the teacher asks the students to trace the Mercedes Logo (Figure 6) and summarize on a chart all the observations made on the relations among the geometrical figures on the Mercedes logo (Table 1).

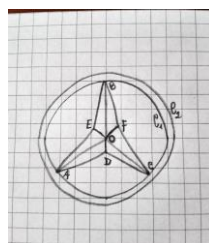


Figure 6: Mercedes logo

Geometrical objects	Geometrical objects names	Relations
<i>Circumference</i>	C_1, C_2	<i>Concentric</i>
<i>Segments</i>	$AO, BO, CO,$	<i>Congruent</i>
<i>Segments</i>	AD, AE, BE, BF, CF, CD	<i>Congruent</i>
<i>Angles</i>	$\hat{AOB}, \hat{BOC}, \hat{COA}$	<i>Equal</i>
<i>Triangles</i>	$ADO, AOE, BEO, BOF, CFO, COD$	<i>Congruent and Equivalent</i>
<i>Deltoids</i>	$ADOE, BEOF, CFOD$	<i>Congruent and Equivalent</i>

Table 1: Relations between geometrical objects

Now we have to make a prototype of the mathematical model both with traditional tools (ruler, set square and compasses) and with the aid of technology (computer and relative software); in both cases we need to formalise

the solving algorithm.

STEP 3: Geometrical Modelling in Computer-Based Environment

At this point mathematical modelling allows an important conceptual leap: the short and objective description of the Mercedes logo requires the introduction of the acquired and tested concepts into the model study phase. Afterwards, the computer logo simulation leads the learners to structure the actions performed and their effects into a descriptive framework, a process through which they acquire familiarity with arguments and demonstrations of increasing complexity. The teacher then suggests the reproduction of the Mercedes logo in the computer lab using the GeoGebra spreadsheet. The students through the GeoGebra spreadsheet use the 'predefined objects' available in the tool bar: point, circumference, rotation, and polygon. This step requires the elaboration of the construction algorithm for the Mercedes logo, an essential phase which helps them to understand geometric properties.

The solving algorithm is as follows:

- 1) Draw a point O ;
- 2) Define a slider r ;
- 3) Trace the circumference c with center O and radius r ;
- 4) Draw a point A on the circumference c belonging to the vertical line passing through the point O ;
- 5) Draw a point B distant from A , $r + r/6$ and belonging to the vertical passing through O ;
- 6) Draw the point A' , A rotated of 120° with respect to O counterclockwise;
- 7) Draw the point A'' , rotated of A' by 120° with respect to O counterclockwise;
- 8) Draw point B' , B rotated by 120° with respect to O counterclockwise;
- 9) Draw point B'' , rotated B' of 120° with respect to O counterclockwise;
- 10) Draw triangles $OB'A$, OAB'' , $A'OB''$, $A''OB$, $A''BO$, $A''OB'$;
- 11) Trace the circumference of a concentric circle of radius $r + r/18$.

The output of the algorithm is reported in Figure 7.

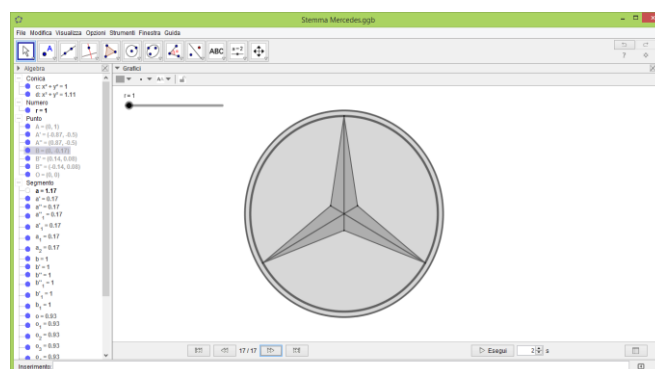


Figure 7: Output of the Mercedes logo.

CONCLUSIONS

The technology leads to the solution of many real world problems that had proved difficult to resolve with the conventional mathematical tools of the time: one of the powers of the technology is to produce images/figures to clarify and refine students' mental models of the situation.

In learning of Geometry, the introduction of a practical and representative dimension by means of a DSG like GeoGebra leads the students to structure the actions performed and their effects into a descriptive framework, a process through which they gradually acquire familiarity with arguments and demonstrations of increasing complexity. Moreover, the activity experience of interacting with the model is essential in order to characterize a construction and making it didactically relevant.

In the school of the Third millennium, modelling is important because it helps us to better comprehend the world around us, but also because through modelling one can acquire a flexible way of thinking which trains the mind to interpret, reflect and analyse the real world.

The use of mathematical and analogical models is strategic to the understanding of reality; from an educational and epistemological aspect, the "inductive method is compared to more rigorous scientific discussions until the logical-mathematical demonstration is achieved (Serpe, 2006).

The learning example was set up with the specific aim of guiding students to the understanding of the relationship between concrete versus abstract, staying away from purely theoretical mathematical concepts. (Serpe, & Frassia, 2016). Through the modelling process we can recover some mathematical terms linked to geometrical constructions, which are often neglected in traditional teaching in Italian schools. With the help of a DGS such as GeoGebra we can introduce didactic perspectives that are different from the usual ones, and enable

the learners to experience the true meaning of mathematical discovery.

In our example, the students indeed approach geometrical concepts not just from a technical, mnemonic, almost ‘distracted’ angle, but as fundamental tools for research and planning. Through the help of DGS like GeoGebra, traditional solutions are proved and visualized in a modern way. So the role of modelling in education is enforced and students become aware of the enormous prominence of modelling in Mathematics education.

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Learning Programming From Scratch

Monika MLADENOVIC

*University of Split, Faculty of Science
Croatia
monika.mladenovic@pmfst.hr*

Divna KRPAN

*University of Split, Faculty of Science
Croatia
divna.krpan@pmfst.hr*

Saša MLADENOVIC

*University of Split, Faculty of Science
Croatia
sasa.mladenovic@pmfst.hr*

ABSTRACT

The link between problem-solving and programming skills is well known. Students with higher problem-solving abilities find programming easy and they can master programming with no or little difficulties regardless of the programming environment. On the contrary, students with lower problem-solving abilities find programming difficult to understand and are often unable to master it. The before mentioned groups of students usually make up two thirds of the entire class, the top and lowest thirds, respectively. What about the "middle third" students? This is probably the most represented group; those are students who can master programming but with some difficulties. Visual programming language environments are tools designed to engage all students but maybe the "middle third" students would gain the most benefit from that approach. In this paper, we explore the educational and motivational effect of using Scratch for game-based programming on 5th-grade elementary school students based on their problem-solving abilities. Results presented here confirm the positive effect of using Scratch as the introductory programming language for game-based programming on "middle third" students, compared to Python as the text-based programming language.

Keywords: programming, Scratch, problem-solving, elementary school, "middle third" students

INTRODUCTION

Programming is difficult, and most children won't become programmers, so why should they learn to program? Programming, as a part of Computer Science, is also a part of everyday life, so learning programming as soon as possible should be the educational right of the 21st Century (Maloney, Peppler, B. Kafai, Resnick, & Rusk, 2008). It is well-known that programming requires higher problem-solving abilities and that by programming problem-solving abilities can be practised. Students with higher problem-solving abilities can master programming with no or little difficulties, so motivation is crucial to this group of students. On the other hand, students with low problem-solving abilities are facing a lot of difficulties during learning programming, and are often unable to master it. We could facilitate their efforts by choosing an appropriate pedagogical approach. Maybe the most interesting group are "middle-third" students who can master programming with some difficulties (Armoni, Meerbaum-Salant, & Ben-Ari, 2015). Motivation and appropriate pedagogical approach can be crucial for these students. Choosing the proper programming environment for target age may be the key factor.

Textual programming language approach rely on "real" programming approach with languages like BASIC, Python, etc. Those languages require high problem-solving skills and precision in syntax, so many children perceive programming as difficult. Programming is most commonly taught through solving various math problems. The question is: do children find programming based on this approach repulsive?

Visual programming languages are syntax error free and more attractive to children. Scratch is visual, block-based, programming language appropriate for elementary school children (Resnick et al., 2009). Using programming languages like Scratch has the advantage of eliminating syntax problems which allows students to focus on the language semantics. Besides that, elementary school students have yet to reach the appropriate level of abstract thinking required to program, which makes learning programming more difficult. Learning programming by using a visual programming language can provide concrete to abstract experience (Dann & Cooper, 2009), and can thus be used as a medium for mediated transfer (Dann, Cosgrove, Slater, & Culyba, 2012) towards “real” programming. By teaching programming in Scratch, we can also shift the context of programming from solving math problems, which is the most commonly used approach in text-based programming, to programming games, storytelling, etc. The question is: do students learn programming concepts or is it just fun?

Our previous research (Mladenović, Krpan, & Mladenović, 2016) showed that 5th-grade students with higher problem-solving abilities achieved better results in Python as “real”, text-based programming language. When it comes to Scratch that is not the case. Students with intermediate problem-solving abilities achieved better results in Scratch than in Python. This led us to new questions, can we affect the “middle third” students to achieve better results in programming? Can we motivate the “higher third” students to take programming class? Can we measure the motivational factor of these languages? In this paper, we give answers to these questions. This research was conducted in classroom settings. We analysed 5th-grade elementary school students’ test results during their enrollment in elective course Informatics in two schools by both approaches using Python as textual language and programming games in Scratch. Students didn't have any programming experience, and their problem-solving abilities were tested prior to the experiment. Based on the problem-solving test results, students were assigned to one of three groups. Students were learning different programming concepts in two programming languages and were tested for both approaches. Test results were analyzed and compared for each problem-solving group. The results of our research are presented in this paper.

BACKGROUND

Novice programmers find it very difficult to master programming. In order to solve a programming problem, we first need to break the problem into smaller, more manageable steps. This is the process of developing an algorithm. Students who need to focus more on syntax commonly ignore this phase. Flow charts and trace tables are often used to take the students through the steps of structured problem solving which leads to identifying sequence, selection, and repetition (Whitfield, Blakeway, Herterich, & Beaumont, 2007). Afterwards, novices need to program these steps using some programming language. A programming language is perceived as a major obstacle for novices (McCracken et al., 2001), especially when it comes to elementary school children because novice often focus on programming language syntax rather than developing an algorithm. Visual programming languages may help with this issue since they have simpler syntax, which allows novices to focus on developing an algorithm (Grover & Pea, 2013).

It has been reported that students with lower mathematical skills can learn problem-solving and programming if provided with appropriate materials and the use of less complex visual tools (e.g. Java Trainer) before moving to IDEs which are considered more complex (Whitfield et al., 2007). It is also reported that children weren't aware that they were programming, they argued that they were making games, stories, interactive presentations in Scratch (Maloney et al., 2008). This phenomenon Randy Pausch called “head fake” (Dann & Cooper, 2009) (Pausch & Zaslow, 2008).

In one of our previous research, we compared students’ success in LOGO, which is a text-based, and Scratch, which is a block-based programming language. Results showed that students’ success in Scratch was better, especially with regard to the concept of a nested loop. There were only a few students who were able to fully understand basic programming concepts while using Logo, but after a switch to Scratch that number increased. When it comes to motivation, Scratch is far more positively accepted than Logo (Mladenović, Rosić, & Mladenović, 2016).

Therefore, we can conclude that the “middle third” students can benefit from using a visual programming language. Similar conclusions were made in other studies. It was demonstrated that the use of the Jeliot program animation

system primarily benefited “middle third” students (Ben-Bassat Levy, Ben-Ari, & Uronen, 2003). The same conclusion was reported in a study where Scratch was used as an introduction to C# (Armoni et al., 2015). Besides, students can master basic programming concepts more quickly by using a visual programming language (Armoni et al., 2015) (Price & Barnes, 2015).

However, there are studies that indicate some possible bad habits of programming in Scratch. It's reported that during programming in Scratch middle-school students developed *bottom-up programming* and *extremely fine-grained programming bad* habits, although researchers were satisfied by motivation and developed technical skills of students by programming in Scratch (Meerbaum-Salant, Armoni, & Ben-Ari, 2011). These habits may have been developed as part of “natural learning” based on “scenario based learning” which fits with the idea of Scratch programming approach. These habits shouldn't be concerning (Gordon, Marron, & Meerbaum-Salant, 2012), especially when Scratch is used as part of formal learning in a classroom setting in which teachers can guide students.

Researchers analysed a total of 100 projects, and two other bad habits were discovered. The first one refers to character naming, where most students didn't change default names like *Sprite1*, *Sprite2*. Conversely, it was also reported that user variables are named correctly, i.e., semantically meaningful. A possible explanation is that when creating a new character, the name is given automatically which is not the case when adding new variables. The second bad habit is duplicating code in the same project which indicates that abstraction and modularization were not taught (Moreno & Robles, 2014). Teachers who use visual programming languages in their classroom need to be aware of bad habits to minimize their occurrence.

METHODOLOGY

In this study, qualitative and quantitative methods were used.

Research design

This research was conducted with the purpose to compare the basic programming concepts understanding, concerning two programming languages: Python and Scratch. The target group were elementary school students with no previous programming experience. In the Republic of Croatia Informatics is an elective course (Ministry of Science Education and Sports of the Republic of Croatia, 2005) from 5th to 8th grade, and programming is only one of several main topics in each grade. Therefore, 5th-grade students were appropriate for this research. Since programming is related to problem-solving skills and there is a positive correlation between math and programming (White & Sivitanides, 2003), the administered pre-test was designed to test student problem-solving skills. Students were first exposed to Python programming for four weeks with two hours per week which makes a total of eight hours. The lectures included selected programming concepts: variables, input, print, sequencing and conditionals. Student skills in Python programming were tested afterwards. Three weeks later (after winter school break), we introduced students to programming in Scratch. We have selected a game-based approach and students were required to program simple games. They were introduced to basic programming concepts like sequencing, conditional and iteration. The lectures were held for two hours per week for three weeks, and afterwards students' understanding of concepts in Scratch was tested. Additionally, they were given a questionnaire about their attitude towards programming after learning both Scratch and Python.

The participants of the experiment were students from two elementary schools in Split, in both of which the first author of this paper was the teacher. Prior to the experiment, the teacher had five years experience of teaching computer science in elementary schools and four years of experience in teaching computer science at the undergraduate level.

The research design is shown in Table1.

Table 1: Research design

Experiment				
week		Topic	New terms and instructions	New concepts
Pre- test				
1	Python	Algorithms: sequencing, conditional and iteration	Algorithm, sequencing, conditional and iteration	Introducing algorithm term, basic algorithms: sequencing, conditional and iteration with examples from real life. Introducing to Python programming language.
2		Variable, input and output	Variable, input, print, int	Basic Python instructions, variable term and integers with examples in Python.
3		input processing, output process phases of the computer program	Arithmetic operations (+,-,*, /)	Solving simple problems in Python program using input, processing including basic arithmetic operations and output.
4		Conditional	If else	Solving simple problems including branching algorithm in Python using if else.
Python test, questionnaire about programming and python				
Three-week Christmas holidays				
1	Scratch	Aquarium simulation program	forward, left, right, repeat	sprites, concurrency, loops
2		Chasing ghosts game	If, variables	conditionals
3		Simple ricochet game	communication by messaging, conditional loops, Coordination and Synchronisation	loops with conditionals
Scratch test, questionnaire about programming and programming languages				

The primary goal of this research is to find the differences in students' results between pre-tests and tests following the Python and Scratch lectures. The second goal is to examine the differences in attitudes towards programming and the programming language used. Based on that, we defined the next hypotheses:

- H1 – Students with higher problem-solving abilities will be more successful in Python programming than students with lower problem-solving abilities.
- H2 - Students with higher problem-solving abilities will be more successful in Scratch programming than students with lower problem-solving abilities.
- H3 – attitude towards programming will be more positive after Scratch than after Python.
-

Participants

The research sample consisted of 54 5th grade students from two schools during the school year 2014/2015. Since programming was taught for seven weeks, some students didn't attend all of the lectures or tests. Hence, the final number of participants is 50, which includes 34 boys and 16 girls. Students had no previous programming experience, which means that this is their first contact with programming. Non-probability, purposive sampling (Cohen, Manion, & Morrison, 2013) was used, because our goal was to target pupils with no previous programming experience in elementary school.

Assessment instruments

The data was collected in three phases. In the first phase, students were tested for problem-solving abilities before the programming lectures began. In the second phase, they were introduced to basic programming concepts in Python like variables, input, print, sequencing and conditionals. Students' knowledge (acquired concepts) was

tested using Python assignments. They also filled a short questionnaire about the attitude toward programming. During the last, third phase, students were learning basic programming concepts like sequencing, conditionals and iteration while programming games in Scratch. Again, after the third phase, their acquired programming concepts were tested using Scratch assignments. They also filled a short questionnaire about the attitude toward programming and programming languages.

Data analysis

Results were analysed by qualitative and quantitative techniques that are used for triangulation purpose (Cohen et al., 2013) to increase the validity of the findings. Kolmogorov-Smirnov test is used to determine the normality of data. Parametric independent t-test and non-parametric Mann-Whitney U test are used to compare results between groups. Parametric test paired t-test and non-parametric Wilcoxon Signed Ranks Test are used to compare student results in different tests. Non-parametric tests are used for data which doesn't meet the requirements for using parametric tests.

RESULTS AND DISCUSSION

Results are presented in this section.

Problem-solving test

The first test was a problem-solving test that was administered before any programming lectures were held. The maximum test score was 14 points. Based on the achieved score, students were placed in one of three groups: stronger, intermediate and weaker students. The test can be seen in our previous paper (Mladenović, Krpan, et al., 2016). Table 2 shows distribution of participants by strength groups.

Table 2: Distribution of participants by strength groups

Group	N	points	Mean	SD
Stronger	15	≥ 11	11,93	1,223
Intermediate	16	Between 7 and 11	9,69	0,704
Weaker	19	< 8	4,05	2,97

Post-tests

Two post-tests were conducted in order to assess students' achievement. The first post-test was administered following the conclusion of Python lectures, and the second one following conclusion of Scratch lectures. Since the number of points in each test was different, we decided to use the percentage as a measure of success. Kolmogorov-Smirnov test showed that there is a normal distribution of data in both Python ($p=0,197$) and Scratch ($p=0,069$) tests, but not in all groups combined. Table 3 shows descriptive statistics results.

Table 3: Descriptive statistics

	Python test			Scratch test		
	Mean	SD	Shapiro-Wilk p	Mean	SD	Shapiro-Wilk p
Stronger	81,667	20,5116	0,006	76,953	19,7003	0,095
Intermediate	61,831	22,5395	0,278	71,575	19,0275	0,253
Weaker	38,910	21,9488	0,504	54,537	17,1179	0,505

Because the results of the Python test didn't satisfy the assumption of normal distribution, the Kruskal-Wallis test was conducted. The test showed statistically significant difference between strength groups ($\chi^2(2)=19.342$, $p=0.000$). As it can be seen in Table 3, stronger students achieved, statistically significant, better results compared to intermediate and weaker.

ANOVA test was conducted to compare group results in Scratch test. There was a statistically significant difference between groups as determined by one-way ANOVA ($F(2,47) = 6.943$, $p = .002$). As ANOVA showed

statistically significant difference, we made further analysis by Man-Whitney U and independent t-test differences between groups whose results are presented in the following sections.

Comparing success based on problem-solving abilities

In order to compare student success based on programming language used, we used the Mann-Whitney U test. In the analysis, we considered only two-thirds of the participants, those with intermediate and higher problem-solving skills. Students with lower problem-solving skills were left out of the analysis. When the Mann-Whitney statistic was calculated to determine whether there was any statistically significant difference in the Python test scores ($U=62,5$, $z=-2,288$, $p=0,022$), a statistically significant difference was found between students with higher problem-solving skills and those with intermediate problem-solving skills. From these results, we conclude that the former group of students achieved better results than the latter. In the case of Scratch test scores, no statistically significant difference between groups was found ($U=99,5$, $z=-0,828$, $p=0,408$).

These results indicate that with programming language like Scratch we can boost “middle-third students” for programming. This finding is consistent with other studies which showed that “middle third” students have the most benefit from the use of animations (Ben-Bassat Levy et al., 2003) and visual programming languages like Scratch (Armoni et al., 2015).

Afterwards, we compared intermediate and weaker students by independent t-test for both test results. Results of the t-test showed that students from intermediate group achieved statistically significant better results on the Python ($t(33)=3,040$, $p=0,005$), and Scratch test ($t(33)=2.788$, $p=0.009$). These results indicate that weaker students are “struggling” with programming regardless of the programming language used.

Based on the result we accept H1 because problem-solving abilities are directly related to success in Python programming language. But, when it comes to Scratch success this is not the case, at least for intermediate students so we can reject H2 because “middle third” students are equally successful in Scratch as stronger students. Based on these results we can conclude that students with higher problem-solving skills can master programming regardless of the programming language or method used. An important finding is that by programming games in visual programming languages like Scratch we can stimulate the motivation of intermediate students. If we add a motivational factor, it’s worth to give a chance to new programming languages and approaches to reduce quitting from programming.

Attitude towards programming

In H3 we assumed that a positive attitude towards programming would be higher after using Scratch compared to Python. After the lessons about programming in Python, students answered a Likert scale question of 5 items about their attitude towards programming. This question was repeated in the small questionnaire students answered after the Scratch lessons. The questionnaire was composed of four Likert scale questions regarding their attitude towards the programming languages used.

Table 4 shows the questions.

Table 4: Survey questions

	Questions	
After Python	Q1	How much do you like programming?
	Q2	How much do you like programming?
After Scratch	Q3	How much do you like Python?
	Q4	How much do you like Scratch?
	Q5	Which programming language do you prefer?

Figure 1 shows frequencies.

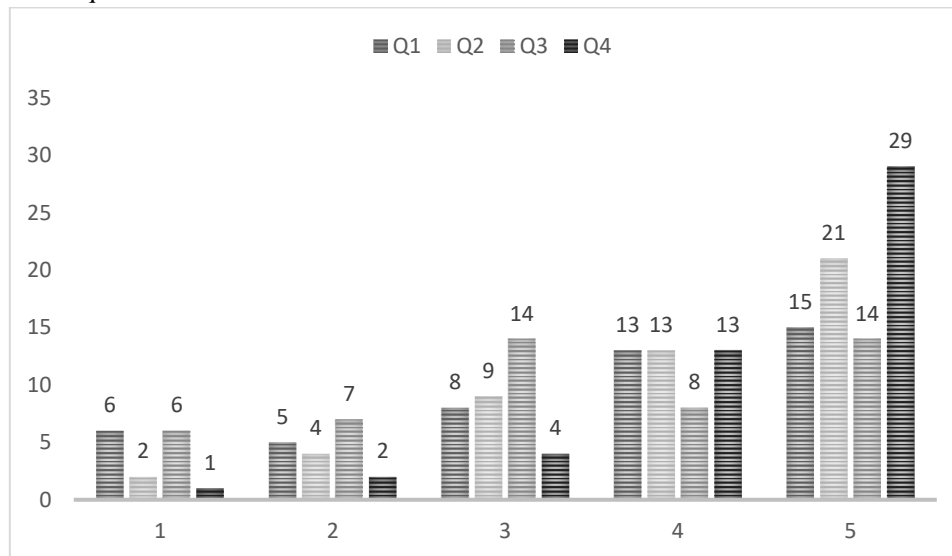


Figure 1: frequencies of the answers

From Figure 1 it is obvious that students liked Scratch more and that attitude towards programming is more positive after using Scratch. Figure 2 shows results for Q5.

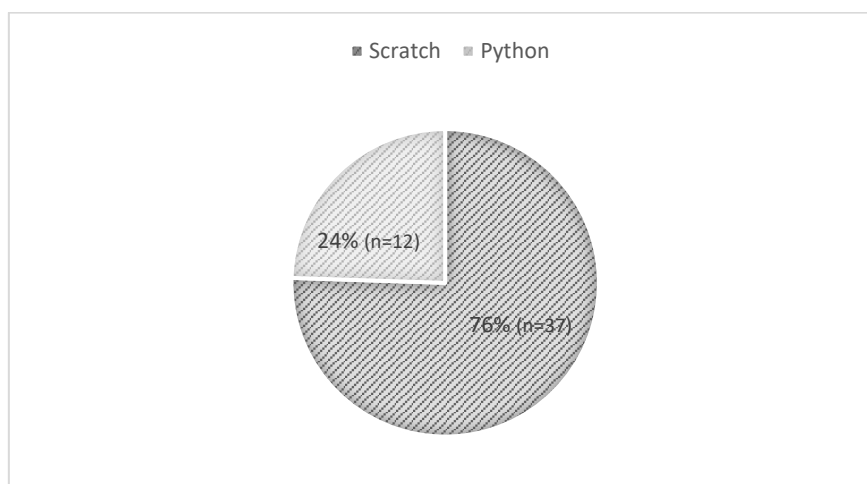


Figure 2: Q5 results

We wanted to compare student attitude towards programming after Python (Q1) and after Scratch (Q2). The Wilcoxon signed test rank showed statistically significant difference between Q1 and Q2 groups ($Z=-2,012$, $p=0,044$). Students had a greater affiliation for programming after Scratch compared to Python. This confirms that Scratch had a positive effect on student attitude towards programming. Thus we can accept H3 and conclude that attitude towards programming is more positive after Scratch than after Python.

However, it came as a surprise that even after being introduced to Scratch, a handful of students still preferred Python. We assumed that these are the students that belong to the top third of the class with regard to their problem-solving abilities.

In the questionnaire, students had space to write their thoughts about programming. They wrote 32 comments, only 4 of them were negative. For example:

- “this is boring”, “it’s too hard for me”, “it’s too complicated”.

Some of the comments were neutral:

- “*sometimes is boring and sometimes fun*” ...

Most of the comments (22) about programming were positive:

- “*Programming is awesome.*”, “*Programming is cool.*”, “*Programming is great and interesting.*”, “*I like programming, and I would like to learn it again next school year.*”, “*I like programming because I learned something new*”,

Some comments referring to Scratch:

- “*I like Scratch more than Python*”; “*Scratch is extremely fun, it’s nice to see a game that I made.*”; “*I don’t like programming too much but I had fun while programming in Scratch*”; “*I like both Python and Scratch but I’ve chosen Python as favorite programming language because I was on Python programming competition*”; “*I like both programming languages, Python and Scratch*”; “*Scratch is awesome.*”...

Since the first author was the teacher in all classes, we can also confirm the observations (Armoni et al., 2015) which refer to early recognition of though concepts in a second programming language. Furthermore, we also observed a shortened teaching process which enables the teacher to assist students with weaker programming abilities, while those with higher programming abilities could explore new features in Scratch.

CONCLUSION

Programming novices, especially those at the elementary school level need a very gentle introduction to programming. Students should be able to focus on problem-solving and writing algorithms instead of thinking about syntax. Visual programming languages, like Scratch, offer the experience of syntax free programming which is suitable for novices. Furthermore, visual programming languages allow the teacher to shift the teaching context from solving math problems to programming games. Finally, it improves positive attitude towards programming. Considering statements above we need to be careful not to forget that the main reason for using visual programming languages is to focus on teaching programming concepts. Scratch should be a media or a tool used for transfer of those programming concepts into “real” text-based programming languages like Python.

Students with high problem-solving abilities can master programming easily, regardless of the programming language. On the other hand, students with lower problem-solving abilities encounter significant difficulties while learning programming, and might be unable to truly master it. These two groups usually constitute two-thirds of students in a class. The “middle third” students are the ones that we can influence the most. This is a group that is able to master programming with some difficulties. Based on some previous studies we assumed that the use of Scratch might boost their motivation, attitudes and achievement. With the teacher’s help, Scratch can be used as a tool for mediated transfer of programming concepts from block-based to text-based programming languages and can improve the motivation for all students.

There is a lack of empirical research which compares the use of text-based and block-based visual programming languages in school settings at the K-12 level. We conducted research among 50 5th-graders in two elementary schools. Students were learning programming in Python, and later in Scratch. Results showed that students with higher problem-solving abilities were more successful in Python programming than students with lower problem-solving abilities. This is not the case when it comes to Scratch. In the case of Scratch, there were no differences in the success between better and “middle third” students which proves the usefulness of using Scratch to learn programming. Most students had more positive attitude towards programming after Scratch than after Python. It is important to note that students learned Python first, which is more difficult than Scratch. This order of introducing different programming languages might seem inversed, but we believe that it had a positive influence on the student’s motivation. We believe that their motivation would be smaller if the languages were introduced vice versa.

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Learning Strategies Enhancing on Statistical Education

Somruay APICHATIBUTARAPONG

Faculty of Sciences and Technology

Suan Sunandha Rajabhat University

Thailand

somruay.ap@ssru.ac.th

somruay@yahoo.com

ABSTRACT

Learning statistics is a requirement for tertiary science students. Many students encounter difficulties while learning statistics. Mobile learning is a strategy that allows students to learn in their own way, and to develop a learning strategy through technology. This research aims to develop resources to assist learning statistics on mobile device. Learning materials were containing forty statistical technical terms which included terminology, formulae, examples, and their usage in research. Fifty volunteers were randomly selected from undergraduate students interested in learning statistics. Findings suggest that the quality and usage of media can be effective. Moreover, students' feedback indicates that students maintained a positive attitude to learning statistics.

INTRODUCTION

Learning statistics has become important and necessary in the Information Age. People more than ever need to be statistically literate, not only in the workplace but also in their daily life. Statistical literacy is the ability to communicate relevant and important information accurately (and within a margin of error) to statisticians and non-statisticians alike. Everyone encounters data and has the need to make decisions based on that data. Much of the information in the world is determined through the use of statistics. Statistics are widely used across different fields of expertise including business, economics, manufacturing, engineering, and the sciences. Rational and proper usage of statistics is useful in determining the past which can also assist in predicting the future. Therefore a knowledge and understanding of statistics is not only important, but also compulsory to learn at the undergraduate and postgraduate education level. Giesbrecht (1996) pointed out that almost every discipline, the ability to understand, interpret, and critically evaluate research finding are becoming an essential core skill.

Most, if not all teachers and students are challenged in conveying and understanding statistics. While statistical ideas and rules can be complex, difficult to understand, and appear contradictory to common-sense, it can be difficult to motivate students to engage in hard statistical work. Additionally, many students have difficulty with the underlying mathematics, equating statistics with mathematics and the focus on numbers and computations. For students, statistical terminology can also have a different meaning. This issue was highlighted by Gigerenzer, et al. (2007) and Lipkus (2007), who highlighted the need to train statisticians to communicate more effectively. Yilmaz (1996) also agreed that the methods of teaching statistics are not effective.

The growth of the Internet has impacted on virtually every aspect of society. Online learning is becoming a favored training option in industry, government, and higher education. Ooms and Garfield (2008) pointed that educators' interest in using online educational resources has steadily increased. Learning and teaching statistics by using internet resources provides several benefit and advantage above a traditional teaching. CDW-G (2010) noted that while students use technology including mobile devices, blogs, and podcasts in their lives, these are largely absent from the classroom. Mobile learning technologies offer teachers and students a more flexible approach to teaching and learning. And this is in spite of a number of websites dedicated to the interactive learning of statistics which include a substantial amount of free download interactive statistical programs. Maridakis and Winker (1984) indicated that Interactive Statistical Programs is a comprehensive system for learning and teaching purposes. Educators should explore and employ mobile technologies to deliver knowledge in line with how students normally obtain information and offer more online learning to support development of student interest communities that disseminates information beneficial to academic pursuits. Gikas and Grant (2013) highlighted the advantages in the use of mobile devices for student learning, including 1) quick access to information, 2) communication and content collaboration, 3) the variety of learning tools, and 4) different learning environments. Greenhow (2011) summarized that using social media tools in learning promotes a more student-centred course. It caused that mobile learning has become a new educational paradigm where teaching and learning can be performed by anyone, anytime, and anywhere. This study aims to develop better strategies in statistical education learning by the use of mobile devices.

The report subsequent to the Guidelines for Assessment and Instruction in Statistics Education (GAISE) Project (2010) suggested emphasizing statistical literacy and developing statistical thinking, using real data, stressing conceptual understanding, rather than possessing mere knowledge of procedures. Educators need to foster active

learning in the classroom, and make use of technology for developing conceptual understanding for analyzing data, and to use assessments to improve and evaluate students' learning. Furthermore, Tishkovskaya and Lancaster (2012) showed that the statistical education in the 21st century has benefited from the development of technological resources via internet such as computer-based and Web technologies.

Most statistics teachers are not only focused on improving the cognitive aspects of instruction but are also interested in influencing the students' attitude in overcoming any feeling of intimidation that the students have (Estrada et al., 2011). Nowadays, attitudes towards statistics have increasingly been considered in statistics education. Pajares (1996), and Gal, Ginsburg & Schau (1997) noted that the attitude towards statistics influences a person's statistical behaviour inside and outside the classroom, and their willingness to attend statistics courses in the future. Schau (2003) pointed out that positive attitudes towards statistics would help students to understand that understanding statistics is useful for their professional and personal lives, and that students can be trained to understand and use statistics.

THE STUDY

The statistical education media on mobile device was developed by using C++ Builder 2009 and JQuery Mobile enhanced by R-program for applying applications. The database was utilized Microsoft Access. The statistical education learning media procedure consisted in the following: 1) collect the statistical analysis in statistical education by applying R-program 2) design Database 3) establishes database and application 4) system implementation and 5) evaluation.

Appropriate assessment of the statistical education learning material contained 10 items. A 5-point Likert scale was used. The options are 5-Very effective, 4-Effective, 3-Average, 2-Ineffective, and 1-Very ineffective. In addition, the attitude assessment instruments were developed by adapting SAS, ATS, and SATS (Schau (2003), Wise (1985), Sutarso (1992)) in evaluating attitude towards statistical education by using mobile devices.

This study was performed at Suan Sunandha Rajabhat University (SSRU) involving 1) fifty volunteer students that were randomly selected including both genders, 17-21 yrs-of-age and with an interest in statistics. They were invited to practice with the learning media.

A quantitative approach was used in assessing the evaluation survey on statistical education learning resources by 50 students' opinion in using mobile learning sources completed by the students using mobile learning resources. The survey used following rating system for quality evaluation of the learning media as defined in Table 1.

Table 1 Rating of quality / Attitudes evaluation

Mean	Quality Classification.	Attitudes Level
4.50 - 5.00	Very effective	Strongly Agree
3.50 - 4.49	Effective	Agree
2.50 - 3.49	Average	Uncertainly
1.50 - 2.49	Ineffective	Disagree
1.00 - 1.49	Very ineffective	Strongly Disagree

FINDINGS

In assessing the descriptive statistics concerning quality of learning resources for statistical education on mobile devices, it was determined that parameters governing students' opinions were effective (mean = 4.15/5). The result was shown as Table 2. Furthermore, the students' attitude assessing towards to statistical education using mobile devices was shown as Table 3.

Table 2 Quality assessment of the statistical education learning resource

Items		S.D.	Assessment
1. Search time statistical data	4.27	0.45	Effective
2. Content description	4.17	0.69	Effective
3. Content presentation	4.33	0.69	Effective
4. Content accuracy	4.49	0.57	Effective
5. Screen display	4.03	0.67	Effective
6. Homepage design	3.97	0.65	Effective
7. Command buttons	4.07	0.73	Effective
8. Manual and web board	4.23	0.71	Effective
9. Speed and accuracy for analyzing data	4.10	0.88	Effective
10. Flexible and easy usage	4.17	0.63	Effective
Total	4.15	0.38	Effective

From Table 2, the highest average of students' opinion was 4.49 in accuracy of the statistical content and the lowest average was 3.97 in homepage design. In attitudes assessing towards to statistical education by using mobile devices was shown in Table 3.

Table 3 Students' Attitude assessment in the statistical education using mobile devices

Items		S.D.	Assessment
1. Benefit in learning statistics by mobile applications	3.95	0.51	Agree
2. Motivation to learn statistics via mobile applications	3.78	0.54	Agree
3. Mobile devices in class was a useful tool in learning statistics	3.67	0.63	Agree
4. The use of mobile applications enhanced learning statistics	3.83	0.81	Agree
5. Mobile learning made statistics class more interactive and interesting	4.06	0.89	Agree
6. New statistics content is usually easy for me to understand	4.52	0.40	Strongly Agree
7. I feel comfortable seeking and finding my statistics problem	3.51	0.68	Agree
8. I am interested and willing to use Statistics on the job and my daily life.	4.58	0.60	Strongly Agree
9. I look forward to teaching statistics.	3.41	0.78	Agree
10. I would be more likely to participate in statistics class if the course is mobile applications.	3.37	0.83	Agree
Total	3.71	0.80	Agree

In assessing the Attitude towards to Statistical Education using mobile devices (Table 3) indicated that the students are Strongly Agree in Item 6 and Item 8 and they are Agree in the rest of questions.

CONCLUSIONS

Assessment of the statistical education learning strategies on mobile devices indicated that the educational media via mobile technologies achieved an effective level of learning based on students who interested in statistics education. Research finding affirms and realizes as UNESCO pointed that in the twenty-first century, computers are viewed as a crucial component to learning, but mobile technologies will undoubtedly become more integrated and commonplace in both formal and informal education (Shuler, et al., 2013). In addition, Tishkovskaya and Lancaster (2012) also highlighted that statistics teaching has benefited from the development of technological resources that are available. This study pointed that there are more gain for enhancing learning strategies on Statistical Education on Mobile Devices. It would be beneficially for statistics teacher to concern them to build strong synergies both cognitive and non-cognitive skills in teaching.

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Learning the Phonetic of Ffl by Turkish Learners: Need for Specific Teaching Materials

Fatma KAZANOĞLU

Uludağ Üniversitesi

Havva ÖZÇELEBİ

Uludağ Üniversitesi

ABSTRACT

This study is meant to analyze the evolution of the pronunciation problems encountered by Turkish learners of French as a foreign language at the University of Uludag from preparatory class to the fourth year of license. The first part of this study highlights the fact that the learners in question cannot be considered as generic students and that the specificities of these learners can be correlated with their pronunciation mistakes: mistakes that tend to persist and can be fixed during learning. In the second part, the lack of teaching materials in the field of phonetics for Turkish learners will be highlighted by comparing specific difficulties with books available. Finally it is shown how this study serves as a theoretical basis for a project related to the learning of phonics by Turkish learners.

Keywords: phonetic, French as a foreign language, Turkish learners, didactic material.

INTRODUCTION

In FFL teaching, communicative competence plays a major role since the birth of the communicative approach and the Common European Framework of Reference for Languages (now the Framework) (2001) in which it is called "the communicative language competence." The acquisition of this skill is proposed by the Framework in three competences (2001, p . 17-18): linguistic competence, sociolinguistic competence and pragmatic competence , all three considered in different language activities such as reception, production , interaction and mediation which can be accomplished in oral and / or written activities.

In the teaching of foreign languages, these activities refer to four basic communication skills: oral comprehension and oral production skills, and skills of reading comprehension and written production. Such differentiation of these skills facilitates the organization of the order of skills to teach and also that of teaching programs. While all skills are necessary for a good command of a foreign language, one skill stands out from the others: the competence of oral communication. The importance of this skill in language teaching is emphasized with the communicative approach in which it is addressed through the components of perception and production.

The acquisition of oral communication skills through learning the phonetic which Borel (1991) underlines the importance: " To correctly identify the meaning, it must first be correctly identified the sound support. In fact, without a good phonetics, we did, in speaking, no chance to pass a message to be understood, even if the words were well chosen and if the syntax is correct. Moreover, prosody, through its intonation structures, accentual and rhythmic, provides, for the most part, the syntax orally. The meaning is accessible only if the syntax is decoded."

Hence, the need for the teaching / learning of phonological skills in a non-French-speaking environment and the need for appropriate support for the aural learners' mother tongue differ, because the difficulties are not the same for all languages.

The problems encountered by Turkish pronunciation learners FFL: overview

Although the phonetic alphabet is universal for French, pronunciation difficulties in learning a foreign language vary depending on the mother tongue of the learner. In regard of a Turkish EFL learning audience, many recent research focuses on analyzing the specific difficulties. From Özçelik's (2008) research, one can summarize that the pronunciation problems Turkish students encounter is possibly because of their mother tongue

1. The relationship between spelling / sound, a category consisting of several difficulties encountered in Turkish learners are :

- the tendency to read the words as they are written ; ex : Tu as ... ? → /tua ... / → [tya ...]
 - the pronunciation of the dropped "e" (ə) that should not be pronounced; ex : J'entre → /zantRe / → [zãtR]
 - the pronunciation of the dropped "e" /ə/ like the "e" oral vowels simples /e/ ; ex : je serai → /zeseRe / → [ʒ(ə)s(ə)Re]
 - the tendency to pronounce the "h" silent; ex : Eh bien! → /ehbjen/ → [ebjẽ]
 - the pronunciation of double consonants; ex : d'accord → */dakkoR/ → [dakõR]
 - the correct pronunciation of nasal vowels creates problems for Turkish learners; félicitations! → /felisitasjon/ → [felisitasjõ]
 - the change of the phonemic structure which can be in various forms such as by adding a phoneme to create a syllable, ex : des projets → */depıRʒε / → [depRoʒε] ;
- by replacing phonemes /b/, /c/, /d/, /g/ when in syllable-final (which never happens in Turkish) by the phonemes /p/, /ç/, /t/, /k/, ex : b → p Je t'embrasse → */zõtampRas / → [zõtãbRas] ;
- by the omission of one or more phonemes during pronunciation, ex : travailler → /tRavaj/ → [tRavaje],
- and by the substitution of phonemes, ex : On s'appelle → /onsaple / → [õsapel].
2. The ability to recognize words, which means that the learner read more easily and fluently the words he already knows
3. The wrong segmentation of rhythmic groups, ex : [Le chat] [est] [sur] [la chaise]
4. The intonation of interrogative and exclamatory sentences are problematic
5. Misplacement of the tonic accent due to the interference the mother tongue as the emphasis in Turkish is an increase in the intensity and not the duration and that due to the interference of English where the emphasis is lexical.
6. Sequencing; Turkish learners struggle to perform successive chains.
7. The link; Turkish learners do not respect the binding rules, including mandatory connections
8. The rhythm, the reading speed and lack of punctuation knowledge are sources of pronunciation problems among Turkish learners
9. The pronunciation / R / "uvular" is problematic but does not prevent access to meaning
10. The English language skills have influences on the French pronunciation (Özçelik, 2008, p. 206-213)

The research performed by Onursal-Ayırır (2012) about the problems of perception due to the connection with dictations shows that learners have less difficulties in the perception of words and / or phrases often encountered such as « de temps en temps », « de plus en plus », « comment allez-vous ? »..., however, to overcome difficulties in discriminating links, learners attempt to compensate their deficiencies by various methods:

1. Replacing expressions containing links with already known words, ex : « la porte est ouverte » become *"la porte tout vert"
2. Creating new words or phrases, ex. « un petit homme » → *"un petito"
3. The links "adjective + noun" masculine becomes feminine, ex. « le premier acte » → *"le première acte"
4. The addition of the letters in the case of link, ex. « elle m'a beaucoup aidé » → *"elle m'a beaucoup paidé"
5. The addition of phoneme appeared in the link, ex. « prend-il des médicaments ? » → *"Prend-t-il des médicaments ?"
6. Notwriting the unheard links (Onursal-Ayırır, 2012, p. 40-41).

To these problems of discrimination and production, may be added the problem of assimilation of successive phonemes. For example in words such as « pilule », « habitude »... where phonemes [i] / [y] are consecutives, an assimilation of the phoneme [i] is observed that comes close to the phoneme [y]. The phonemes [ʒ] and [z] in the final become respectively [ʃ] and [s].

For example, "cage" [ka: ʒ] pronounced [kaʃ] without lengthening and this refers to the verb "cacher", "age" [a: ʒ] becomes [aʃ] and means "la hache" or "hacher". The same for the [z] final, the most representative errors are "française" [frɑ̃sɛ: z] pronounced [frɑ̃sɛ: s] or "anglaise" [ɑ̃glɛ: z] pronounced [ɑ̃glɛ: s]. the phonemes [w] and [ɲ] that do not exist in Turkish, so during the pronunciation of the first there is the addition of the phoneme [v], "trois" pronounced [truva] or "toilette" pronounced [tuvalet]. For the phoneme [ɲ] two different pronunciations can be heard; while in the word "magnifique" [maɲifik] this phoneme is pronounced [magnifik] in the word "montagne" [mɔtaɲ] the same phoneme becomes [mɔtejn].

RESEARCH OBJECTIVE

This research aims to analyze in detail certain difficulties encountered by our students through an analysis of the sources of error and an analysis of the degree of persistence of the types of errors; to list other error generating variables for a given phoneme in order to develop the most appropriate material to our audience, who are future teachers of FFL.

For this research, the difficulties are approached in two views: discrimination and production. At the level of the selection of phonemes analyzed, two types of phonemes have been chosen:

- Phonemes existing in mother tongue and foreign language [i]/[y]/[u]. The reason, according to Borel (1991) is that « "The sound and / or phonemes, facing in both languages seem to be identical, but there are often differences more or less apparent. Moreover, there are distribution problems: identical phonemic units may have, in both languages, different uses in the speech. There is therefore a real teacher training problem. "
- Phonemes that do not exist in Turkish mother tongue, namely the nasal.

METHOD

4.1. Univers of the research

The universe of the research consists of four license classes of didactics department FFL of Uludag University in Bursa in Turkey and two classes of preparatory to this higher school Licensed Foreign Language of the same university.

The numbers of learners who participated in the research are shown in the table below (table 1), for a total of 146 learners with few exceptions, the first foreign language is English which they do not master at the same level.

Table 1: The number of participants

	preparatory class	License 1	License 2	License 3	License 4	Total
Number of participants	37	25	44	25	15	146

4.2. Corpus research

The experimental corpus has been made up from extracts of phonetic exercise books intended for a broad public. They are : « *Les 500 exercices de phonétique, Niveau A1/A2* » and « *Les 500 exercices de phonétique, Niveau B1/B2* » of D. Abry and M.-L. Chalaron published respectively in 2010 and 2011, that of C. Martins, J.-J. Mabilat « *Sons et intonation : exercices de prononciation* » published in 2004.

This corpus consists of 8 exercises of oral comprehension and 9 exercises of oral production in isolated words sentences and in texts.

FINDINGS

5.1. Discrimination exercises results review

Table 2 presents the results of discrimination to the phonemes [i] / [y] / [u] in single words in the first three activities, and in the fourth case in complete sentences including only one of the specified phonemes. This table allows us to observe and compare the difficulties of discriminating phonemes that exist in native language and in foreign language.

Table 2: Results of sound discrimination [i]/[y]/[u]

	1-Discrimination [i]/[y]		2-Discrimination [u]/[y]		3-Discrimination [i]/[y]/[u]		4-Discrimination [u]/[y]/[i]	
	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors
End of Preparatory Class	84	16	80	20	79	21	85	15
License 1	89	11	85	15	86	14	89	11
License 2	93	7	86	14	89	11	87	13
License 3	92	8	83	17	92	8	86	14
License 4	99	1	92	8	95	5	91	9

The first corpus representing the evolution of the number of errors regarding the discrimination of sounds [i] / [y] during the training license, shows that the amount of errors decreases over time to be virtually zero at the end of the license (at the beginning 16% errors of discrimination against 1% error in the fourth year). Therefore, discrimination [i] / [y] does not generate significant problems when these phonemes are in single words.

The corpus 2, which is about the evolution of the number of errors for discrimination [a] / [y], shows that the discrimination of these phonemes still poses no persistent problems so that the error rate is slightly higher than the previous phoneme. These 8% of errors concern mainly the word "habit[y]de" which is pronounced "habit[u]de" in English.

As for discrimination of phonemes [i]/[y]/[u] in the corpus 3, the conclusion is the same: there are some persistent errors even when the experiment is done on discrimination of these three phonemes. What is different concerning the discrimination of phonemes [u] / [y] / [i] is that these phonemes are integrated in complete sentences. Note that the error rate is slightly higher when discrimination is made in complete sentences when it is made into single words. (15% errors in preparatory class and 9% at the end of license cycle). Indeed, learners must "isolate" the phoneme and not be influenced by the rest of the sentence.

The results of discrimination to the phonemes [ã] / [õ] / [ɛ], phonemes that do not exist in the native language but which are specific to French, are presented in Table 3.

Table 3 : Les résultats de discrimination des sons [ã] / [õ] / [ɛ]

	5- Discrimination [a]/[ã]		6 - Discrimination [o]/[õ]		7 - Discrimination [õ]/[ɔ]/[o]		8 - Discrimination [ɛ]	
	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors
End of Preparatory Class	80	20	85	15	87	13	65	35
License 1	81	19	92	8	92	8	78	22
License 2	86	14	92	8	98	2	72	28
License 3	87	13	94	6	100	0	76	24
License 4	85	15	92	8	100	0	85	15

The corpus 5 representing the evolution of the percentage of correct answers on discrimination of phonemes [a] / [ã], demonstrates not only that the discrimination of these phonemes generate problems in preparatory (20% errors), but also that the relative errors persist sustainably: 15% error in the fourth year license. This could be explained by the fact that nasal sound [ã] does not exist in Turkish.

Discrimination of phonemes [o] / [õ] corpus 6, creates some problems in preparatory classes (15% errors). At the end of the first year of the license, the error rate is divided by two (8%) and remains constant throughout the license (8%). Errors on discrimination of these phonemes persist although quantitatively less important than the discrimination of phonemes [a] / [ã] seen previously.

Contrary to the previous corpus in which discrimination between the nasal [õ] and the closed "o" created some problems in this corpus 7 discrimination between the nasal [õ] and open "o" less problematic. Only 13% of errors in preparatory classes.

As for discrimination [ɛ] in the corpus 8, we see that 33% of preparatory class answers are wrong. The error rate decreases gradually during the licensing cycle but errors persist in the end cycle (15%), the percentage of errors of this phoneme is as high as that for the nasal [ã].

Regarding the part of the problems of discrimination of phonemes groups [i] / [y] / [u] and [ã] / [õ] / [ɛ], it is possible to say that discrimination does not create concerns in general. Even if learners do not evolve in a French environment outside the school system, mistakes in discrimination do not persist or very little if at all. This shows the need to find or develop a more appropriate way to make the ear more sensitive to persistent problems.

The results review of oral production exercises

In this second part of the statistical study the mistakes made in oral production were analyzed, reading more precisely, on problematic phonemes for Turkish learners.

Table 4: Results of the pronunciation of sounds [y] / [u] / [i]

	9 – Speaking [i]/[y]-consecutive		10 – Speaking [y]/[i]-consecutive		11 – Speaking [u]/[y]-consecutive		12 – Speaking [y]/[u]-consecutive	
	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors
Preparatory Class	63	37	55	45	55	45	51	49
License 1	68	32	63	37	61	39	52	48
License 2	60	40	64	36	77	23	47	53
License 3	60	40	77	23	77	23	35	65
License 4	69	31	84	16	95	5	83	17

As it can be observed in the corpus 9, discrimination of phonemes [i] / [y], create problems for Turkish learners, even if they exist in the Turkish language. In this corpus we gave words to read to learners in which the phonemes [i] and [y] were chained. Throughout the five-year cycle, the error percentage is about 33%. This can be explained by the spelling of the phoneme [y] in French is "u" whereas the Turkish phoneme is used for the phoneme [u]. Moreover, most learners have a level of English B1. This prior knowledge of English is then presented as a didactic obstacle during the pronunciation of the suffixes "-ue" and "-us" as the word "issue" [ɪʃu:] and "virus" [vaɪrəs].

The corpus 10 also concerns the phoneme [y], but this time it precedes the phoneme [i] (while in the previous corpus he succeeded him).

Results show that in the beginning of the cycle, still under the influence of English, the spelling "u" to be pronounced [y] is 50% pronounced [u] in transparent words "public", "single" "multiple". The percentage of errors is greatly reduced in the fourth year (16%).

The results of the corpus 11 show that preparatory class consecutive pronunciation of phonemes [u] and [y] is very problematic (45% errors). In the fourth year of the license, the percentage of errors is only 5%. Under the influence of English suffixes "-ture" and "-lure" are mispronounced. This type of error does not seem to be persistent.

However in the corpus 12, the order of the phonemes is inverted relative to the preceding case. The error rate is 49% in preparatory classes. The error is quite persistent in the fourth year (17% of pronunciation errors). Suffixes such as "-our" as in "humour". [u:mər] are problematic because of the English interference. Conducting this analysis we noticed another kind of error: the "dropped e" in the last syllable "tu louches" pronounced /tu louch[e]/

Finally, according to the corpus 9 and 10, it is apparent that not only the place of the phoneme [y], but also the adjacent phonemes, cause variations in the percentage of errors and the persistent nature committed pronunciation errors. In our case, the pronunciation of the phoneme in the corpus 9 [y] at a word succeeding phoneme [i] has shown itself the most problematic. Regarding the corpus 11 [a] / [y] and 12 [y] / [u], we see that the sequence of phonemes [y] / [u] is more problematic.

In the following tables the results of pronunciation problems made in complete sentences and texts are presented.

Table 5: 13 Speaking [y]/[u]/[i] in sentences

	End of preparatory class	License 1	License 2	License 3	License 4
Percentage of correct answers	37	38	30	45	63
Percentage of wrong answers	63	62	70	55	37

In this exercise, the phonemes [y] / [u] / [i] are present in the same sentence consecutively. The results show that students experience great difficulty to pronounce these phonemes in this configuration. In preparatory classes 63% (2 thirds) sentences have errors. In the final year of the license there are fewer errors: 37% but (1/3) of the sentences have errors.

Table 6 : 14 – speaking [y]/[u]/[i] in a text.

	End of Preparatory Class	License 1	License 2	License 3	License 4
Average fault per learner	8	5	3	3	1

In this corpus 14, the phonemes [y] / [u] / [i] are placed into groups of words in a text, but the phonemes are not consecutive. We notice here that the average error is greatly reduced by learning throughout the cycle: 8 errors on average in preparatory class to an error in the final year of license. We do not take into account here the problems concerning the division into rhythmic group, links and chains.

Table 7 : 15 – Speaking : the nasal [ã] (graphie ant/ent)

	End of preparatory class	License 1	License 2	License 3	License 4
percentage of correct answers	45	55	39	38	60
of errors	55	45	61	62	40

In this exercise, the corpus 15, 5 sentences containing -ent -ant and spellings were read by the students. This exercise has proven the most difficult for learners. Preparatory class, 55% of sentences include pronunciation errors. At the end of the fourth year, 40% of sentences contain what do they contain?. In the corpus, the phonemes [ã] have been read very often [ing].

The phonemes constituting verb endings in the third person plural (-ent) tend to be read [ã].

Table 8 : 16 – Speaking : the nasal [õ] in sentences

	End of Preparatory Class	License 1	License 2	License 3	License 4
percentage of correct answers	15	57	71	64	71
Percentage of wrong answers	85	43	29	36	29

The sentences of the corpus 16 on the nasal [õ] located at the end of a word in sentences also contain the phoneme / o / closed. We noticed a high percentage of errors in preparatory classes (85%). After the phonetics classes and course understanding /speaking first-year license, the error rate was halved.

Tableau 9 : 17 – Speaking : nasal [õ]/[ã]/[ẽ] in a text

	End of preparatory class	License 1	License 2	License 3	License 4
Average fault per learner	8	6,6	6,4	6	2

The results of this last corpus 17 representing the evolution in the average number of errors made by students regarding nasal embedded in a text, shows that during the first years of license, the pronunciation of the three nasals create persistent problems. In the last year, according to the results the problem visibly decreases. However, this decline is relative since learners have a strong tendency to read word by word without paying attention to rhythmic groups, links and chains.

CONCLUSIONS AND PROPOSALS

We can summarize the findings of our experiment in four points:

1. First, we find that reading exercises (spelling / speech), namely to associate a phonemes spelling, pose a lot of problems even for phonemes in which discrimination does not constitute a major difficulty. Besides, it is an observation already made by Özçelik (2008).
2. In the statistical analysis we noticed the influence of the place of the phonemes within a word or group of words and the subsequent nature (or not) of phonemes sources of error.
3. Previous knowledge of learners is likely to create a didactic obstacle. In our case the knowledge of English (level B1 for the majority of our learners), generate pronunciation errors in transparent words ("false friends") or like syllables (eg, "personne / person, objet/ object"). False friends words in the native language are also sources of errors (eg « pantalon / pantolon », « camiom/ Kamyon »).
4. It is observed that the majority of progress both in terms of discrimination on the production plan have been achieved during the first year of license. We can explain this by the nature of the first year courses. Indeed these are language courses separated by subject: phonics and spelling lessons, during production and oral reception, grammar, speaking and reading comprehension.

This study finally ends to the following conclusion: a Turkish learner FLE needs specific teaching phonetic materials adapted to his needs because currently such books do not exist on the market.. Despite the quality of the available literature, they have shortcomings in the treatment of certain phonemes, prosodic topics in some sources

of problems for Turkish learners. Our project's main objective to overcome deficiency by creating educational materials dedicated to Turkish students about learning phonics to improve their competence in listening, oral output (pronunciation) and written production (spelling speech) . This material must be used in class and independently by students outside class.

In the context of the project "Uludag FLE" for the development of specific training materials for phonics phonetics, inspired by a similar project dedicated to the Spanish public and carried out in Spain at the University of Leon (<http://flenet.unileon.es/phon/phoncours.html>), so we have the goal of achieving a composite didactic material constituted by a book and an Internet Site providing interactive exercises workable autonomy. This material will specifically designed to be adapted to Turkish learners.

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Lifelong Learning Tendencies of Primary Education Teachers

Nuray KURTDEDE FİDAN

*Department of Primary Education
AfyonKocatepeUniversity
nkurt@aku.edu.tr*

Nuray YILDIRIM

*Department of Educational Sciences
AfyonKocatepeUniversity
nrytas@hotmail.com*

ABSTRACT

This study determined the lifelong learning tendencies of primary education teachers and compared these tendencies using different variables. The participants included 140 primary education teachers from several primary schools in Afyonkarahisar selected through random sampling. The Lifelong Learning Tendency scale developed by Coşkun (2009) to determine the lifelong learning tendencies of primary education teachers was used to collect data. Confirmatory factor analysis (CFA) confirmed that the scale in both the original study and this study had four factors. In addition, the Cronbach Alpha coefficient was 0.90. The data displayed a normal distribution in the dimensions of motivation and persistence, but a non-normal distribution in the dimensions of lack of regulating learning and lack of curiosity. The results revealed that participants have high tendencies towards pursuing lifelong learning. In particular, the tendencies in the motivation dimension were the highest. A significant relationship was only found in the dimension of lack of curiosity with female participants. It was determined that the lifelong learning tendencies of primary education teachers do not differ significantly according to grade level, education level, or professional seniority.

INTRODUCTION

The lifelong learning concept has been known for centuries, but only came to the forefront in the last quarter of the past century. Due to rapid developments in information and communication technologies, we live in the information age and an information society and, consequently, individuals have been forced to update their knowledge. Thus, this situation has propelled the lifelong learning concept to the forefront. Lifelong learning aims to restructure the current education system and develop the ability to recognize education beyond formal education to also include informal educational activities (Güleç, Çelik, & Demirhan; 2012). According to Aktan (2007, 22), this is a concept that includes continuous learning from childhood to retirement. Lifelong learning includes informal as well as formal learning.

The paradigm of lifelong learning was first described in a meeting of higher education ministers from European Union member countries as follows (Aktan, 2007, 23): “Implementing the lifelong learning approach requires a close relationship between working and learning, which requires a closer relationship between education and business life. For this reason, continuing education should be considered more in terms of initial training and instruction. Educational institutions and companies should be learning organizations working in cooperation based on partnership.” There are objectives and practices related to lifelong learning in the European Union projects (Akbaş & Özdemir, 2002). The contribution of lifelong learning and vocational training to employment and the necessity of providing lifelong learning for all ages and occupations are among the foundations of the Leonardo da Vinci program, a European Union program (Duman, 2001). The lifelong learning concept began to be discussed in our country in the 2000s; thus, the General Directorate of Lifelong Learning was established within the Ministry of National Education. Now, lifelong learning is one of the attitudes fostered in the primary, secondary, and higher education (Coşkun, 2009). Therefore, it is of critical importance to determine the views and actions of primary education teachers. This study aims to reveal the lifelong learning tendencies of primary education teachers. In addition, these tendencies were investigated in terms of variables such as gender, grade level, education level, and professional seniority.

METHODOLOGY

This study was designed as a survey study. Surveys revealed the respondents’ attitudes, views, and past or present behaviors (Neuman, 2007). The primary education teachers in the center of Afyonkarahisar constituted the study population. The participants consisted of 140 primary education teachers from randomly selected primary schools. The information regarding participants’ gender, grade level, education level, and professional seniority is presented in Table 1.

Table 1: Participant demographic information.

Variables		Total
Gender	Female	63
	Male	77
	Total	140
Grade level	1 st grade	33
	2 nd grade	27
	3 rd grade	38
	4 th grade	42
	Total	140
EducationLevel	Associate's degree	20
	Bachelor's degree	113
	Graduate degree	7
	Total	140
Professional seniority	1-5 years	8
	6-10 years	12
	11-15 years	15
	16 years and more	105
	Total	140

The participants were somewhat evenly distributed between grade level taught. Most teachers were male, had bachelor's degrees, and had taught for more than 16 years."

The Lifelong Learning Tendency scale developed by Coşkun (2009) to determine the lifelong learning tendencies of primary education teachers was used to collect data. The scale has 27 items with a 6-point Likert-type (6=Strongly Agree, 1=Strongly Disagree). Based on the factor analysis performed by Coşkun (2009), the scale has four factors: motivation, persistence, lack of regulating learning, and lack of curiosity. The Cronbach Alpha internal consistency coefficient (α) of the scale is 0.89.

This study performed confirmatory factor analysis (CFA) in order to ensure the construct validity of the scale. CFA is used to test an existing theory (Matsunaga, 2010). The CFA results determined that the scale had four factors, similar to the original report, and fit indices were obtained ($\chi^2=544.36$; $df=318$; $\chi^2/df=1.711$; $RMR=0.11$; $SRMR=0.069$; $GFI=0.78$; $CFI=0.87$ $AGFI=0.73$; $RMSEA=0.072$). A coefficient of 0.85 and over (Anderson & Gerbing, 1984; Cole, 1987; Marsh, Balla & McDonald, 1988) or a coefficient of 0.90 (Kline, 2005; Schumacker & Lomax, 1996) for GFI, CFI, and AGFI is assumed to be a good fit. A RMSEA value of 0.10 or less is considered sufficient. A value between 2 and 5 for the χ^2/df ratio indicates a good fit, whereas a value less than 2 indicates a perfect fit (Jöreskog & Sörbom, 2001). These results indicate that the model is an acceptable model. In addition, the Cronbach Alpha coefficient was 0.90. The Cronbach Alpha coefficients regarding the sub-dimensions were 0.72 for motivation, 0.87 for persistence, 0.75 for lack of regulated learning, and 0.92 for lack of curiosity. The number of items in each dimension and their Cronbach Alpha coefficients are represented in Table 2.

Table 2: The number of factors, items, and reliability coefficients.

Factor	The number of items	n	Alpha
Motivation	6	140	0.72
Persistence	6	140	0.87
Lack of regulating learning	6	140	0.75
Lack of curiosity	9	140	0.92
Total	27	140	0.90

SPSS software was used to analyze the data. A single sample Kolmogorov-Smirnov test was applied to test the data distribution. According to the coefficients of skewness, the data displayed a normal distribution in the dimensions of motivation and persistence and a non-normal distribution in the dimensions of lack of regulating learning and lack of curiosity, as seen in Table 3. A coefficient of skewness between -1 and 1 indicates that the data does not deviate significantly from the normal distribution (Büyüköztürk, 2007; p. 40). Therefore, both parametric and non-parametric tests were used in the study. The independent samples t-test was used to determine the tendencies of primary school teachers in the dimensions of motivation and persistence according to gender. The Mann Whitney-U test was used to determine whether the dimensions of lack of regulating learning and curiosity differ according to gender. The one-way ANOVA test was used to determine if the lifelong

tendencies of primary education teachers in the dimensions of motivation and persistence differ according to grade level, the level of education, and professional seniority. The Kruskal-Wallis H-test was used to determine whether the dimensions of lack of regulating learning and curiosity differ according to grade level, the level of education, and professional seniority.

Table 3: The Kolmogorov-Smirnov test results and the coefficients of skewness.

Factor	N	p	Coefficient of Skewness
Motivation	140	.000	-.548
Persistence	140	.000	-.949
Lack of regulating learning	140	.000	-1.319
Lack of curiosity	140	.000	-1.528

FINDINGS

The mean scores and standard deviation for the data factors collected to determine the primary education teachers' tendencies towards lifelong learning are presented in Table 4. The primary school education teachers' tendencies regarding the motivation dimension were high and this was followed by the lack of curiosity, lack of regulating learning, and persistence dimensions.

Table 4: Primary education teachers' lifelong learning tendencies.

Factor	N	Lowest	Highest	Mean	sd
Motivation	140	4.17	6.00	5.4571	0.40794
Persistence	140	2.50	6.00	5.0643	0.68808
Lack of regulating learning	140	1.00	6.00	5.0702	0.97389
Lack of curiosity	140	1.00	6.00	5.1095	1.04223

The independent samples t-test was conducted to reveal whether the tendencies of participants regarding the dimensions of motivation and persistence varied according to gender (Table 5). The motivation dimension did not reveal any significant differences between genders ($t_{(138)} = 1.10$, $p > 0.05$). In addition, persistence did not reveal any significant differences between genders ($t_{(138)} = 0.11$, $p > 0.05$). Thus, male and female teachers had similar motivation and persistence tendencies.

Table 5: The t-test results regarding whether the primary school education teachers' lifelong learning tendencies varied according to gender.

Factor	Gender	N	X	S	sd	t	p
Motivation	Female	63	5.41	0.41	138	1.10	0.27
	Male	77	5.49	0.41			
	Total	140					
Persistence	Female	63	5.07	0.71	138	0.11	0.91
	Male	77	5.06	0.67			
	Total	140					

In order to ascertain whether the tendencies of the participants revealed any difference regarding the dimensions of lack of regulating learning and lack of curiosity, the Mann-Whitney-U test was used (Table 6). The tendencies of primary education teachers regarding the lack of learning regulation did not reveal any significant differences based on gender ($U = 2174.500$, $p > 0.05$). Therefore, all primary education teachers' tendencies toward the lack of regulating learning were similar. However, the tendencies of primary education teachers revealed statistically significant differences for lack of curiosity by gender ($U = 1794.000$, $p < 0.05$). The mean score ($X = 80.52$) of female teachers regarding the lack of curiosity dimension was higher than the male teachers' mean score ($X = 62.30$). Thus, female primary education teachers were less curious than the male primary education teachers were.

Table 6: The Mann Whitney-U test results regarding the differentiation of primary education teachers' tendencies based on gender.

Factor	Gender	N	Mean Rank	Total Rank	U	Z	p
Lack of regulating learning	Female	63	74.48	4692.50	2174.500	1.061	0.289
	Male	77	67.24	5177.50			
	Total	140					
Lack of curiosity	Female	63	80.52	5073.00	1794.000	2.662	0.008
	Male	77	62.30	4797.00			
	Total	140					

In order to determine whether the tendencies of primary education teachers regarding the dimensions of motivation and persistence revealed any significant differences according to the grade level taught, an independent samples one-way ANOVA test was conducted (Table 7). The tendencies of primary education teachers regarding the motivation dimension did not reveal any significant differences according to the grade level taught ($F_{(3-136)}=0.666, p>0.05$). Additionally, the tendencies of primary education teachers did not reveal any significant difference regarding the persistence dimension ($F_{(3-136)}=.213, p>0.05$). Therefore, motivation and persistence for lifelong learning did not differ based on the grade level taught.

Table 7: The One-Way ANOVA results regarding the lifelong learning tendencies of primary education teachers according to grade level taught.

Factor	The Class Level	N	X	S	F	p
Motivation	1 st Grade	33	5.54	0.41	0.666	0.575
	2 nd Grade	27	5.40	0.41		
	3 rd Grade	38	5.45	0.41		
	4 th Grade	42	5.44	0.40		
Persistence	1 st Grade	33	5.13	0.58	0.213	0.887
	2 nd Grade	27	5.07	0.72		
	3 rd Grade	38	5.00	0.76		
	4 th Grade	42	5.06	0.69		

A Kruskal-Wallis H-Test for unrelated measurements was conducted to determine whether the tendencies of the participants regarding the lack of regulating learning and lack of curiosity varied according to the grade level taught (Table 8). The tendencies of primary education teachers regarding the lack of learning regulation revealed no significant differences according to the class grade levels ($\chi^2=2.180, p>0.05$). Additionally, no significant difference was found in the tendencies of primary education teachers regarding lack of curiosity and the class grade level ($\chi^2=3.280, p>0.05$). Thus, primary education teachers teaching at different class levels revealed similar tendencies regarding lack of learning regulation and lack of curiosity.

Table 8: The results of Kruskal-Wallis H-test regarding the differentiation of primary education teachers' tendencies according to grade level.

Factor	Grade level	N	Mean Rank	sd	Chi-square	p	Significant Difference
Lack of regulating learning	2 nd Grade	33	76.21	3	2.180	0.536	-
	3 rd Grade	27	72.98				
	4 th Grade	38	71.80				
		42	63.24				
Lack of curiosity	1 st Grade	33	70.03	3	3.280	0.350	-
		27	79.80				
		38	73.18				
		42	62.46				

In order to determine whether the tendencies of the sample primary education teachers regarding the dimensions of motivation and persistence differed according to educational level obtained, the independent samples one-way ANOVA test was conducted (Table 9). There was no significant difference regarding the education level of primary education teachers' and their tendencies regarding the motivation dimension ($F_{(2-137)}=1.477, p>0.05$). Additionally, the primary education teachers' tendencies regarding the persistence dimension did not reveal any significant differences ($F_{(2-137)}=0.707, p>0.05$). Thus, primary education teachers from different educational backgrounds revealed similar tendencies regarding motivation and persistence.

Table 9: The ANOVA results regarding the differentiation of primary education teachers according to their education level.

Factor	Education Level	N	X	S	F	p
Motivation	Associate's Degree	20	5.45	0.50	1.477	0.232
	Bachelor's Degree	113	5.44	0.39		
	Graduate Degree	7	5.71	0.27		
Persistence	Associate's Degree	20	5.15	0.72	0.707	0.495
	Bachelor's Degree	113	5.03	0.70		
	Graduate Degree	7	5.31	0.29		

In order to determine whether the participants' tendencies regarding the dimensions of lack of regulating learning and lack of curiosity differed, a Kruskal-Wallis H-Test for unrelated measurements was conducted (Table 10). There was no significant difference in the tendencies of primary education teachers regarding the lack of regulating learning dimension in relation to the level of education ($\chi^2=2.714$, $p>0.05$). The primary education teachers with a different level of education revealed similar tendencies regarding the lack of regulating learning dimension. In addition, the primary education teachers' tendencies regarding the lack of curiosity dimension revealed no significant differences according to the level of education ($\chi^2=1.627$, $p>0.05$). The tendencies of primary education teachers with different educational backgrounds regarding the lack of curiosity dimension revealed similarities.

Table 10: The results of Kruskal-Wallis H-test concerning the lifelong learning tendencies of primary education teachers in relation to the education level variable.

Factor	Education Level	N	Mean Rank	sd	Chi-square	p	Significant Difference
Lack of regulating learning	Associate's Degree	20	60.85	2	2.714	0.257	-
	Bachelor's Degree	113	73.18				
	Graduate Degree	7	54.86				
Lack of curiosity	Associate's Degree	20	63.83	2	1.627	0.443	-
	Bachelor's Degree	113	72.52				
	Graduate Degree	7	56.93				

An independent samples one-way ANOVA test was conducted to determine whether the primary education teachers' tendencies regarding the dimensions of motivation and persistence revealed any significant differences according to professional seniority (Table 11). The primary education teachers' tendencies regarding the motivation dimension revealed no significant differences in relation to professional seniority ($F_{(3-136)}=0.758$, $p>0.05$). Additionally, the primary education teachers' tendencies regarding the persistence dimension revealed no significant differences according to professional seniority ($F_{(3-136)}=0.142$, $p>0.05$). Therefore, primary education teachers with different professional seniority revealed similar tendencies regarding motivation and persistence.

Table 11: The One-Way ANOVA test results regarding the differentiation of primary education teachers' lifelong learning tendencies according to professional seniority.

Factor	Professional Seniority	N	X	S	F	p
Motivation	1-5 years	8	5.29	0.39	0.758	0.519
	6-10 years	12	5.37	0.46		
	11-15 years	15	5.52	0.40		
	16 years or more	105	5.47	0.41		
Persistence	1-5 years	8	5.02	0.51	0.142	0.935
	6-10 years	12	4.96	0.56		
	11-15 years	15	5.03	0.88		
	16 years or more	105	5.08	0.69		

In order to determine whether the participants' tendencies regarding the dimensions of lack of regulating learning and lack of curiosity differed according to professional seniority, a Kruskal-Wallis H-Test was conducted (Table 12). Primary education teachers' tendencies regarding the lack of regulating learning dimension revealed no significant differences according to professional seniority ($\chi^2=6.007$, $p>0.05$). The primary education teachers did not reveal any statistically significant results regarding the lack of curiosity dimension according to

professional seniority ($\chi^2=2.722$, $p>0.05$). Thus, primary education teachers with different professional seniority levels revealed similar tendencies regarding the lack of learning regulation and lack of curiosity dimensions.

Table 12: The results of Kruskal-Wallis H-test regarding the differentiation of primary education teachers lifelong learning tendencies according to professional seniority.

Factor	Education Level	N	Mean Rank	sd	Chi-square	p	Meaningful Difference
Lack of regulating learning	1-5 years	8	103.00	3	6.007	0.111	-
	6-10 years	12	74.04				
	11-15 years	15	63.50				
	16 years or more	105	68.62				
Lack of curiosity	1-5 years	8	79.13	3	2.722	0.436	-
	6-10 years	12	58.17				
	11-15 years	15	60.50				
	16 years or more	105	72.68				

CONCLUSION, DISCUSSION, AND IMPLICATIONS

This study assessed the lifelong learning tendencies of primary education teachers and compared these tendencies using several variables. In this study, the primary education teachers' lifelong learning tendencies levels were first determined. According to the findings, the lifelong learning tendencies of primary education teachers were high. Similarly, Kılıç and Tuncel's (2014) study found that lifelong learning tendencies of primary education teachers were high. Additionally, the teachers that participated in Ayra and Kösterelioğlu's (2015) study also revealed high lifelong learning tendencies. Özçiftçi and Çakır (2015) found the lifelong learning tendencies of teachers who were enrolled in a distant education non-thesis master's program to be high. Additionally, the primary education teachers' tendencies were highest in the motivation dimension. Similarly, in Ayra and Kösterelioğlu's (2015) study and Özçiftçi and Çakır's (2015) study, the motivation dimension had the highest mean score among other dimensions in the lifelong learning tendencies scale. This finding suggests that primary education teachers generally attach importance to developing new knowledge and skills in different fields. Therefore, they acquire new knowledge and skills to enable personal development. This finding is important for the teaching profession. The motivation dimension is followed by lack of curiosity, lack of regulating learning, and persistence.

Secondly, in this study, the primary education teachers' lifelong learning tendencies were compared according to different variables. Motivation, persistence, and lack of regulating learning tendencies of primary education teachers did not reveal any significant differences according to gender. In light of these findings, it was concluded that the tendencies of teachers from different genders were similar with regard to these three dimensions. In Tunca, Alkın-Şahin, and Aydın's (2015) study, the prospective teachers' motivation, persistence, and lack of learning regulation sub-dimensions had no significant difference according to gender. The results of Yaman and Yazar's (2015) study also suggested that there was not a significant difference between female and male teachers' lifelong learning tendencies. In this study, a significant difference was found only in the lack of regulating learning dimension in favor of female teachers. This study is in line with Tunca, Alkın-Şahin, and Aydın's (2015) findings who suggested that female teachers viewed libraries as boring, did not want to do research to learn anything new or participate in courses/seminars unless required, and preferred to spend time with the people they love or their hobbies rather than for their self-development.

Motivation, persistence, lack of regulating learning, and lack of curiosity sub-dimensions of lifelong learning tendencies of primary education teachers did not reveal any significant difference according to the grade level, level of education, or professional seniority variables. Özçiftçi and Çakır's (2015) study also revealed no significant difference between the professional seniority variable and teachers' lifelong learning tendencies. The findings suggest that the grade level, level of education, and professional seniority did not influence the lifelong learning tendencies of teachers.

Based on the results of this study, in order for teachers to become lifelong learners, activities for their personal and professional development must be organized and teachers must be encouraged to participate in these activities. In parallel, teachers must be encouraged to pursue graduate education and the necessary arrangements must be made in order to enable teachers' personal and professional development. A qualitative study regarding what primary education teachers know and what activities they do for lifelong learning can be conducted. This study can be replicated with a larger sample.

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Limitations of Peace Education in Divided Societies: The Case of Cyprus

Dilek LATIF

Department of International Relations

Near East University

North Cyprus

dilek.latif@neu.edu.tr

ABSTRACT

This paper explores the constraints of peace education in divided societies and takes the case of Cyprus as the research model. It displays the major obstacles to pursuing peace education in the schools of the Turkish and Greek Cypriot communities. The majority of students across the divide attend segregated schools, in which their classmates and teachers originate from the same ethnic backgrounds and where they are subjected to ethnocentric education and official versions of history. School curriculums, particularly the history textbooks, on both sides contain nationalistic themes and historical myths that promote ethnic divisions. History education is used as an instrument of ideological manipulation and propaganda; thus, curricular reform remains an area of contestation. An education system that constructs enmity and fear and promotes distrust or hatred cannot encourage the reconciliation and peaceful co-existence of the two communities. Within this context, this study suggests the incorporation of a peace education lesson into the curriculum on both sides as a course separate from history classes, which will represent an interim solution and has the potential to resolve some of the experienced dilemmas.

Key words: Peace Education, Divided Societies, Curricular Reform

INTRODUCTION

‘Peace education has largely been developed as a scholarly field over the past 40 years and has emerged out of its ‘parent’ field of peace studies’ (Bajaj and Chiu, 2009, p.442). UNFICEF’s definition of peace education refers to the process of promoting the knowledge, skills, attitudes and values needed to bring about behavioural changes that enable children, youth and adults to prevent conflict and violence, both overt and structural; to resolve conflict peacefully; and to create conditions conducive to peace, whether at an intrapersonal, interpersonal, intergroup, national or international level (Fountain, 1999). In this sense, the primary aim of peace education is to educate and empower individuals to achieve peace by assuming individual responsibility. This responsibility will affect one’s sense of respect for neighbours and strangers, while promoting the larger goals of conflict transformation and ultimately supporting the movement towards greater respect for human rights. Peace education also deals with elements of antiracism, conflict resolution, multiculturalism and encounters the challenge of mutual animosities, shared painful memories, and strong views of the ‘self’ and the ‘other’ (Salomon and Nevo, 2002, p.7).

Education has a vital role in the development of personal identity and it is one of the most important agencies for cultural reproduction, socialization and communal identity formation. In ethnically divided societies, particularly where conflict lasts for generations, children have been taught to fear, distrust and hate the other, considered by the nationalists as the ‘enemy’. Social mechanisms and schools play a key role indicating the ‘enemy’ and building prejudices. On the other hand, politicization of education is dangerous for peace and reconciliation. Ethnic attitudes are shaped early and, once positive or negative prejudices are formed, they tend to be decisive for the future. In this respect, school education and socialization experiences are critical in the formation of ethnic attitudes.

One of the greatest obstacles to peace education in areas with intractable conflicts is the existence of official narratives that explain the conflict in a way that legitimizes its own position and de-legitimizes the other’s (Solomon and Nevo, 2001; Tinker, 2016). Prominent scholars such as Ernest Gellner (1997), Anthony Giddens (1991) and Anthony Smith (1991) argued that national curricula, history education and textbooks, are designed to transmit ideas about the nation and the state, as well as to create, maintain and reinforce national identity. Official narratives are generally reflected in national education systems and shape history textbooks and school curriculums. History education is usually determined by political factors. Education systems become crucial institutions for the survival of the nation, as the official history education provides a basis for “a collective narrative that reiterates the inevitability of the nation’s existence and grandeur” (Christou, 2007, pp. 710-711). In this direction, schoolbooks contain statements glorifying their own nation and disparaging others (Pingel, 1999). The national history curriculum reproduces a nation’s desirable vision of itself and ignores any references to its ‘dark pages’ in history (Christou, 2007, p.711). Thus, in many conflict and/or post-conflict societies, the revision of history textbooks portraying the other as an ‘historical enemy’ have been on the conflict transformation agendas of peacebuilders, whether they are local or international.

A survey of the national narratives reflected in the history textbooks on both sides of Cyprus shows that each side has used history to construct its own identity while marginalising the other (Latif, 2010; Papadakis, 1998; Spyrou, 2002). As in many post-conflict societies, education is used as a tool to promote the conflict on the divided island. Schools are used for endorsing nationalism and militarism through activities such as celebrating national motherland days, naming schools after military heroes, showing pictures of atrocities and holding competitions in poetry and essay-writing based on nationalistic themes or glories of the past of each nation (Hadjipavlou, 2000). After the division of the island in 1974, education had become extremely politicized and the school books developed by both sides described the past in accordance with their own interpretations, cultural myths, stereotypes and prejudices. Hence, the elimination of dividing elements from the textbooks and curriculums used in the schools of both communities in Cyprus has been essential for peace and reconciliation in the following years.

HISTORICAL FRAMEWORK

Cyprus has been religiously and culturally diverse since medieval times, inhabited by various civilizations, and colonized by various empires and outside rulers such as the Romans, Byzantines, Lusignans, Venetians, Ottomans, and the British. This diverse, although somewhat integrated, society of the island during the Lusignan dynasty of the twelfth to fifteenth centuries lasted until the end of Venetian rule in the sixteenth century. Ensuing rule by the Ottoman and British empires respectively led to the division of the inhabitants along Orthodox Christian and Muslim religious lines. The distinct separation prevailing between Christians and Muslims since Ottoman times was maintained by the British colonial administration. Under the Ottoman “millet system,” which was used to administer the island from 1571 to 1878, Ottoman subjects could identify themselves according to their religion and were divided into religiously oriented communities. Each “millet” possessed a significant degree of autonomy regarding its own social, cultural, educational and legal affairs. Orthodox Christians were acknowledged as separate “millet” and the other religious communities then gradually integrated and/or assimilated into the larger Greek Orthodox society. The Turkish Muslim community that came from Anatolia after the Ottoman conquest in 1571 was subject to Islamic law. Education was provided for the Muslims in medreses and tekkes. The head of the Orthodox Church was the supreme authority for the education of the Greek Cypriot community. This separation of the school administration was maintained by the British and has remained in practice to the present day in Cyprus.

The principal division of the two main communities of the island, the Greek and Turkish Cypriots, started in the mid-1950s. The inter-communal conflict began against British colonialism, and developed into a violent struggle with bloodshed in the late 1950s. Similar to a number of former colonies, Cyprus achieved independence in 1960 from the British Empire. After the establishment of the bi-communal Republic of Cyprus, two communal chambers exercised legislative powers with regard to all religious, educational, and cultural matters. The Greek and Turkish communal chambers coordinated their education policies with their motherlands, Greece and Turkey respectively, which contributed to the creation of two rival communities rather than a united Cypriot state (Karagiorgos, 1986, p.152). The Republic of Cyprus, which was designed on the basis of a consociational federation, collapsed within three years due to the relapse of inter-communal disputes. The physical division of the island came after the Turkish military intervention following a coup d'état by Greek army officers in 1974. In response to the failing negotiations for finding an acceptable solution to the Cyprus problem, the Turkish Cypriot community declared the Turkish Republic of Northern Cyprus (TRNC) in 1983, which is only recognized by Turkey.

A number of unsuccessful talks were coordinated by the United Nations (UN); however, the two principal communities diverge on a number of significant issues. The most comprehensive UN attempt at a solution to date, the ‘Annan Plan’, was negotiated over a period of two years, during which five different versions were produced before a referendum was held in 2004 (Varnava and Faustmann, 2011). The final version of the Plan was accepted by 65% of the Turkish Cypriots, but rejected by 76% of the Greek Cypriots in the April 2004 referendum, which ultimately led to its failure. Consequently, the Republic of Cyprus entered the European Union (EU) on 1 May 2004 as the only ‘legitimate state’ on the island. At present, the EU acquis is suspended in the areas administered by Turkish Cypriots and even the formal accession of Cyprus to the EU was not a sufficient catalyst to forge reunification. Following a breakthrough, the current round of negotiations that commenced in 2008 is now continuing at the official level with the aim of reaching an acceptable solution for the reunification of the island.

CONTESTED HISTORY TEACHING AND POLITICIZATION OF EDUCATION

Since the division of the island, public schools, national curricula and history education and textbooks have been used on both sides to further political goals, legitimise official narratives and solidify ethnic identities defined vis-à-vis the other (Makriyianni et al., 2011; Vural, 2012). In divided societies, educational systems, particularly history teaching, which is often supervised by the state, is commonly used to propagate a narrative focusing on the suffering of the nation in order to legitimize its political goals. Through school education, the Greek and Turkish

Cypriot communities both legitimize their respective political positions in such a way that future citizens are prevented from developing a critical approach (Latif, 2010). The official historical accounts of the Greek and Turkish Cypriot communities mirror each other in a way that they construct blame, silence the pain and de-legitimize the historical existence of the ‘other’; ignoring any processes of socio-cultural interactions between them (Kizilyurek, 1999; Vural and Özuyanık, 2008; Papadakis, 2008). The conflicting historical narratives of each community presuppose that Cyprus ‘belongs’ to them on historical grounds (Papadakis, 2008). Each community relays and justifies its interpretation of events in the light of current political discourses, predominantly using history education and textbooks.

For instance, to counterbalance the Greek Cypriot official narrative stressing the Greek and Hellenic origins of Cyprus, the Turkish Cypriot national history emphasized the Ottoman/Turkish nature of the island instead. Before the division of Cyprus in 1974, the official Greek Cypriot history and narrative focused on endorsing the demands for the unification of Cyprus with Greece (Kizilyurek, 1999). After the 1974 war, the Turkish Cypriot education system aimed at the legitimization of the division of Cyprus on the basis that “the two communities in Cyprus cannot live together” (Latif, 2010; Kizilyurek, 1999). The period of intercommunal tension from 1964 to 1974 was presented in history textbooks as a “dark period” for the Turkish Cypriots, where “the whole responsibility lies on the Greek Cypriot side.” (Latif, 2010; Makriyianni, et al., 2011). The “happy end” for the Turkish Cypriot community arrived in 1974, when Turkey undertook a military intervention. The narrative of the history textbooks argues that “with the declaration of the TRNC, the Turkish Cypriot people, who have been fighting against all sorts of oppression and cruelty for years, founded their own state after hundreds of years, in which they will eternally live in freedom and independence” (Latif, 2010, 40). On the other hand, while the 1963-1974 period is not adequately mentioned in the Greek Cypriot textbooks, the 1974 war and its consequences is regarded as an invasion (Papadakis, 2008). From an ethnocentric perception, the 1974 war is depicted as the tragic end for the “Greeks of Cyprus” without acknowledging the suffering of the Turkish Cypriots. The inter-communal strife in the 1960s also has a very limited space in the textbooks and is described from a Greek Cypriot perspective (Makriyianni et al., 2011; Papadakis, 1998). The post-1974 Greek Cypriot education system’s primary objective included the “I don’t forget and I struggle” slogan (Christou, 2007).

International peacebuilding initiatives for conflict transformation and official narratives promoted by school education thus work for cross purposes. The conflict transformation method intends to address the root causes of the conflict, alter the negative attitudes and empower parties to handle their conflict by peaceful means. In contrast, the central educational systems of each side focus on constructing national identities and shaping national collective memories and remembrance, which is not helpful in creating an understanding of the ‘other’ and encouraging the peaceful co-existence of the two communities.

This issue has been raised in the past by foreign peace mediators, who questioned how any settlement would work given the nationalistic content of school history books (Cyprus Mail, 2006). During the Annan Plan negotiations, a member of the Council of Europe, Mr. Valter Svimer, after a meeting between the two parties to consider the Council’s contribution to the settlement of the Cyprus issue, stated that ‘the Council would take initiatives in promoting the revision of history books by both communities so as to wipe out any allusion to hatred or any misinformation with respect to either sides’ (Cyprus Mirror, 2003). The goal of such initiatives has been to redefine and re-identify ‘us’ and ‘them’. However, in order to reconceptualize national identity, and thereby pave the way to reconciliation between the conflicting parties, there is a need for such a political demand to materialize within the wider society.

Although during the Annan Plan negotiations the Council of Europe demonstrated an eagerness to cooperate with both the Turkish and Greek Cypriots to revise the secondary education history books, the outcome has been only partially successful. On the Greek side, an Educational Reform Committee was established to implement a general reform in 2004. The Committee’s report concluded that the general orientation and ideology in Cypriot education remains to a large extent “Greek-Cypriot centric”, “ethnocentric” and “culturally monolithic” (Philippou and Makriyianni, 2004). The Greek Cypriot authorities’ efforts at curricular reform led to divisions within the previous coalition government. Although the Republic of Cyprus Committee for Educational Reform proposed a report with suggested changes, the Greek Cypriot Minister for Education and Culture did not announce any revision of Cyprus history textbooks. On the Turkish side, after the pro-reconciliation Republican Turkish Party (CTP) came to power in 2003, a visible change took place, both in the education system and in history textbooks. The Cyprus history textbooks in use since 1971 with an ethnocentric and ethno-nationalist approach were re-written in 2004 following the Annan Plan referenda.

The revised Cyprus history textbooks deviated from the previous ethnocentric perception of history and they declined any obvious indication of the national enemy or the ‘other’ and adopted multicultural and student-centred

approaches (Karahasan and Latif, 2010). After this reformation of history education, right wing circles instigated a fierce debate over the content and approach of the new textbooks, arguing of the dangers of an erosion of national identity and termination of national consciousness. Shortly after the National Unity Party (UBP) were elected to the government following the general elections in April 2009, the revised Cyprus textbooks were replaced by new Cyprus History textbooks, reverting to the old-style texts. Although the change of Turkish Cypriot history textbooks in 2004 was used to stimulate a debate for the revision of Greek Cypriot history textbooks, the latest change has now lifted the pressure on the South. Ironically, this inaction of the Greek side may have contributed to the re-revision of the Turkish history books.

In parallel to the attempts of the Council of Europe, the failed Annan Plan proposed the establishment of an impartial Reconciliation Commission to promote dialogue and understanding among Turkish and Greek Cypriots. This Commission was intended to promote dialogue regarding the past, prepare a report on the history of the Cyprus problem as experienced and interpreted, and also to make recommendations including guidelines for publications and school textbooks. However, since the rejection of the Plan, sufficient improvement has not been implemented regarding reconciliatory education, except for the funding of several education projects (Yaman, 2007) by the EU Commission and UNDP-ACT. The Association of Historical Dialogue and Research (AHDR) and the POST-Research Institution (POST-RI) are the two exceptional NGOs that have been working on the teaching and learning of history, and have developed a range of projects, activities and publications, such as teacher training workshops and the creation of supplementary materials.

Since July 2014, the European Union has been funding a project entitled 'Education for a Culture of Peace as a Vehicle for Reconciliation in Cyprus' implemented by POST-RI in partnership with the AHDR. As part of the project, the Republic of Cyprus Ministry of Education and Culture allowed the project partners to provide in-service training to the Greek Cypriot teachers in regard to the culture of peace (Beyidoğlu, 2016). On the other hand, a positive development occurred in November 2015, when the Greek Cypriot and Turkish Cypriot Presidents, Nicos Anastasiades and Mustafa Akinci respectively, agreed on the establishment of a new technical committee for education, which was tasked with reviewing educational practices. The committee is working on how education can contribute to conflict transformation, peace and reconciliation (Christou, 2015). Nevertheless, a transformative outcome has not currently been achieved from either initiative.

CONCLUSIONS

One of the main approaches of peace education is to empower individuals to achieve sustainable peace through inquiry, critical thinking and dialogue towards greater equity and social justice (McGlynn and Zembylas, 2009; Johnson, 2013; Tinker, 2016). There is an emergent need for such alternative educational perspectives to help the new generation of Cypriots learn impartially about each other, break fixed ideas, and construct discourses and ideologies about the 'other'. Students need to be introduced to the skills through which they can evaluate historical facts depicted by the school curriculum and textbooks critically and independently using a multi-perspective approach. A possible instrument other than the revision of textbooks and reformulation of national narratives, which could not be achieved until this point due to constraining political structures and processes, may be the incorporation into the curriculum on both sides of a peace education lesson as a course separate from history classes. This would constitute an interim answer and could potentially add to other peacebuilding efforts in Cyprus and resolve some of its dilemmas.

While governments and educational authorities have been reluctant to change their history curriculums, international peacebuilding actors in Cyprus could be instrumentalized to exert pressure on the parties to at least take this incremental step. In this framework, peace educationalists and experts in this field should develop programmes, separate from history classes, curriculums, and other educational material, to integrate peace education classes into all levels of education. They should explore new frontiers of peace-based education and offer practical suggestions on how to implement them within the existing education system. The subject matter of peace education classes can cover topics including gender, environment, race, democracy, human rights and sustainable development. Additionally, introducing conflict resolution training, cooperative learning programmes and other instruments of peace education in schools would enable students to develop attitudes to resist societal ideologies, resolve conflicts in a constructive way and examine methods to effectively apply these methods into their lives (Castro and Galace 2008, p.26). In the long run, such an undertaking would spread a culture of peace to the wider society.

With the help of such an approach, young people would be able to evaluate the Cyprus conflict beyond the limits of national narratives, by deconstructing and transforming them. Additionally, a class on peace education would introduce students to practical skills that could promote harmonious co-existence and tolerance for diversity, empathy, eliminate discrimination and create a pedagogical culture of peace, not only for one another but for the

differences. Moreover, peace education lessons would enable students to challenge the culture of disempowerment; thus creating a shift from passive learning to participatory and active learning for social empowerment. This would eventually contribute to inter-ethnic understanding, enhance inter-community relations, and take the youth beyond the Cyprus conflict towards restoring relationships.

Besides, peace education has the potential to create civil peace. Peace education not only develops values and critical thinking skills to empower individuals but also to understand how global issues such as peace, development and the environment interact and are relevant to their everyday lives and their local conflict. In post-conflict settings, there is a tendency of educational systems and texts to reify ethnical divisions, stereotypes and negative perceptions, making the task of conflict resolution harder. Peace education classes may assist in eliminating the stereotypes that often plague societies with ethnic conflicts. Peace education can lay the foundation for healing; rebuilding and transforming with its bottom-up conduct and contribute to the development of a cooperative multi-ethnic society. Educating and empowering individuals about a set of values and behaviour conducive to nonviolence and solidarity could resolve local conflicts.

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Listening Comprehension in French Language Teaching – The Situation at Secondary Schools in the Czech Republic

Michaela MÁDLOVÁ

University of Hradec Králové,

Department of French Language and Literature

Czech Republic

michaela.madlova@uhk.cz

ABSTRACT

Listening as a receptive skill represents one of the main objectives in language acquisition, and it is an irreplaceable source, as well as a means, to learn and command the phonic aspects of a target language. It occupies a pivotal position in language communication and embodies the most frequent speech ability in foreign languages. The paper focuses on the standing of listening comprehension in teaching French as a foreign language at secondary schools in the Czech Republic. Its objective is to inform how this aspect is perceived by students and teachers of French; how often, how regularly, and in what form listening is used in lessons; how popular it is with Czech students and their teachers; whether (and if so, what kind of) impact it has on other language skills: reading, writing and speaking. The paper analyses the data gathered during the realized researched via methods of questionnaires and interviews. Importance of the discussed topic is corroborated by the well-known fact concerning the important role verbal communication and auditory perception play nowadays, when knowledge of foreign languages has become indispensable.

INTRODUCTION

According to Marie Krčmová (2009), a great number of world's languages exist based on two basic realizations – spoken and written. “While expressing various messages or ideas, both spoken and written modes are equal; it can be generalized that a language system (langue) corresponds with two speech realization types (parole) – spoken and written.” (Krčmová, 2009, p. 8) Focusing on spoken realization of language, speaking and understanding come to the fore. Being able to speak a foreign language is equally important to being able to understand it.

It is relatively simple to ensure being understood by using a few words and a number of gestures and facial expressions. When listening to another person, however, it is necessary to be equipped with basic language knowledge which provides the meaning to what was heard. Listening is thus a natural method of foreign language acquisition: children observe and understand far earlier than they are able to speak.

The present paper analyses listening comprehension as a receptive language skill – one of the main target skills to master a foreign language. The paper briefly outlines specificities of French language education at secondary schools in the Czech Republic, especially the role of listening in relation to other language skills. Finally, the paper introduces the research conducted at secondary grammar schools of Hradec Králové region in the Czech Republic. The obtained data are commented and research results presented.

FRENCH LANGUAGE LESSONS AT SECONDARY SCHOOLS IN THE CZECH REPUBLIC

As a second language, French is taught at Czech secondary schools most frequently next to German, Spanish and Russian. The scope of languages at secondary schools reflects the qualification of teachers, a fact already significant at primary schools. The Czech school system introduced compulsory education of the second foreign language in the school year of 2013/2014. While English language is compulsory from the third grade, the second language classes start no later than in the eighth grade, i.e. with a minimum duration of two years. Primary school students hence start attending secondary schools equipped with the basic knowledge of a second language and usually continue with studying the second language further, if possible.

However, there is a chance of selecting a language they did not at primary schools, therefore they begin it at the elementary level.

The choice of the second language varies regionally (regions bordering Germany) and also in time. Particular foreign languages are subjects to fashion waves among students or parents. Quite recently there has been relatively low interest in French language, which is caused by the increased demand for Spanish. French is considered a difficult language with problematic pronunciation, whereas Spanish seems simpler. To avoid problems with selecting the second foreign language, such as fragmentation of groups or forcing small groups of students to join the majority, several secondary schools offer only one Romance language, mostly French.

Secondary grammar schools aim at students reaching the output level of their second foreign language at B1 of the Common European Framework of Reference for Languages (hereafter CEFR). Language classes are usually divided, with the number of average group at 15 students. In reality, there exist heterogeneous language level groups resulting from different output level while leaving primary schools. Another complication is groups with exceeding number of students (20 or more). This results from particular school requirements (organization of

language lessons, timetables, qualified teachers), and willingness to adapt to students' wishes (the language is selected by too many students, or too few – by accepting the choice too uneven groups consequently appear). The usual volume is three lessons per week; older students can elect optional seminars thus increasing the weekly amount by other two lessons. The seminars are conducted more on the conversation basis or the preparation for the school leaving exam.

LISTENING COMPREHENSION AS A FOREIGN LANGUAGE SKILL

The development of language skills is one of the crucial tasks of a foreign language teacher. Foreign language education focuses on the practice and development of all language skills. The present paper discusses four elemental language skills, paying special attention to listening comprehension at secondary schools.

Ludmila Kollmannová (2003) identifies listening in a foreign language as the most frequent language skill. "W. M. Rivers expresses quantitation ration in the relationship of four basic language skills (i.e. listening, speaking, reading and writing) as 8:5:4:3. No matter how imprecise the statistics in humanities appear and how particular individuals' practical use may differentiate, the priority and frequency of listening remain an objective reality. Another objective reality, although a negative one, is the fact that listening as an autonomous language skill, requiring specific educational methods, is paid inadequate attention in practice." (Kollmannová, 2003, p. 7)

The above cited facts reflect all foreign language acquisition; according to Lancien (1998) and Perrin (1998), listening comprehension plays a seminal role in communication. The role of listening, while the subject receives and process spoken information, is unsubstitutable for the development of other language skills in a foreign language.

"To communicate means to understand and speak. Listening is often considered more passive than speaking, since it appears that while listening one does nothing. However, this idea is wrong: listening represents a highly intensive activity. One can hear sounds difficult to identify which need to be transformed into words carrying a certain meaning. This includes the way one imagines a particular situation of the subject of the discussion. All new information mentioned by the speaker must be monitored. Listening is thus a highly complex activity, since all aspects of lingual and extra lingual communication contributing to the meaning of the utterance must be processed." (http://epc.univ-lorraine.fr/EPCF_T/methode_11_FT.html)

Psycholinguists agree on the fact that understanding a language is not a purely reception and decoding of a language signal, but an active process. If a subject's goal is to understand a spoken language, it aims from a sense percept of a spoken signal (i.e. auditory perception of a spoken utterance) to understanding of its message and hence the speaker's intention.

It is obvious that a good level of understanding enables one to orient themselves in words and expressions which can be used consequently in a similar situation.

RESEARCH PREPARATION AND REALIZATION

Listening comprehension was the chief aspect of the research conducted from April to May 2017 at secondary grammar schools in Hradec Králové region in the Czech Republic. The aim was to map the role of listening comprehension in French language lessons; secondly the project aimed at locating the most efficient existing materials in understanding French spoken language. Based on the research findings (obtained from testing and students' own evaluation), the project finally attempted to recommend most effective aspects and materials for foreign language lessons.

While choosing the topic the following statements were considered (reflecting their long-term presence in schools – noted by the rich teaching experience of the author as a teacher at secondary and tertiary school level: teaching French, French lesson observations):

- students are worried from not understanding spoken texts;
- listening does not belong among favourite language skills;
- listening is not regularly and sufficiently included by teachers in French lessons;

The author is convinced that

- there are materials leading to more successful understanding of authentic texts in a foreign language;
- there is a direct proportion in the frequency of listening practice and undersetting success, which positively influences other language skills (most notably speaking) and motivates students.

The research question was formulated as follows: How often and how frequently is listening included in French lessons? What is the influence on students' success in understanding the spoken mode?

Complementary sub questions were asked:

Q1: What is students' attitude to listening?

Q2: What is teachers' attitude to listening?

Q3: What are noticeable positive results (improved understanding) of regular listening exercises during lessons?

Q4: Is listening beneficial for the improvement of the other three language skills (speaking, writing, reading)?

Q5: Is the inclusion of listening useful and efficient for learning French language?

The main hypothesis and partial hypotheses were formulated in the following way:

H: Regular inclusion of listening in French lessons leads to the improvement of understanding and further motivation of students.

H1: Students are worried about not understanding.

H2: Listening comprehension is not a favourite language skill among students.

H3: Listening comprehension is not a favourite language skill among teachers.

H4: Teachers do not regularly and sufficiently include listening comprehension during French lessons.

H5: The more frequently students practise listening, the more successful they are in understanding speaking.

H6: Successful understanding positively influences other language skills, mainly speaking (pronunciation, intonation, vocabulary).

H7: The inclusion of listening in French lessons is useful; listening is an essential part of French lessons.

The research addressed secondary grammar schools from Hradec Králové region. The schools addressed included state, private and church secondary grammar schools with four, six and eight year programmes. The choice of schools was limited by their offer of French language as a second foreign language taught. Out of totally 11 addressed schools five schools agreed to participate in the research, resulting in groups of seven teachers. Two schools refused to participate from time constraints (school leaving examination preparation, school planned events or being behind their thematic plans). Two schools refused on the basis of having insufficiently advanced French language classes.

The research included 101 students aged 16-19 (age and gender criteria were insignificant to the project) of the required B1 level (sometime reaching B2) according to CEFR. Students' language level was pre-discussed with particular teachers and consequently verified by consulting their listening comprehension test results. All teachers of participating groups agreed to join in the research. The sample consisted of seven teachers – six females and one male, aged 30-58 with their teaching experience from 7 to 25 years, however, in majority 10-15 years. All respondents were informed about the anonymous use of names, the project outline, schedule and aims. The principle of the mixed design was used by combining qualitative and quantitative approaches to data collection and analysis.

The aim of the research was to identify how frequently and regularly listening comprehension appears in French language lessons, what particular type of listening is used, how popular the language skill is among students and teachers, and how the understanding to spoken mode in a foreign language can be made easier. The research was conducted via questionnaires distributed among students of French language; to obtain data from teachers semi-structured interviews were used. The interviews were recorded and obtain data transcribed and analysed via open axial coding based on the grounded theory (Strauss and Corbinová, 1999).

The questionnaire *Listening Comprehension in French Lessons at Secondary Schools in Hradec Králové Region* (devised by the author) identifies how frequently and in what form listening is used in French language lessons. It further questions its sufficient use, the relation to other language skills, in particular what is the time allocated to each language skill and to what extent they are popular with particular students. Furthermore, whether the relation between popularity and success in listening positively influences the development of other language skills and if so, how this is manifested. Next, the questionnaire identifies students' attitudes towards listening and what in particular contributes to successful listening. Finally, the questionnaires ask if students experience French language outside of class from their own initiative.

The aim was to obtain relevant data from both participants in educational process – from the students and the teachers – and to compare them. The semi-structured interview as a research method was allocated to teachers. Formulated questions could be modified in response to the answers provided: teachers could express their opinion or fill in relevant information. The research results benefited from differences in the length of teachers' experience, variety of age groups represented, and from the diversity of answers.

Most of questions from students' questionnaires were mirrored in the interviews with teachers. Besides that, the interview identified teachers' attitude to listening in French lessons, most particularly teacher's own proposal to make understanding in a foreign language easier.

Besides questionnaires and interviews a pilot experiment was conducted to test the understanding using three didactically prepared reports from French TV channel TV5Monde. The aim was to identify which multimedia materials lead to more successful understanding, yet reflecting students' individual styles of learning.

COMMENTS AND RESEARCH RESULTS

Data collected from questionnaires and interviews provided results which are presented and commented below:

Teachers include listening in French lessons on the following way:

- listening exercises from textbooks

Such exercises, however, are not satisfactory for some teachers who then look for additional materials mainly on the internet. This results in time demanding preparation since there are many sources whose quality and language level are difficult to designate. Teachers would appreciate didactically prepared short (max. 5 minutes) listening

comprehension recordings. Listening exercises from textbooks are also the most frequent listening methods students of French lessons experience (81%).

- songs

From teachers' experience songs are usually popular among students. This fact is confirmed by students who place songs (besides films) as the most enjoyable listening activity for improving the understanding of spoken language.

- films with French subtitles (for advanced) and Czech subtitles (for less advanced students)

From time-saving reason teachers more frequently include film excerpts or trailers rather than whole films. Subtitled films, short films and short fairy tales appear next to songs among most popular listening activities among students.

- television and radio broadcast, namely TV5Monde and RFI

News reports also features among listening activities most favoured by students.

Teachers agree that it is vital for students to be absolutely sure what is required from them. Listening exercises aimed at choosing a relevant information from the text seem effective. The important phase is the listening exercise preparation and task articulation so that students can focus their attention on essential information. These findings were confirmed by several students' answers responding to the relevance of activities leading to the improvement of listening skills: YES/NO choice or multiple choice.

Students' answers reveal that listening comprehension exercises are included in lessons in various ways using diverse materials. Students and teachers agree that listening exercise includes also listening to the teacher using the target language during the lesson. The majority have agreed that the use of target language in lesson should be encouraged more.

Most students agree that the practice of all four language skills (listening, reading, speaking and writing) is represented evenly in French language lessons: 54% completely agree + agree, 34% disagree, 12% cannot say. When a multiple choice question should indicate the activity practised the most, students select most frequently speaking (58%), followed by reading (25%); listening is selected as the last skill (7%). This fact does not fully correspond with teachers' answers where only the position of speaking as first agrees with students' choice. This may be affected by the fact proven by other answers that several students might have misunderstood the notion of "reading" (although each language skill was initially explained). Reading was not understood as "reading comprehension," but "reading aloud" – hence including all possible texts read in class.

Students favoured lesson activities aimed at speaking practice 49%; only 6% state listening as the most popular. Listening is thus most frequently stated as the least successful language skill (based on the scale I am most successful at... and least successful at...). Only 2 students mention listening on the first place. However, the first place most frequently includes reading (54 students) and speaking (28 students). There is a correlation between a favoured language skill, the feeling from its successful management, and the most frequently practised skill.

Based on respondents' answers the increase in foreign language understanding would be enhanced by the contact with native (stated by 100% or interviewed teachers), ideally from the beginning stage of the language learning process. The issue of native speakers appears equally in students' responses – *"The contact with a native speaker enables further understanding; not only sounds but visual contact would help."* Unfortunately, native speakers are absent at the majority of participating schools.

Regarding the understanding of spoken language, teachers mention their practice via short didacticized, thematically and vocabulary aimed videos for secondary school students. Some respondents mentioned the absence of image during listening practice from textbooks, which would enable better understanding. Besides essential regular training, the already mentioned "aids" are focused listening via prepared exercises, accompanying transcripts, or thematic knowledge. Students frequently highlight beneficial aspects of successful listening interesting topics, topical issues, familiarity with the theme or repeated listening. Both teachers and students agree that visiting France or a Francophone country is highly contributive because of the authenticity of language and the setting. Therefore, teachers of French organise school trips to France and if possible, attempt to run exchange schemes with French parties. Students are interested in such activities, however, in majority (64%) do not seek any extracurricular activities to experience spoken French language.

It is necessary to point out that interviews frequently included the issue of time constraints during a school year. Proposals supporting the increase in hourly volume of foreign language lessons at secondary schools appeared mentioning at least one double lesson per week.

HYPOTHESIS VERIFICATION

H1 *Students are worried about not understanding* was confirmed.

The majority of teachers (57%) consider students' worry and fear listening exercises if included in marked tests. On the contrary, if not marked, listening exercises are popular (*"they quite like it"*) in lessons, especially in form of songs.

When asked if worried about not understanding during listening comprehension practice, 91% students responded positively (always, often, sometimes). The choice “absolutely not” was selected only by 4 students. The fear from listening (I am afraid a lot, quite, a bit) was expressed by 75% questioned.

H2 *Listening comprehension is not a favourite language skill among students* was confirmed.

29% of teachers claim that general attitude or majority reaction of students cannot be expressed. Listening is popular among language gifted students (“*trying to listen to native speakers is motivating for them*”); listening is a threat to not talented language students. There are opinions holding that listening gains popularity with age. An important fact has been raised: if students are familiar with what to concentrate on, and the language level corresponds with theirs, there are positive reactions in all classes.

Regarding the popularity of listening among students, 49% identifies with (absolutely agree, agree) the statement *I like the parts of French lessons when we practise spoken language understanding (listening)*. There is a difference between the popularity of listening among teachers, see below. When asked to choose from four language skills, only a small amount of questioned students like the most listening exercises – mere 6%. Only 2 students mention listening as the most successful skill (I am the best at...) from all language skills. As already mentioned, the obtained data demonstrated a correlation between the preferred language skill and the success rate in the language skill. In their own words students most frequently claim success in their favourite activity, or vice versa, they prefer the skill which they excel in.

H3 *Listening comprehension is not a favourite language skill among teachers* was not confirmed.

Interviewed teachers expressed positive attitude to listening. Listening is their favourite language skill: “*I love it.*”, “*I like listening activities.*”, “*It is an absolutely vital competence which I would like to focus on more.*” This fact is reflected in the representation of individual language skills in French lessons measured in time – teachers mostly (71%) emphasize that the ration should be balanced, yet the most frequent activities in their lessons they mention listening and speaking. Some teachers observe that foreign language lessons should be focused on listening from initial stages referring thus to mother tongue acquisition, when before actually speaking, children first observe and understand the communicated language.

H4 *Teachers do not regularly and sufficiently include listening comprehension during French lessons* was partially confirmed.

“Researches confirm that listening as a specific form of human cognitive activity improves its quality by frequent repetition (Piaget, 1966, 1971; Leontiev, 1966 and others).” (Hendrich, 1992/93, s. 327) Foreign language lessons thus need to provide sufficient suitable stimuli for exercising and improving listening comprehension.

100% teachers stated they include listening regularly in their lessons (“*Yes, I use listening regularly.*”), although in various amount: 57% include at least a short exercise (almost) every lesson; 43% at least once a week by adjusting the lesson content according to the mood of the class. 29% of teachers are satisfied with the amount of listening in their classes; 71% would prefer to incorporate listening more frequently, which is, however, due to their time constrains impossible. Thematic plans need to adhered to and other skills to be practised.

76% of students’ answers support teachers’ statements and further claim that listening composes a regular part of the lesson (8% disagree, 16% do not know or cannot judge). 48% consider listening in lessons sufficient, 26% insufficient; more than a quarter of questioned students cannot evaluate sufficiency/insufficiency. It is clear that unlike teachers, who mostly see listening insufficiently present in lessons, almost a half of students considers the amount of listening sufficient. 39% of students would appreciate more frequent inclusion of listening. 35% think the amount of listening is just right. 26 % manifest they would not appreciate more frequent use of listening in French lessons. Average frequency of listening comprehension in lessons was mostly (64%) agreed to be once a week, which corresponds with teachers’ answers.

H5 *The more frequently students practise listening, the more successful they are in understanding speaking* was confirmed.

100% of teacher agree with the statement. Teachers express the need to start including listening from the first lessons. Listening is an inseparable and vital part of any foreign language lesson. Students must necessarily get accustomed to listening exercises as well as test forms and principles reappearing in international exams.

A half of students agree (absolutely agree/agree) with the statement. A recognizable number of students (33%) select the option “I do not know/ I cannot judge.” Mere 16% disagree with the correlation between listening frequency and successful understanding of spoken language.

H6 *Successful understanding positively influences other language skills, mainly speaking (pronunciation, intonation, vocabulary)* was confirmed.

Based on their own experience, most teachers (71%) state that successful understanding positively influences other language skills. It is beneficial chiefly for speaking (*"Most students can transfer the success to production, it has positive influence on speaking."*), *"It is reflected in more natural speech, writing and reading are unfortunately unaffected."*) as well as for writing (*"It returns in production – speaking, writing, vocabulary is fixed by listening."*), *"They benefit most from the listening since all grammar, word order, intonation, syntax, pronunciation – all can be then used in French."*, *"They remember phrases, context is important."*).

Students are not able to judge; a half of students selected the option "I do not know/ I cannot judge." However, I can be supposed that this item might have been influenced by the fact that if answered positively students would have to fill in the following item specifying particular language skills were positively influenced. This presumption is supported by many cases where students changed the originally positive answer to "I do not know/ I cannot judge." If still students agree, most frequently mentioned benefit affects speaking (97%). Particular improvement is mentioned regarding pronunciation, fluency, richer vocabulary, intonation and accent. Speaking is followed by reading (44%), where positive influence affects comprehension and vocabulary. Due to the structural and syntactic improvement from listening, writing (31%) is affected by fixing and smoother application of grammar and faster sentence creation.

H7 The inclusion of listening in French lessons is useful; listening is an essential part of French lessons was confirmed.

The obtained data unambiguously proved that the inclusion of listening in French lessons is beneficial (100% teachers). Teachers expressed the following justifications: *"It is absolutely vital."*, *"It is necessity."*, *"The ability to understand is a basic ability in foreign language."*, *"It is the first thing they need when encountering a native speaker."*, *"It is necessary to understand a context not words."*

This part reflected only teachers answers as there was no question concerning the utility of listening explicitly present in students' questionnaires.

It can be argued that the stated hypothesis **Regular inclusion of listening in French lessons leads to the improvement of understanding and further motivation of students** was confirmed. The item regarding motivation proved that 76% of students acknowledge motivation to study a language further providing they understand its spoken mode. Similarly, teachers locate significant motivation among students who are traditionally successful at understanding spoken French language.

MULTIMEDIA UNDERSTANDING MATERIALS

The fact that multi-channel nature of media contributes to successful understanding of authentic speech in a foreign language was validated already in students' questionnaire results. The findings confirm the role of sight as a sense important during a language acquisition process. Most frequently mentioned (85%) materials enabling easier understanding were accompanying texts or subtitles. These were followed by extra videos or pictures. Students emphasized also written form of the recording is one of other possible ways to improve understanding. Based on the pilot research conducted at secondary grammar schools, materials enabling easier understanding of spoken French language will be evaluated. These should enable most effective positive changes, i.e. students either mentioned them as useful, or they demonstrated more successful results in tests. The data obtained from questionnaires aimed at learning strategies and styles will be processed. The relation between learning strategies/styles will be examined by selecting particular materials focused on speaking understanding and its success.

CONCLUSION

Although the conducted research was of a limited scale and its results cannot be applied generally onto the population of the particular age group or in the Czech Republic, the obtained results are beneficial for foreign language teaching at secondary schools.

It was verified that listening is not a favoured language skill among students. On the contrary, listening is popular among teachers, who attempt to utilize various forms of listening comprehension activities and arouse students' interest in these. Teachers include listening regularly in lesson, but having not been limited by time, they could utilize it more.

The feedback obtained from interviews with teachers contributed to obtaining results suggesting teachers' interest to cooperate on popularising listening skills among French language students.

Listening should not be a threat to students. Teachers should help students overcome their worries by including activities aimed at improving their listening skills. Therefore, it is essential to pay sufficient attention to the pre-listening phase, task and exercise preparation. Materials should be selected in accordance with students' level of language (the manageability of the task for students), the topicality of the theme and its proximity to young students. Students need to be demonstrated that understanding is possible, even if it is with difficulties. It is essential to teach students to catch the relevant information, not necessarily understand everything. Last but not

least, individuation and differentiation in lesson must be utilised: individual differences among students require various amount of time and number of repetitions of recordings, or other materials which lead to students' effective understanding of speech in a foreign language.

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Looking for New Models of Society: The Example of the Fencing Team

Sara NOSARI

*Department of Philosophy and Sciences of Education
University of Turin
Italy
sara.nosari@unito.it*

ABSTRACT

Man has an extraordinary relationship with change: following Paulo Freire's theory, he has the capability of being part of change inventing it. Thanks to this capability, he has redesigned and continues to redesign human society. Before becoming action, however, the invention needs a *vision* that suggests a "general" (that is entire and overall) representation of the desired, dreamed and hoped society. This vision has to indicate its limits and borders; it has to point out a role and a position for each element that takes part in society; it has to show and promote its ultimate aim. What is this vision? It is a representation that is worthy as meaning: it is a "symbolic mirror" that does not invent a new content of change, but its sense of value. What vision of society can man have for future change? Starting from the presentation of two city models that represent two different ways of designing human society (the first one designed by Frank Lloyd Wright; the second one by Paolo Soleri), the paper will discuss the possibility of completing the (structural but static) paradigm of architecture with the (dynamic) paradigm of sport that implies, necessarily, movement and strategy. In particular, it will test the validity of the sports paradigm through a pedagogical interpretation of the specific social relationships "invented" in the fencing team competition, presenting them as a possible model for change of society: the ultimate aim is not simply the sum of the single fencers' scores.

Key words: Society, Paradigm, Model for Change

INTRODUCTION

The 20th century was crossed by a deep and continuous reflection on the direction that man has given to change (Rosa, 2013). This reflection is the result of a long but accelerated transformation change which man started thanks to his extraordinary capacity to invent. The theory which Paulo Freire reconstructs and interprets man's presence in the world: "The invention of 'existence' necessarily involves the emergence of language, culture, and communication at a level of complexity much greater than that which obtains at the level of survival, self-defence, and self-conservation" (Freire, 2001, p. 53).

Man invents because he is capable of comparing, judging and choosing; furthermore he invents because he resists and desists; lastly because he is capable of deciding and intervening. This complex of capabilities "makes men and women capable of acts of greatness, of dignity, and at the same time, of the unthinkable in terms of indignity. This capacity makes men and women capable to make the world either beautiful or ugly". Due to this capability, man has built a "second nature": human existence develops in a wider and deeper space, marked unprecedented and unpredictable borders because caused by chance – the human one – "infinitely improbable" (Arendt, 1958, p. 178). The marvel of man's capability is tried out and lived in daily experience: the capability to invent – that is above all power – characterizes human action in each one of its manifestations. In front of power that these capabilities give to man, it is not possible to remain indifferent or neutral. "The question – following Hannah Arendt – is how much reality must be retained even in a world become inhuman if humanity is not to be reduced to an empty phrase or a phantom" (Arendt, 1968, p. 22).

Therefore, first of all, it is necessary to recognize the power that man has on himself, on others and on the world (Ricoeur, 2005). But it is necessary, at the same time, to reflect on the consequences of this power: "The world is not humane just because it is made by human beings, and it does not become humane just because the human voice sounds in it, but only when it has become the object of discourse" (Arendt, 1968, p. 24). Reflection and confrontation are not merely a calculation. When man invents he does not predict the future: "Some time ago someone came and asked me – Paul Valéry remembers – what I augured of life and what I thought things would be like in fifty years. As I shrugged my shoulders, the questioner lowered his sights and his prices, and said: 'Well, where shall we be in twenty years?' I replied: 'We are backing into the future' [...] In short, more and more it is becoming useless and even dangerous to make predictions based on evidence from yesterday or the day before; but it is still wise, and this will be my last word, to be ready for anything, or almost anything. We must keep in our minds and hearts the will to lucid understanding and precision of mind, a sense of greatness and risk, a sense of the extraordinary adventure on which mankind has set out, departing perhaps too far from the primary and natural conditions of his species, and headed I know not where!" (Valéry, 1932, p. 113).

Therefore, it is necessary to make an effort to define a vision that, in advance, anticipates invention representing it in an idea that contains its possibilities and limits, but above all the direction of sense for the change proposed (dreamed and

hoped). Over time, there have been many representations that anticipated the future. Each one of these has imagined human society in its attempt to transform it into a more human society. Among the many, the architectural idea testifies very well the search for a vision that is a model for a truly human society.

THE ARCHITECTURAL IDEA OF SOCIETY

The possibility to invent existence starting from the transformation of social space has interested two brilliant – even though very different – exponents of urban architecture: Frank Lloyd Wright¹ and Paolo Soleri². Both felt the need to think of an “urban renewal” for a “social renewal” with a democratic meaning; the two architects planned to create “the perfect community” designing two opposing models of a city: the former based on “modularity”; the latter on “organicity”.

According to Wright's ideal community, cities should not be centralized. The utopian city – Broadacre City³ – is made up of a network of square blocks that include small and medium sized farmhouses, markets and social centres, surrounded by woods available for growth in the future. The city does not have a central district: Wright had in mind a “city of independent homesteads where people would be quite isolated from one another to insure family stability, but connected enough through modern telecommunications and transportation, to achieve a real sense of community” (Wright, 1935, p. 344). It is the space created by new technology: there, the automobile reigns supreme and the wonder of radio or telephone bind a *sprawling collection of houses*. It is even the indispensable space for recuperating human wholeness destroyed by modern cities (dense and crowded conglomerations). There, life can be a combination of manual and intellectual work, every day.

In that piece of land, therefore, Wright saw the “secret” for human happiness: a social system based on personal freedom and dignity through land ownership was the only way to guarantee the harmony and the welfare of everyone (Wright, 1935, p. 345). Opposing Wright's urban sprawl, Soleri's city – Arcosanti⁴ – does not have any outskirts: it stages residential houses, commercial and public spaces all within easy access to each other. The ideal city presents in fact an integrated and compact urban form. This “miniaturization” should allow or facilitate interactions: living, working and playing spaces are all intermingled to promote social relationships. That is a city characterized by community spaces (private spaces, even though present and evident, are limited). As the integration of life and work is the main goal of the project, Arcosanti includes a theater, workshops, studios, meeting areas and other spaces dedicated to social activities.

Soleri imagines the city as a social space because he thinks of society as a living organism. The goals of the Italian architect “were to create a historically sound conception of the morphology of the city as an evolving organism” (Soleri, 2006, p. 131). Using the paradigm of organism, the city is meant to be a living process, constantly engaged in improving itself. As such, it is a social laboratory (Soleri, 1983).

There are two visions that interpret in different ways – often opposing each other – the same dream of a social reform with a democratic meaning. As regards Wright, the democratizing force was land-ownership: it is the foundation of freedom. He believed that a “citizen in his own life, in his own home with his feet on his own ground is a truly free man” (Baxandall, Ewen, 2001, p. 21). As to Soleri, this force was “the body-social” (Soleri, 1969, p. 56): it is “the congruence (an advanced sense of community) based upon compassion (a universal bond, stronger even than our current secular conception of human brotherhood)” (White, 1971, p. 80). Wright's vision was unbuilt; Soleri's has never been officially finished: Arcosanti's construction continues, carried out by students and volunteers.

In both cases, the architectural idea “invents” existence proposing a structure capable of characterizing individual and social life with a democratic meaning. The possibility to start a democratic society – in both Wright's and Soleri's versions – has however one condition: “The specific and usually irreplaceable in-between which should have formed between individual man and his fellow men” (Arendt, 1968, pp. 4-5). What is peculiarly characteristic of human invention is that “something” takes place between one person and another. With reference to Martin Buber, in fact, it is possible to recognize that “the fundamental fact of human existence is neither the individual as such nor the aggregate as such. The individual is a fact of existence in so far as he steps into a living relation with other individuals. The fundamental fact of existence is man with man” (Buber, 1967, p. 202).

¹ Frank Lloyd Wright (1867-1959) was the architect who revolutionized the architecture of the 20th century. His worldview – however – in not confined to architecture: his prairie houses are not simply places to live, but a way to live.

² Paolo Soleri (1919-2013) was one of the best-known utopian city planner. His vision “archeology” (architecture and ecology) formulated a path aimed to realize a city in the image of man.

³ Broadacre city was presented in model form in March 1935.

⁴ Building the experimental city of Arcosanti took place in 1970.

However, this condition is not the subject of the architectural vision: in fact, it is a structural vision that gives back an image, inevitably static of society. It cannot be otherwise: attention is focused on the form of contents that mark and anticipate the social border, proposing its need and possibility, direction and destination. Moreover, all that animates the dynamic of daily social life remains implicit and unexpressed.

What type of dynamic life could there be at Broadacre or at Arcosanti? What type of connection between men can create a democratic society, starting and cultivating it? What is the “between” that may realize a truly democratic human society? It certainly cannot be a fixed between: if it were, it would betray the democratic meaning that the ability to invent tries to realize. Which between must be situational: as such it can only be improvised, without being – however – left to chance. If the architectural vision does not bring to light this connection, the sports idea can do it since “the democratic impetus is built into the structure of sport” (Reid, 2002, p. 8).

THE SPORTS IDEA OF SOCIETY

The sports idea distinguishes itself from other visions because it invents existence as proof of effort and fatigue, but above all as proof of will, liberty and equality (Arnold, 1997; Reid, 2002).

First of all, sport designs and forms human character: through games, sport permits man to discover his capabilities and his limits: “It is an idea – affirms Valéry – that leads us to cultivate one of our native qualities to its highest point while keeping them all in balance; for a sport that deforms its subject is a bad sport. Well, any sport seriously practiced is a test requiring privations (sometimes severe ones), hygiene, concentration, and regularity, all measured by the results in short, a true morality of action that tends to develop the human type through a training based on the analysis and systematic stimulation of one's abilities. It might be characterized in a phrase, a seeming paradox, by saying that it consists in the training of our reflexes by reflection” (Valéry, 1935, p. 158). As a result, sport is not only a game (Huizinga, 1938): in fact, it is a vision that stages a practice with an ethical meaning. As such, it trains human beings towards a form that only man can have: it trains them towards respect and responsibility.

In fact, in the sports representation, man is tested as responsible for: he must make himself responsible for everything that permits him to play (for example, sportswear, equipment, ...); at the same time, he must make himself responsible for everything he does (he must answer, for example, for his absences or his lateness, his misbehaviour, ...). However, it is not only an economic responsibility that constrains him from responding to the consequences of his actions. Responsibility that sport contributes to inventing is also and above all the responsibility that follows from the ultimate cause of existence: transforming nature into culture, sport trains human beings to take part in a cause where everyone that plays must become responsible. In fact only this responsibility is able to move and direct existence transforming it into a living social space with participatory democracy (Jonas, 1984, p. 134).

Therefore, sport proposes a cause that goes beyond the single individual and that unites everyone that practices it. In sport, each athlete is truly a witness and representative of a political goal: the preservation and the awareness raising of human dignity (Reid, 2002, p. 24). In this direction, sport shows and tests human social life. It has in fact “the capacity to speak as a world” (Edgar, 2013, p. 1).

However, how do athletes relate to this ultimate cause? How does this participation take place? Does everyone have the same role and the same position in society? Which strategy guides the participatory dynamic? How can one contribute to this common cause?

THE EXAMPLE OF THE FENCING TEAM

The invention referring to this kind of participation is staged very well by the sports team. Its action is as much representative as transformative: it is representative because it shows how a society with a democratic meaning could function; it is transformative because it is able to direct and mark in a democratic sense sports practice making it a citizen authentic social conduct. This ethical invention of existence is sustained by continuous and persevering experience of interdependence (Twine, 1994).

Interdependence is in fact an essential condition of a sports team. There are different levels of interdependence among players: it can be pooled, sequential or reciprocal (Daft, 2015, pp. 289-290). In the first case (baseball, for example), interdependence among players is low: “Each member acts independently, taking a turn at bat and playing his or her position. Players practice and develop their skills individually. If each player is successful as an individual, the team should win”. In the second case (in football, for example), “interdependence among players is higher and tends to be sequential”. The players are organized in sections and operate as a coordinated unit. “Each player has an assignment that fits with other assignments” according to the rules of the game. In the last case (basketball, for example), interdependence is at its highest level and “tends to be reciprocal. The game is free-flowing, and the division of labour is less precise than in other sports. Each player is involved in both offense and defence, handles the ball, and attempts the score. Team member interacts in a dynamic flow to achieve the victory”. Because of this interdependence, players “must learn to adapt to the flow of the game and to one another as events unfold”.

Consequently, the relationship of interdependence may present itself as a relationship between autonomous individuals, as a relationship between groups that are sequentially interdependent or as free flow of reciprocal players (Keidel, 1984). Low or high, interdependence among team players shows an evident ethical character. Through these three levels of interdependence, the sports idea proposes three different ways to interpret “between” on which it is possible to build a social democratic society.

There is however another way to interpret interdependence: it is the “between” that characterizes the fencing team. In the fencing team, interdependence is reciprocal: in fact, even though the game takes place sequentially (9 fights, one after the other), the final result is not only the sum of individual points, but the concatenation of “calibrated” actions in relation to the 9 overall fights that have to be played. Each player has 5 touches at his disposal for each fight, but the task does not request him to use them all. The task has not failed if he obtains a lower number of points. Each fight is studied based on the necessary contribution in relation with the other 8: on each fight, each player is directly responsible for the entire game.

Following the above mentioned, even though reciprocal, the individual player in turn takes on the role of protagonist: the responsibility of the individual player requires a strategy and a performance that is valid for the whole team. The social connection that the fencing team highlights is personal responsibility: one cannot delegate or withdraw. At the same time, the player whose aim is to be better than the others in order to show his own capability does not carry out his role as a member of a team correctly.

Reciprocal interdependence implies a responsibility that does not compel the members to carry out the same performance: the connection between the individual players is strongly ethical because it requires each person to interpret the game bearing in mind the interest of the team. At times, the success of the team can imply a sacrifice for personal performance.

It is in other words responsibility that does not follow the logic of consequences. The interactions among players are nonlinear (Hristovski *et al.*, 2014). Although this sports team presents a numbers of moves that are sequential and causal, it responds to the situation: consequently, it always includes a situated creativity (Joas, 1997). It is in this creative space that a different way of participating in the common cause can start. It is not merely a space where the individual players must find alternative solutions to unpredictable situations. It is neither a problem of finding “the magic pill”. The situation of the game is an open and suspended space in which it is necessary to involve ones own capability to judge, it is in this space that man can prove and test a different way to interpret the human constraint of responsibility.

If in a sports team the way that each player interacts with the others in the surroundings of the game generally influences the actions of the players within the same team, in the fencing team the players’ interdependency transforms the system of responsibility *from equal to personal*. Referring to fencing, reciprocity does not imply a division of labour that is not very precise. The team members do not play at the same time. Added to this, a model of society in which participation is not only subdivision can be invented. A special form of individual responsibility emerges, which opens up to a vision of society where each member is always protagonist in his action as well as always responsible for his action.

CONCLUSIONS

The invention of a democratic way to live existence can have different interpretations. The interpretation is valid when it realises the democratic connection as the interrelationship between free and independent subjects; it is also valid when it recognises the democratic collection as a communitarian connection. When it comes to the failures or to the partial successes of the different models of a democratic society (there are many cases of irresponsibility or of individualism), it is possible to identify a further model that highlights the personal responsibility for the common cause. The dynamic and strategy of the fencing team may seem to be going towards this direction. Even in the fencing team, there is anyhow an open point: which is the actual contribute of the coach in the game economy? And, socially talking, can a democratic society do without the function of a superior judgement? Until where can a democratic system work without a “coach”?

This is a clear expression of the pedagogical antinomy between freedom and authority. As an antinomy, it remains irresolvable*.

* This paper is dedicated to the Italian Champion Fencing Team Épée, U. 14 - 2017: Chiara De Piccoli, Federica Casabona, Vera Perini, and to the coach Mauro Regano (Accademia Scherma Marchesa, Turin). The fencers’ touches and, above all, their “proof of interdependence” have inspired it.

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Managing Universities: From Collegiality to Shared Governance

Dr. Erman M. DEMİR

*Information Innovation and Technology Transfer Office,
Baskent University,
Turkey
medemir@baskent.edu.tr*

ABSTRACT

This work is a introductory review on strategic management of Universities. University management is deeply connected with the ontology of the academic community and the university, unlike other institutions. It is important, but rarely mentioned, to link the ongoing debate in academic literature on the management of universities with current global and local changes through this point of view. Today, one of the most important agenda items of the academic community is how to balance the substantial features of University, and productivity expectations. In this work, the relationship between the principles of management and the collegiality is questioned and different approaches are addressed.

Key words: University, Shared Governance, Academician, Turkey

INTRODUCTION

Universities are historically considered as an integral whole with academics. This is due to the nature and the history of the concept of academic integrity practice. The first period of the university history the most important university tradition of self-government of the academic community based on autonomy offered by divine authority or ruler, consisting of free research and education. Universities, whose autonomy of narrowed in favor of political authorities from 19th Century with various macro factors, are today struggling to survive in a system where economic activity is stand out. In this general flow discussing autonomy or academic freedom of universities over authority and power seems not sufficient. The reasons of this is in the difficulty of drawing clear lines between the university administration and academic communities, thus this kind of distinction seems incompatible to university ontology. In this case, original management methods of the universities are discussed in light of current developments directing towards shared governance.

HISTORICAL DEVELOPMENT of UNIVERSITY GOVERNANCE

University governance historically indicates autonomy through some self-government bodies. University Senate and faculty committees that involves academics are defined as deliberative institutional bodies (Rüegg, 2004: 89). One of the important components of the university self-managing tradition, senate is composed of all graduates of universities such as Cambridge and Oxford in the Middle Ages. Subsequent to the senate and similar administrative body composed of faculty with centuries of fame for assistant professors and lecturers in the late 19th century, and in 1970 joined students and administrative staff. Thus, turns into a structure that the university's academic and research activities discussed and decisions taken broad by participation. in the 1800s legislating branch of the European University is a community of all tenured professors, named as *Konzil*, *Konsistorium* or *Senate*. This community is responsible for determining general rules of the university, the proposals to be appointed professor, and when not appointed by state like in Napoleonic era France, the election of the rector. The executive body consisting of academic representatives is named as *Senatsausschuss*, *Kleiner Senat*, *Conseil de l'Université* or *Consiglio Accademico*. These boards are criticized from time to time due to inertia and conservatism, but they play a very important symbolic role in the defense of the autonomy of university. Academics agree to participate and share their part of the responsibility of management via these boards. This concept of the university administration makes possible diffusion of the genuine autonomy renaissance after collapse of authoritarian regimes in the aftermath of the Second World War in Europe (Rüegg, 2004: 119-20). The critical role in the restoration of the university autonomy is dedicated to scholars and defined as collegiality which corresponds to the collegial university management model (Baldrige, 1977).

Collegiality of academic community make up the core and the basic component of the university from the first sample of higher education. This ontological foundations of the university is not limited to "institution" in rational sense. Concept of university or *Universitas* in old Latin is short form of *universitas magistrorum et scholarium* that means "community of masters and students". The concept of universities, which define the academic community as a priority, is a two-dimensional concept in which two basic phenomena are represented at the same time as the college of higher education and universities, starting from 1300 (Harper, 2010). The fact that universities are seen as a community of autonomous students and teachers for advanced education is a widespread trend in Western historiography (Timur, 2000: 17). Because of this meaning that creates an impression that the institution and its community can not easily be separated from each other, the university, which is historically composed of a institution and mainly academicians, is a difficult entity to distinguish from

each other on an ontological level. It also allows the term university to be interpreted as a wider concept that defines the institutional and private qualities of the academics community.

In European history, and especially before the Second World War, the functional role played by the nation states at universities is to serve the nation and the state more effectively. While autonomy is gradually limited in this period, the academic community's self-management tradition becomes a dynamic field of struggle. According to the Board (2004: 155), academic freedom refers to "the freedom of the faculty member to teach his field of expertise without any external control since the Middle Ages". The autonomy or "academic freedom" values of medieval universities involve autonomy of the academy in relation to the outside world, the ability to employ the student or teacher they desire, and their own rules. Over the centuries these privileges are progressively controlled by the secular authorities (Ridder-Symoens, 2002). As recent globalization and market demands in this context begin to take the place of the regulatory control function of the nation state, the tension between the functional aspirations and the intellectual interest of the academicians increases as the university and the academics reshape the social and political context. Once again, autonomy and academic freedom become important headlines that occupy the agenda.

The dual distinction of the etymological root of the concept is on the agenda throughout the history of the university, and nowadays the increasing tension in the face of the professionalism of the university administrations coincides with that trend. On the one hand, academics with freedom of inquiry and teaching, and the right to speak in their university governance, on the other hand, continue to create two main axes that shape the university, which emerges with the nineteenth-century nation states and which is evident in the light of global economic developments. There are free research and education activities of the academicians who are members of the university. However, it is also opposed to being managed as an institution that responds to redefined social and economic roles.

TRANSFORMATION of UNIVERSITY GOVERNANCE

The productivity-oriented reform tendency in public administration is also spreading to universities. In Europe, it is thought that universities, where autonomy is supported by the removal of ministries from jurisdiction, are more open to pressures to access resources through incentive mechanisms and reporting and control systems (Christensen, 2011). This transformation in public administration is mainly due to the control of financial resources (Paradeise, Reale, & Goastellec, 2009, p. 198). A significant impact of global change is that universities are reduced to specific functional areas rather than being directed in one direction, causing them to be managed as part of a company in their own microcosm. From this point of view, the nationwide strategic management of universities emerges through the withdrawal of the central government (Paradeise et al., 2009: 227), opening areas in which the operational performance of each university is to be managed in its functional area.

Birnbaum (2003) states that there are two types of governance structures in modern universities. These are the administrative structures that emerge from the legal authority and empower the administrative board and the administrators. The other is the governance structure stemming from competencies in professional fields and legitimizing the role of academicians. This situation has the responsibility of ensuring that the administrators guarantee the resources that the university must maintain. Under these developments, some models are proposed to distinguish between the university's strategic management and the work of scholars. Hines (2000) proposes a model that defines the roles of academics in governance as research, curriculum and counseling in their areas of expertise, and defines finance and external relations in the field of action. However, such a distinction derives from the academics' problem of finding resources that abstract research or education from financial sources and deeply influence the quality of activities in these fields. More importantly, the differentiation of roles and responsibilities between academics and administrators creates a deep tension. Because institutional decision-making processes in universities require business partnership and responsibility sharing among colleagues (Kezar & Eckel, 2004).

Autonomy is the only condition that should be viewed as "the intersection of knowledge, culture and society" rather than as an ideal institution devoted to the university by interpreting the academic subject as the freedom of research and teaching (Delanty, 2001: vii) (Readings, 1996), which allows for a shift in thinking about the problem (Morley, 2003: x), which does not adequately address the academic community's impact on the political context of the current changes in universities, as the university concept shifts farther than applying with a nostalgic romance. It is necessary to consider that this change influences the academic practices and the general public of the university, even if they are at different levels, rather than the modalities that distinguish the administration from the strict lines with the academicians. Administrators who are responsible for the university's access to resources and academicians who focus on research and training are in the same ranks.

In order to overcome the tension between academic expertise and professional management at universities in the light of current developments, reform needs to be re-interpreted as a shared governance of the historical tradition (Shattock, 2000). Shared governance in the field of higher education is defined as "a self-governing social system in which responsibility for decision-making is shared among those affected by decisions" (Maloney,

2003, p.3). Participation of academicians in university management has become widespread over time, with the concept of shared governance used primarily in the United States. Two main principles of shared governance have been identified. These are important decisions to mobilize the capacities of institutional stakeholders and ensure their participation in the decision-making process. Secondly, in different situations, the measure of the right to speak should be determined by the level of responsibility of each actor for the issue being considered (AAHE, 2001). Important decisions about universities in the United States have long been a source of concern for university autonomous academics for eradicating erosion in favor of central autonomy (Moore, 1975).

Considering the characteristics of university and academic studies that can not be compared with working in other professional fields, it is not the central problem that relations of academicians, university administrators or higher level officials to the center of administrative power. This mechanical viewpoint does not distinguish the strategic management of universities from the strategic management in any institutional context. On the contrary, a university-specific management approach that focuses on community (or *Universitas*) and inter-human relations rather than structures and processes is possible (Kezari, 2004). Relevance should be made to enable an effective cooperation mechanism between the administrative and academic fields of expertise to ensure effective management in the university. The most important reasons for this are the necessity of funding the research and education with the needed funds and the special characteristics of the academic community. Because, unlike the management of any organization, it is not possible at university to apply the power of the primary question authority. The difficulty of the resultant estimator to be taken when managerial power is applied is the most important question. Unlike other organizations' employees, the academic community retains a certain degree of power to determine results in areas of specialization. According to Kaplan (2004), scholars generally do not resort to the potential to influence governance unless they are intervened in their areas of expertise, and it is difficult to determine the strength they have.

Countries' tertiary and research strategies constitute top-down influences shaped by the political and societal context that constitute broad macro-effects. In every country, this from up to down effect provides for change by shaping up and down the mechanism of higher education. But the traditionally upper and lower management style of academics is the driving force for micro institutional developments (Paradeise et al. 2009: 227). The non-university or in-university levels of administration that make up the university's strategic management resort to methods of working collaboratively with the academic community for the purposes of final analysis rather than manipulating the mechanics of activity or applied functional schedules (Shattock, 2000: 235-236).

In terms of universities, the strategic management problem should not be to make university administration more effective, but to protect real academic institutions in doing so. In this case, the answer in the management field naturally comes from the question: Shared governance is the prerequisite for the university (Birnbaum, 2004). Academic staff will be able to realize the presence of *universitas* in such a way that they are invited to take responsibility for the university's strategic goals and to reach them. But this realization does not arise only from the fact that academicians influence decisions. On the contrary, in the context of Turkey, where the majority of academicians are willing to do academic work in closed groups in Turkey (Demir, 2006, Günay, 2006; Günay et al., 2011; Şancar, 2003; 2016), inviting academics beyond the expertise of the scientific discipline, to the broader scope of the university. This invitation is historically a follow-up to the current developments in the social and economic system in education and research through the commonality of academicians who are the strongest foundations of the institution, and what to do in the face of these developments. In UNESCO (1997), the collegial association expresses the principles of academic freedom and shared responsibility, while participation in higher education decision-making processes will contribute to academic excellence and social development.

CONCLUSION

The discussion on shared governance in strategic administration or universities in the field of higher education should not be read as only a power struggle to reach more resources. As noted above, the university and academic community are, unlike any organization and employee, too complex to allow the linear implementation of administrative authority to achieve organizational goals. This complexity arises from the depth of expertise and from the nature of intellectual work as well as from the fact that the line between expertise and administration is not apparent due to the tradition of historical autonomy. It is not possible to think of a university where academics, the ontological component of the university, have no say in administrative decisions. This implies the duty of the academics to carry the weight of the management responsibility. Secondly, in the face of macro political and social influences, university administrations can not be left with the task of obtaining the resources necessary to keep the university institution alive. In today's universities it is not possible to create a world limited by research and education activities and to move away from external factors. It is expected that the communication and interactions that will enable the university to work in harmony with the academic community and the future will be shaped by the richness. Although it is not the most effective method in this regard and occasionally has a tendency to be atoned, various mechanisms of participatory management can be seen as useful symbolic and functional means.

The academic staff can reach the ideal management structure of the institution, sharing the responsibilities of the university administration and opening the decision making mechanisms of the administrators really to the point of participation. From this point of view it is not the key point of management in terms of universities but responsibility. Participating management academics are encouraged to read current developments from a wider perspective and take responsibility for decisions on the future of the university; Management is an important concept that needs to be discussed as a concept that invites participation to support with the awareness that the university concept is synonymous with the academic community.

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Masters in Hydraulics: Sense of Humanism in Classrooms Based on Freedom Research?

Maritza Liliana Arganis JUAREZ

Instituto de Ingeniería

Facultad de Ingeniería

Universidad Nacional Autónoma de México

México

marganisj@iingen.unam.mx

Juan Jose Baños MARTINEZ

Posgrado en Administración. Facultad de Contaduría y Administración

Universidad Nacional Autónoma de México

Tecnológico Iberoamericano Aragón

México

juanjosebm@yahoo.com.mx

Ramón DOMÍNGUEZ

Instituto de Ingeniería

Universidad Nacional Autónoma de México

México

rdm@pumas.iingen.unam.mx

Eliseo Carrizosa ELIZONDO

Instituto de Ingeniería

Universidad Nacional Autónoma de México

México

ecae@pumas.iingen.unam.mx

ABSTRACT

Near of 50 students are allowed to get into the Masters in Hydraulics in Posgraduated of Engineering of the Engineering Faculty of Nacional Autonomus University of Mexico (UNAM), México and the curricula includes all kind of technical subjects; few professors include humanism elements in their class, the students, a lot of them civil engineers, mechanic engineers, learn how to avoid risks or manage water reservoirs or pipe systems, and the knowledge increases vertically respect to their experiences in pregraduate; but the sensibility about help people is an element that must be reinforced by means of some courses that professors can take in advance. The paper describes some experiences from students about their courses in Masters in Hydraulics and some possible useful courses a posgraduate professor can take are suggested in order to be able to include elements in their classes related with environmental love, save and protect lives, political decisions against society benefits, among others. All this elements can be inserted along the technical courses always emphasizing the importance of the Engineer as a promoter of social development.

INTRODUCTION

Academic freedom is a well known term at the UNAM, México “is based on freedom research and thought, admitting with that ideas plurality and around it tolerance and respect” (Gómez, 1996, p. 667); academic freedom is not arbitrariness and subjectivism (González, 2004, p. 74) every class is given in different ways by each teacher theoretically, attending to curricula and study programs.

There are researches in some Universities of México which had identified percentages of the importance of social aspects in posgraduate education; for example in UJAT University, the engineering and biological areas, give more value to technical and cognitive competencies than those of social kind (Pérez, 2009 p.8). The UNAM as a vision essentially humanistic as radical commitment in form and realize the most appropriate human potentialities (González, 2004, p. 74).

Sadler, 1906 enhances the values of humanistic studies during preparation of engineering students, just for the proper writing of technical documents the engineer requires English.

Particularly in Masters in Hydraulics a lot of difference in humanism elements can be found between on class and another, and this is the motive of this document, to enhance some of them, based on in postgraduated web site, classroom experiences from students and professors.

THE STUDY

In order to identify all possible humanism elements perceived in the Posgraduated of Engineering, UNAM, the web site was explored and then the experiences from some students about courses with high, medium and low humanism elements (in Hydraulics area), were collected.

Posgraduated in Engineering web site

The mission and vision of the postgraduate in Engineering is not given; only in menu introduction mentions that one of the purposes of the university is "to preserve as well as to increase knowledge as a community good and to train researchers capable of generating it and applying it through teaching as a fundamental training purpose , which under the criteria of creativity and relevance in the framework of higher education, involve in schools, faculties, centers and institutes directed to engineering and technology to develop functions, and generate responsibilities and attributions that overcome deficiencies in the scientific and technological system ". But what stands out later is that it is the public institutions that are promoting postgraduate courses in strategic areas to face the great national problems and give the figure that 25 percent of the students who study masters are in the university. And that is all, the rest of menus only provide information about enrollments, curricula, and administrative information and the names of tutors who provide academic support to students.

Course 1

Research Project I

Teacher's gender : Male

Age: 80 years old

Class Description

The main objective of the subject was to provide the student with the necessary grammatical tools to write properly. Due to the main purpose of the subject, the teacher considers it important to increase the general culture of the engineer, because a graduate gives us extra knowledge to that of the degree. For this reason, the class was divided into seven topics, ranging from the area of basic technical knowledge such as the scientific method and its description during a timeline, research, project implementation; to areas of the humanities, the last area being the most extensive, touching on themes from the industrial revolution.

Topic number four was writing and reading, in which subtopics related to the importance of reading as an introduction to the study of punctuation and spelling were seen, for this purpose, the teacher relied in a textbook (Maqueo, 2010), a book that we worked on throughout the semester and from each chapter of the book was evaluated with short exams at the beginning of each class.

Topic number five were visual elements, such as graphs, tables, figures, font size and structure of a scientific article for the purpose of an easy reading and understanding by the reader or readers; recommendations for professional exams and presentations were also seen. Finally within this class we also saw elements of history: ancient Greece, modern age, contemporary age, 19th Century, first and second world war.

In theme six universal literature was studied, while in the last classes, subjects related to the seven arts were taken.

Course 2

Irrigation and drainage

Teacher's gender: Male

Age: 68 years old

Class Description

The objective of the subject is to provide the student with sufficient tools for the design of preliminary irrigation and agricultural drainage. It focuses on the efficient use of water in agricultural areas, which also allows irrigation and agricultural drainage hydraulics to be technically feasible, economical and safe.

Throughout the semester, soil water behavior was studied from elements of plant physiology, allowing the understanding of the relation between water - plant - soil and climate, so that later, to evaluate and calculate the water needs of the crops and to analyze the production depending on the crop. In the second part of the course, the updated costs are determined and the expected benefits are purchased, which determines the feasibility of the project. Also, study the different types of crops that exist according to the type of crop, climate, quantity of water, etc. And the design of preliminary drainage systems, both superficial and subsurface.

The content of the subject lent itself much to reflect the social part, since this knowledge is focused on a subject of great importance: agriculture, because what was taken up subjects of the area of humanities was to analyze the problems for which the field of our country is in crisis, which we were analyzing and making a list of problems that we were encountering. Despite this, the humanistic part was not taken up for the evaluation of the subject.

The subject was carried out with a textbook (Gracia Sánchez, 2005), which consists of a theoretical part and exercises solved by each chapter, so the evaluation consisted of various tasks and exams that evaluate the technical and The studies of both theory and exercises seen in class without embracing any humanistic part.

Course 3

Pressure Conduits

Teacher's gender: Male

Age: 62 years old

Class Description

The objective of the class was the analysis of transients along a pipeline in the facilities for transport and pumping to supply drinking water.

During the semester, topics were discussed from the study of the point of operation, also learned to determine the maximum and minimum pressures for each section of analysis of the hydraulic system in question, as well as the design of control works to dissipate the water hammer through the lines of conduction. Topics such as: characteristics of a pipeline, analysis of pumping equipment, hydraulic calculation from the choice of diameter and pumping equipment to the pipeline, system curves, choice of pump type, operation maneuvers were studied ; As well as the analysis of delivery levels, operating costs and plans, transient analysis, as well as the transient analysis methodology.

The evaluation was practically daily, through the advance of several projects that included the subjects described previously. Also, the final qualification consisted of the delivery of a final project, applying the knowledge acquired.

Course 4

Mathematical methods

Professors' gender: Male

Age: 40 and 62 years old, respectively

Class Description:

The main objective of the subject is to increase mathematical, logical and ability to solve problems. Mathematical topics were addressed, so the agenda was as follows: differential equations, solutions of differential equations and polynomial series, vector differential calculus, vector integration, complex variable functions and conformal transformation.

The topics described above were taken up in two parts throughout the semester. One of these parts was theoretical with exercises as examples and the other part of the class consisted of exercises, many of which were solved in class.

“Dr A gave us the theoretical class, while Dr. B gave us the practical part, through the elaboration of exercises during the class and after the class, with support of videos and notes sent by email”.

It should be noted that the grade was divided, as was the two-part course, which consisted of short exams and long exams.

FINDINGS

Website

No humanistic elements are observed; everything is technical and concise. Does not seem to invite an engineer to take a master's degree.

Course 1

For this course it can be concluded that throughout the semester they were seen a high content of humanism topics and technical subjects, since they alternated these subjects. It is noticed the oldest teacher gives more humanism elements than the others in this small sample.

Course 2

The course has a lot of topics related to humanism and social problems, but a medium content of humanism topics were considered during the course.

Course 3

Nevertheless and although the content of the subject is to supply of drinking water to localities, companies or hydraulic works, the course did not pick up elements in the area of the humanities.

Course 4

Due to the scope of the subject, it was developed in a purely theoretical way, so that a lack of humanistic aspects is noticed from this course.

CONCLUSIONS

Taking into account the elements observed in the website and the experiences in the classroom in different postgraduate courses in civil engineering, in the particular case of hydraulic engineering, there is a shortage of humanistic elements introduced in most of the courses that are in that area; only in one of four analyzed subjects there was evidence of this humanistic insertion that must be provided to the master's student in civil engineering and it is noticed the oldest teacher gives more humanism elements than the others in this small sample. So it is strongly recommended a thorough review from the mission and vision that must be taken in a

postgraduate as important of the UNAM in addition to the revision of the programs of the subjects that are given there, besides proposing some type of training of pedagogic type for the teachers in those levels of study of the postgraduate. Subjects such as Reading literary texts for all areas, Dilemmas at the beginning and end of life, Engineering history, Discursive strategies in the classroom, Crisis intervention and management of desensitization, Theoretical and didactic tools for environmental education, Professional ethics should be included for teachers' training purposes.

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Measurement of the Human Capital Efficiency – An Interesting Topic For Diploma and Doctoral Theses

Alžbeta KUCHARČÍKOVÁ

Faculty of Management Science and Informatics

University of Žilina

Slovak Republic

Alzbeta.Kucharcikova@fri.uniza.sk

Zuzana CHODASOVÁ

Institute of Management of the Slovak University of Technology

Slovak Republic

zuzana.chodasova@stuba.sk

Mária ĎURIŠOVÁ

Faculty of Management Science and Informatics

University of Žilina

Slovak Republic

Maria.Durisova@fri.uniza.sk

ABSTRACT

Human capital is one of the sources of economic growth. It is one of the enterprises inputs, too. People are carriers of new knowledge, ideas, thoughts, experiences and skills that contribute to their personal growth and also the growth of the performance and competitiveness of the entire organization. Human capital management is a process of the using effective use of human capital. There are several approaches known how to measure the value of human capital and assess its effectiveness, but unified methodology has not yet been adopted. The problem is the quantification of knowledge, abilities, skills, motivation, talent etc. The difficulty of determining the single universal methodology is due to the fact that every company is unique and has set specific requirements for the production inputs and processes. Therefore, there is the scope for problem solving within the diploma and doctoral theses at universities. The aim of our paper is to explain knowledge about human capital efficiency, metrics of human capital efficiency and to solve practical examples point out the possible implementation of knowledge in this area in diploma and doctoral theses at universities.

Key words: human capital, human capital efficiency, measuring

INTRODUCTION

Economic growth is one of the main objectives of the economic policies of current governments. This is achieved by extensive or intensive use of production factors. Extensive economic growth is the result of quantity increasing of used production factors. Basic factors of production are land, labour and capital (physical and human). The human capital includes the natural ability, innate and acquired skills, knowledge, experience, talent, inventiveness. The essence of creation, increasing the value and effectiveness of human capital, is spending money now but expected benefits will flow in future. Forms of increasing the value of human capital are expenditure oriented for example to health, safety, science, research and education. The views and reflections about the importance and position of human capital in the company were already established in the beginnings of economic theory, and in the work of Petty and Smith. The issues of human capital (HC) were discussed more deeply among the economists, the leaders of the Chicago School of economists, from the 60-ies of the 20th century, for example, Schultz, but also the monetarist Friedman. However, the theory of human capital was the most consistently worked up by Becker, who developed a theoretical basis for decision-making on investment in human capital in the book of Human Capital (1964). Since 1990s, Bontis, Davenport, Armstrong, etc. paid attention to human capital as well.

There are extensive and intensive growth sources. Human capital is an important source of extensive and intensive growth, too. Economic growth is closely linked to the speed with which world get ready to use new technologies, especially in the information and communication field. Human capital is relatively young production factor. Because it is closely related to production factors of labour and has features in common with the labour, analysis and research work it is often not explicitly mentioned. The new modern theories of economic growth (80 – 90 years of 20th century) had begun to take the human capital as one of the main factors of economic growth. New growth theory is based on the assumption that the production function is not affected only by labour and capital, but also by education, improving the quality of labour and capital, better

infrastructure, which are unaffected by exogenous but endogenous. This means that the growth of education and upgrading skills operate as a multiplier, which makes for faster economic growth (Kucharčíková, 2014).

Human capital represents one of the company inputs, too. It is involved in the creation of the market value of the company and also represents the most valuable source of company. Human capital has been currently seen as the property of the company, which is part of the intellectual capital and contributes to the creation of the market value of the company. Human capital is viewed as a set of congenital and acquired knowledge but also skills, abilities, talent, inventiveness. Human capital is therefore element of the knowledge management in global society (Cahyaningsih, Sensuse, Arymurti & Wibowo, 2017; Cahyaningsih, Sensuse, & Sari, 2016; Kozubíková, 2016). Increasing of human capital value is an important element of employee's motivation in enterprises (Myšková, Hitka, Lorincová & Balážová, 2016; Kampf, Hitka & Potkány, 2014).

MEASUREMENT OF HUMAN CAPITAL VALUE

Increasing competitiveness forces companies to combine and use resources effectively and is considered to be one of the major characteristics of the company. If human capital is considered to be one of the inputs and also participates in the formation of the market value of the company, it is important that managers put the emphasis on the measurement of the value of human capital. Without the measurement of human capital companies may not be sufficiently aware of their potential, or whether they invested in the development of their employees effectively or not. The measurement can be the starting point for the creation of strategies for the development of human resources and can help to monitor and evaluate the effectiveness of the use and investment in human capital. There are many approaches to measuring the value of human capital, but there has not yet been adopted a single methodology in this area. The starting point in the implementation of the system of measuring human capital is the fact that people and their development do not constitute costs for the company, but an investment in the future. Problems in calculating the efficiency of human capital is the quantification of knowledge, abilities, and skills (Kucharčíková, Koňušíková & Tokarčíková, 2015).

Bontis et al. (1999) suggested three models of human capital measurement, which are based on accounting:

- *Cost models* take into account the costs invested so far on acquisition and reproduction of human capital, including alternative costs.
- *Models of the value of human resources* combine non-financial metrics with financial and economic (monetary) value.
- *Cash models* find the expected estimates of future results of own human capital.

Anderson has created a tool for the evaluation of human capital, based on three key factors – compliance, cost, and value. Compliance ensures that the management of human resources is the accordance with the objectives of the company. Costs represent expenses invested in human resources and the value estimates the benefits of the costs incurred (Armstrong, 2007).

A mutual interplay and balance of factors such as the improvement of technique and technology, methods of organisation and management of production, improving the quality of human factor, creation of a favourable motivational atmosphere in the company etc. has an important role in labour productivity. The quality of human capital has currently become a decisive factor for the success of the organization. Human capital can be characterized by indicators, e.g. in the area of human resources development, satisfaction of key managers, attractiveness of the company for the good managers, or specialists, etc. In the longer term, the growth of labour productivity depends especially on the opportunity of employees to work independently (implementation), in teams, possibility of expression of creative thinking, climate of confidence or ability of superiors to solve problems incurred smoothly. The factors form social capital of the company, which together with the human become resources of competitive advantage of the company (investments plus social capital) (Mihok, Krausová & Humeňanský, 2004).

MEASUREMENT OF THE HUMAN CAPITAL EFFICIENCY

Performance, its measurement and management is a fundamental definition of enterprise success, because only enterprises which are able to achieve their objectives defined can be successful. Pressure to achieve high performance of enterprises continues to grow (Tokarčíková, Poniščiaková & Litvaj, 2014). The highest levels of management work towards profit maximization, trying to achieve the lowest possible costs and the highest possible revenues (Kampf, Lorincová, Hitka & Caha, 2016).

Efficiency is generally defined as the relationship between the outputs achieved and the inputs used. The efficiency of human capital can be calculated analogically as a percentage of the value of enterprise output and the value of the input (the human capital). However, when choosing output and input, there must be chosen such variables, which relate to each other and are crucial to the administration of the enterprise performance.

The proposal of indicators, according to which it is possible to determine both the value and the effectiveness of HC were developed by Bontis and Fitz-enz in 2002. They distinguished the value of HC, effectiveness of HC, investments in HC and loss of HC in indicators. They identified specific indicators for each of the area that can be quantified in terms of the practice (Table 1).

Table 1: Areas of human capital measurement

AREA OF MEASUREMENT	INDICATORS
Effectiveness of HC	Sales per employee Cost per employee Profit per employee HC ROI
Value of HC	Remunerations/sales Remunerations/costs Average remuneration Remuneration of top managers Remuneration of line managers
Investment in HC	Development rate Investment in education Costs
Loss of HC	Voluntary departures of employees Involuntary departures of employees Total departure of employees

Source: Bontis, Fitz-enz, 2002

The authors of the study created a *conceptual model* for measuring the effectiveness of HCM on the basis of the 25 companies examined. The key ability of management is to continue investing in human capital, while trying to protect the organization from the use of resources in the field of human capital. Investment in human capital and the use of human capital resources include company's turnovers and expenses for training and development of employees. The result of the appreciation of the value of human capital is a positive impact of HCM on efficiency, which can be measured using the sales or profit per employee.

The structure of conceptual model includes four measurements – factor of sales, expenses, revenues and return on investment in human capital. Sales indicator is basic metric of *the effectiveness of human capital*. Creating value through human capital is a concept that predicts the effectiveness of human capital. *Creating value through human capital* includes the measurement of sales compensation (how much is invested in employees as a percentage of sales) and expenses (how much is invested as percentage of total operating expenses). The value of human capital can be measured using the average costs spent on employees when determining the relative position of the pay level in the organization within the sphere of activity. In particular, these average resources invested may be defined even for managers. *Investments in human capital* include development rate, investment in training and costs of training and courses (trainings). *The exhaustion of human capital* is a prerequisite for the negative impact on HCM. In particular, it represents the departure of employees from the company. The indicator can be a percentage of the individuals who have decided to leave the company on their own. Individual measurements of the value of human capital and its effectiveness are in a certain mutual correlation.

A variety of consulting and educational organizations have developed their own systems of indicators to measure the value of human capital or evaluate investment in human resources. These metrics, however, often do not take into account the difference between the value of human capital and the value of investments, which aim to increase the size of human capital.

One of the options how to evaluate the effectiveness of human capital is e.g. the calculation of the economic value added of human capital or just *the added value of human capital (Human Capital Value Added – HCVA)*, it is given by the difference between the costs of the material and the costs of the work produced and the market price of products and services. (HR Agenda, 2012) HCVA creates a modified picture of the profitability of the company through each employee in organization and it can be calculated from the following equation:

$$HCVA = Sales - (operating costs - wage costs) / \emptyset \text{ number of employees}$$

However, profit before taxation does not have to be the right measure, because it includes items such as exchange losses, does not take account of inflation etc. Therefore, it is recommended to calculate HCVA using the following equation:

$$HCVA = (Operating profit + wage costs) / \emptyset \text{ number of employees}$$

Currently, there have been more and more consulting companies dealing with human resources, which monitor and evaluate a number of indicators in the field of human capital. These companies help managers to compare the effectiveness of human resource management with the competition. The disadvantage, however, is that when

monitoring and evaluating the effectiveness of human capital, it is only based on so-called "hard" data, which is not sufficient for a comprehensive evaluation of the human capital. Evaluations should be enriched with so-called qualitative component of the human capital, which is more difficult to quantify, but, due to the specificity of HC, it is an essential part of it.

The methodology for the measurement of human capital also provides the *HR Benchmarking* study of PricewaterhouseCoopers (PWC). This study is carried out on a regular basis and allows participating companies not only to compare the level of human capital through the use of benchmarking, but also take measurements used and introduce own evaluation of the human capital. There are shown the selected indicators of the use of HC according to PWC in the following Table 2.

Table 2: Indicators of the use of HC according to PWC

Company results	Behaviour in organization
<ul style="list-style-type: none"> - turnover per employee - profit per employee - receipts per employee - labour productivity 	<ul style="list-style-type: none"> - fluctuation - absence - monitoring the motivation and satisfaction of employees - loyalty of employees towards the company
Remuneration and employee benefits	Education and development
<ul style="list-style-type: none"> - structure and competitiveness of the remuneration system - share of performance component of wage costs - rate of promotion - employee benefits 	<ul style="list-style-type: none"> - share of the cost of training on wage costs - number of hours of training per employee - cost of trainings - penetration of trainings - total cost for the development of HC - input trainings

Source: Human resource controlling, 2012

There are a number of consulting companies, which have extensive databases and monitor and evaluate a number of indicators in the field of human capital. Involvement, however, is worth the money and does not contain a thorough analysis aimed at identifying key indicators of human capital for a particular company, but only the evaluations based on the internal data provided and its comparison with other companies operating in the same industry (Kucharčíková & Ďurišová, 2014).

If a company wants to effectively and comprehensively manage its human capital, it is necessary to approach this process comprehensively, i.e. it should take into account and build on the strategies and long-term objectives of the company, respect the organizational structure. The management of the effectiveness of human capital, in addition to the measurement of the effectiveness of the use of human capital, includes in itself as well as the effectiveness of investment in human capital, and the starting point is the measurement of the value of human capital. Models for measuring the value of human capital are non-universal, offer only general guidance. The majority of companies consider guidance how to properly approach the value of human capital, measurement of its effectiveness and effectiveness of the investment for the company know-how.

However, for example, by Šikýř and Bušina (2014) the concept of human resource management in construction companies is strategic and systematic which fact is natural given the high number of employees in various professions who perform various works. Applied human resource management practices show both significant merits and certain deficiencies although it is difficult to prove the existence of an unambiguous relation between efficiency of human resource management and success of companies. This relation is determined by many political, economic, legal, social, technical or natural effects that have no relation to efficiency of human resource management or performance of human resources.

For measure the effectiveness of HC is therefore important to consider the type of industry and the environment in which concrete company operates. It is in the conditions of specific enterprises that appropriate prerequisites are created for the design of specific metrics for detecting, monitoring and comparing the efficiency of human capital utilization that are realized in the diploma and doctoral theses of our students. In following text we show some examples.

INDICATORS OF HUMAN CAPITAL EFFICIENCY IN THE FAST FOOD COMPANY

The effective use of human capital is one of the most important indicators, by means of which the fast food company has a space to grow and gain a competitive advantage in the oversaturated market. It is possible to choose several indicators for an analysis of the effectiveness of using HC, for example, fluctuation rate, absence rate and specific indicator – crew labour.

Crew labour

Crew labour (CL) is an indicator of the effectiveness, which was introduced by McDonald's, it is expressed in percentage. It is percentage of wages of the total volume of turnover. Indicator is characterised by the following facts:

- it is monitored every day, throughout the day,
- it is evaluated on an ongoing basis, the current is possible to detect at any time during the day,
- shift manager monitors its amount and his duty is to arrange shift so that it reaches the desired average amount at the end of the day,
- company management requires management to make the average amount of this indicator was 10% at the end of the day,
- the value of CL is affected by the amount of sales and composition of human capital,
- the composition of human capital significantly affects the value and the development of CL value, because employees, who possess a lot of knowledge and experience, contribute to the reduction of the value of CL and it so that manager needs a smaller amount of them in shift in order to save the cost of wages,
- people, together with their human capital are a valuable source of effectiveness and possibilities of managers and executive of restaurant to effectively lead and manage the company and at the same time use available human capital effectively.

Indicator of employee fluctuation

Fluctuation is called phenomenon, when an employee ends employment for various reasons. The reasons are usually personal, organizational, family, poor workplace relationships, conflicts among employees, biased management etc. It is important for the company to find out the reasons for the departure of employees and try to remove as much as possible. Employees, who have the experience and skills that make up their human capital, contribute to the effective management and use of human capital. Due to the nature of the work it is difficult to specify a reasonable rate of fluctuation. 8% is an acceptable level of fluctuation. We have used the following equation for the analysis and calculation of the fluctuation rate:

$$\text{fluctuation rate} = \frac{\text{number of employees excused during the month}}{\text{average number of employees in a given month}}$$

If the rate of fluctuation is very high, it is difficult to build human capital and subsequently use it effectively. Management of the company should focus on improving working conditions for employees and try to keep them as long as possible. The employees have developed their experience and skills over the time and thus contribute to the effective use of their human capital, which is constantly developing.

Absence

The absence is a negative phenomenon in the company and has a negative effect on the results of the management. If employees do not go to shifts or are constantly late, management should take all possible both formal and informal warnings. Management and shift management play an important role in these situations. Management must take steps that will encourage employees feel the need to go to shifts and not be late in any case. Every employee must know what sanctions the management will apply in the case of repeated absences, or unannounced delays. In the absence of an employee, shift manager must register the absence and resolve, or inform the management that it will deal with it. If the absences are constantly repeated, the employee will have to leave the company.

The reasons for the increased absences in the company are as follows:

- overwork of employees due to lack of labour force,
- employees are unsatisfied with the working environment, or work they perform,
- conflicts in the workplace, no good human relationships among employees,
- burnout of employees due to the constant work on one job position,
- personal problems of employees (disease of children, older members of the family, etc.),
- in the case of volunteers, the reasons are the school obligations.

The increased values of the absence show that the employees are not loyal to the company and do not realize the importance of their work and their own human capital for the functioning of any shift, but also the entire restaurant. The knowledge and skills of employees that comprise their human capital are necessary to achieve the required economic results the owners and managers of the restaurant have defined. Therefore, it is necessary to motivate employees not to be absent in the work, but go to work in each shift and always on time.

SYNTHETIC INDICATOR OF THE EFFECTIVE USE OF HC

There are several factors affecting the effectiveness of the use of human capital, however, the employees themselves can affect to a large extent how management will organise and make use of their capital effectively. A single and comprehensive picture of how to use human capital effectively in the company provides an indicator of the use of HC, which we propose to the special conditions of the fast food company. It is the synthetic indicator, which is composed of the above mentioned indicators of fluctuation rate, absence rate and crew labour, which largely affect the functioning of the company and everyday work and work shifts.

$$\text{synthetic indicator of the effective use of HC} = \frac{CL + \text{fluctuation rate} + \text{absence rate}}{\text{number of employees}}$$

All partial indicators are dynamic and are constantly changing. Their sum has a positive or negative impact on the performance and economic results of the company. Then, their sum is divided by the average monthly number of employees. The number of employees in the company plays an important role, because the dynamics of the environment causes a constantly changing number of employees.

Indicator > 1

- if the indicator of the use of HC is a number bigger than 1, it is an alarming number for the company, because the sum of the negative affecting indicators is bigger than the average number of employees.
- this situation causes the overwork of employees, negative economic results, dissatisfaction of employees, frustration of management, frustration of shift managers for whom it is difficult or sometimes impossible to arrange the effective functioning of shift.

Indicator ≤ 1

- ideal situation occurs if the result of indicator is smaller or equal to 1. The smaller the number, the more pleasant and healthier atmosphere in the company. The employees are satisfied, they realize the importance of their work and the importance of their arrivals to shifts, managers are able to effectively lead and manage shift, what reflects in the indicator of CL.

After a careful analysis of internal environment and inserting "synthetic indicator of the effective use of human capital" into the formula, personnel manager can find that the effectiveness of the use of human capital will gradually decreases or increases. Then he can take corrective action.

The reasons why the effectiveness of the use of human capital in concrete fast food company is reducing is several. After the analysis and monitoring of the internal environment, it turned out that the managers do not have enough knowledge and skills in management and shift management. This finding is crucial, because the right decisions of managers are necessary for the effective use of the potential of the employees, their knowledge and skills forming their human capital. The manager is a contact person between management and employees, and therefore, he must approach his work responsibly. An internal environment survey showed that the management is not motivated to make above average performance and does not have sufficient knowledge and skills that are necessary for the required performance.

Another reason, which has been detected from a thorough analysis of the internal environment, is the lack of interest and the absence of employees in the organisation of work. Employees often have the feeling of inferiority; managers do not care about their opinion and sometimes promote the directive method of shift management. Employees would be motivated, if they are given space to demonstrate their knowledge and skills, show the entire human capital they have, thus contribute to better results and get a sense of the needs and self-realization.

CONCLUSION

If companies want to become a successful, it is essential that they begin consider human capital as an asset, or company wealth. It is also important to invest in human capital, not as cost of company, but as an expenses bringing benefits in the future. Measuring the value of human capital, measurement and management of its effective use is a basic idea on which companies should build their competitiveness. However, HC metrics must necessarily be based and also follow key indicators of company performance. These activities take human resources managers a lot of professional knowledge, experience and creativity. It follows that the metrics of HC effectiveness are different, for example, in a commercial organization and different in a transport, built or fast food companies. This is new and very interest topic for solving problems in diploma or doctoral theses.

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Measures in Forming a Harmonious Family Based on the Practice of Noble Values Among the Participants of *Bicara Sakinah* (Talk on Harmony) at *Pusat Islam* (Islamic Centre), Kuala Lumpur

A'dawiyah ISMAIL

*Department of Da'wah & Leadership Studies,
Faculty of Islamic Studies University Kebangsaan Malaysia,
43600 Bangi, Selangor. Malaysia
ada@ukm.edu.my*

Siti Syarah M. TAWIL

*Department of Da'wah & Leadership Studies,
Faculty of Islamic Studies University Kebangsaan Malaysia,
43600 Bangi, Selangor. Malaysia
syarah_iman@yahoo.com*

Jawiah DAKIR

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia,
43600 Bangi. Selangor. Malaysia
jawiah@ukm.edu.my*

ABSTRACT

The family institution is the earliest institution responsible in shaping the personality and character of each family member. Correspondingly, noble values are important aspects in the formation of a harmonious family. However, today these noble values are less practiced within the families, causing for the emergence of various family conflicts. Hence, the practice of positive values could influence and encourage mankind in leading a better life, as demanded by Islam. Among the noble values that are able to create an atmosphere of harmony in the family are mutual respect, mutual help, being affectionate and loving, being responsible, and also being tolerant and trustworthy. This article aims to discuss the measures in creating a harmonious family based on the practice of noble values as taught by Islam. The design of this study is quantitative, in the form of a survey. This study used the questionnaire instrument which were distributed to 171 respondents who participated in the *Bicara Sakinah* (Talk on Harmony) program, organized by the Malaysian Consultative Council of Muslim Women (*Majlis Perundingan Wanita Islam Malaysia* (MPWIM)), Islamic Da'wah Foundation Malaysia (Yayasan Dakwah Islam Malaysia (YADIM)) at the Islamic Centre (*Pusat Islam*), Kuala Lumpur. Research data were analyzed descriptively using the frequency, percentage and mean score using the Statistical Package for Social Science (SPSS) computer software version 23. The findings show that the measures in forming a harmonious family based on the noble values from the aspect of religious demands is at a moderate level (mean=3.76), from the aspect of communication (mean=4.33), value of responsibility (mean=4.54), and the value of affection (mean=4.33). Overall, the findings indicate that most respondents have agreed and adopted the measures in creating a harmonious family based on the noble values of family life. Noble values that are applied in family life could become a fortress of strength in producing good and useful generation. Therefore, each individual in the family needs to strive and help each other in developing a harmonious family which is based on the noble values as molded by Islam, based on the teachings of the Quran and Sunnah.

Keywords: Noble Values, Measures, Family, Sakinah (Harmonious)

INTRODUCTION

The family is the children's first institution when they were born, hence the family needs to provide a suitable and conducive environment for the optimum development of the children (Nur Zahidah Jaapar et al 2011:2). In the context of a harmonious family, noble character is very important in human life because it gives a huge influence and impact on a Muslim person's behavior and actions. According to Zaitunah Subhan (2001), a harmonious family is a family that is built based on a legitimate marriage, is able to meet the physical and spiritual needs of its members, is able to create an atmosphere of mutual love and affection (*mawaddah wa rahmah*), and is also harmonious and balanced. Therefore, family life according to the teachings of Islam is directed towards the practice of noble values as recommended by the religion because it leads to everlasting happiness. Peacefulness in a Muslim family

guarantees the creation of quality children, who will then become the country's pillar in the future (Noor Azila 2007:33). According to al-Farabi, as cited by Zahidah Jaapar et al (2011:26), in relation to creating a happy and peaceful life, one needs to practice the values of humanity, as well as good behavior because all those practices play a role in determining a person's happiness in this world and the hereafter. On the other hand, noble values in the context of western life are relevant metaphorical and philosophical thoughts on the questions of life, human behavior, and civilization in human history.

The family institution also functions as a community agent in fostering noble values and social ethics in preparing an individual to become a useful and quality person (Fadzilah Kamsah 2004:151). Apart from that, noble values are capable of influencing the psychological development of the individuals, families as well as the communities (Fatimah Mohamed 2007:63). This is further supported by Ayob Jantan (2004:52), who stated that noble values are universal values, and that they cross all faiths, cultures and nationalities. Noble values that are practiced also have positive impact on an individual, and become a solid shield in a person's self-esteem to become more authoritative (Ibrahim Noor 2005:70). In the context of Islam, noble values are universal values that emphasize on commendable manners, civility, and decency of an individual within the framework of the person's relationship with God, other human beings and nature (Shuraimi Abdullah 2008). The Prophet Muhammad SAW said:

"Fear Allah wherever you may be. Accompany bad deeds with good deeds, then you shall be able to eliminate them, and mix around with other people with good manners".

(The Book of Arbain, Chapter 18, at-Tirmidzi no 1987)

The development of noble values in today's families is increasingly lost due to the family members' attitude of selfishness which leads to fights and arguments and lack of respect for each other. As a result of this situation, noble values need to be strengthened and practiced by family members in their lives (Adawiyah Ismail & Syarah Tawil: 2016). As such, the stability of the family unit is highly dependent on the family values that underlie the growth and development of the individuals in the family. This is because, as mentioned by Abd Rahim Abd Rashid (2006:6), noble values that are inculcated in the family life can prevent various bad and negative influences from affecting the family institution. According to Sufean Hussein (1989), noble values can be applied accordingly through speech, gestures, comprehension, assessment, role models, and content. Each individual in the family needs to play a role and act in accordance with her or his function and position according to the family structure in order to form a harmonious family based on noble values (Adawiyah Ismail 2016). Hence, human development that is founded on qualities that are characterized by noble values has the potential in producing high quality and good generation that is capable of creating a positive impact, as well as helping in the establishment of a harmonious family.

METHODOLOGY

The design of this study is a procedure for setting the collected data based on specific and systematic planning to establish a network of relationships between the variables involved in a certain study (Kerlinger:1986). The design of this study is in the form of a quantitative survey. The data analysis method used in this study is descriptive analysis. According to Chua (2006), descriptive statistics is a mathematical technique used in processing, arranging, analyzing, and summarizing quantitative data. Data obtained from individuals are combined to create a general conclusion. The sample consisted of the participants of the '*Bicara Sakinah*' (Talk on Harmony) program among husbands and wives at the *Kompleks Pusat Islam* (Islamic Center Complex) in Kuala Lumpur, organized by the Malaysia Consultative Council of Muslim Women (*Majlis Perundangan Wanita Islam (MPWIM)*), the Islamic Da'wah Foundation Malaysia (*Yayasan Da'wah Islam Malaysia (YADIM)*). A total of 171 participants, who are married men and women undergoing family life, have been chosen as the respondents for this study. The survey method was chosen because according to Fullan (1991), it is able to reflect the actual research situation since it needs to adhere to the survey processes and procedures in measuring the views, attitude, and behavior of the respondents. A questionnaire was developed on the measures in forming a harmonious family based on the practice of noble values. The data obtained from the questionnaire were then analyzed using the Statistical Package for Social Science (SPSS) version 23 computer software.

RESEARCH FINDINGS / RESULTS AND DISCUSSION

In this study, the researchers gathered background information about the respondents pertaining to their age, gender, education, occupation, marital status, and duration of their marriage. The respondents' background information is as follows:

Table 1: Respondents' Background

	Item	Number	Percentage
Gender	Male	41	24%
	Female	130	76%
Age	21-30	38	22.2%
	31-40	77	45%
	41-50	19	11.1%
	51-60	32	18.7%
	61 and above	5	2.9%
Education	SPM (MCE)	80	46.8%
	STPM (MHSC)	17	9.9%
	Diploma	26	15.2%
	Bachelor's Degree	33	19.3%
	Masters Degree	15	8.8%
Marital Status	Married	151	88.3%
	Widowed	20	11.7%
Duration of marriage	1-10	110	64.3%
	11-20	37	21.6%
	21-30	14	8.2%
	31 years and above	10	5.8%
Total		171 people	100%

Source: 2016 Questionnaire

Based on Table 1, it can be seen that majority of the respondents are female at 76%, while male respondents make up the remaining 24%. This shows that women are more interested in participating in family-based programs compared to their male counterparts. As for the respondents' age group, majority of them are between the ages of 31 to 40 years old (45%), followed by those between 21 to 30 years old (22.2%), between 51 to 60 years old (18.7%), between 41 to 50 years old (11.1%), and finally those who are 61 years and above (2.9%). Next is their level of education where the highest number of respondents (46.8%) hold the *Sijil Pelajaran Malaysia (SPM)* (Malaysia Certificate of Examination (MCE)) qualification. At 19.3%, Bachelor's Degree holders make up the second highest number of respondents, followed by Diploma holders (15.2%), *Sijil Tinggi Peperiksaan Malaysia (STPM)* (Malaysia Higher School Certificate (MHSC)) certificate holders at (9.9%), and finally Masters Degree holders (8.8%). The data shows that the respondents' education level is moderate. Their marital status shows that majority (88.3%) are already married, while the other 11.7% are widowed. As for the duration of marriage, 64.3% of the respondents have been married between 1 to 10 years. This is followed by 11 to 20 years of marriage (21.6%), 21 to 30 years (8.2%), and finally more than 31 years (5.8%). This shows that majority of the respondents have been married between 1 to 10 years.

Table 2: Measures in Developing a Harmonious Family Based on the Practice of Noble Values (Religious Demands)

Item	SD	D	NS	A	SA	Mean
I got married to obey Allah's commandments	2 (1.2%)	-	1 (0.6%)	50 (29.25)	118 (69%)	4.64
I make supplications to Allah so that I am given assistance in my family life	1 (0.6%)	36 (21.1%)	1 (0.6%)	-	133 (77.8%)	4.77
I would urge my family members to perform things that are commanded by Allah	1 (0.6%)	-	1 (0.6%)	44 (25.7%)	125 (73.1%)	4.73
I would prevent my family members from committing things that are forbidden by Allah	1 (0.6%)	-	2 (1.2%)	49 (28.7%)	119 (69.6%)	4.68
Overall mean						3.76

Source: 2016 Questionnaire

Based on Table 2, the item with the highest mean score for fulfilling religious demands by the respondents, in their effort to create a harmonious family, is the item “I make supplications to Allah so that I am given assistance in my family life” with a mean of 4.77. This shows that majority of the respondents make supplications to Allah as their practice in family life. Supplicating serves as a person’s internal drive, strength, faith, hope, and blessings in whatever deeds that are done (Ismail Kamus, 2010). This is followed by the item “I would urge my family members to perform things that are commanded by Allah” (mean=4.73). Reminding each other and to call upon family members to do good deeds are important so that they do not continue to make mistakes and to live in vice. Next, 69.6% of the respondents strongly agreed with the item “I would prevent my family members from committing things that are forbidden by Allah”, with a mean score of 4.68. In family life, the head of the family plays an important role and responsibility in leading the family members so that they are spared from committing things that are forbidden by the religion. Among the things forbidden by the religion are slandering, lying, pitting, gossiping, and so on. The item “I got married to obey Allah’s commandments” scored a mean of 4.64 , with 69% of the respondents who strongly agreed. Getting married is a *sunnah* (something that was performed by the Prophet) of the Prophet Muhammad SAW, and is a religious demand in order to fulfill the instinct of a human being. A person who has fulfilled the demands of the religion, thus also fulfills his physical and spiritual demands without it affecting his image and honor (Jainal Sakiban 2012:19). Overall, the mean score of the respondents on their religious demands is at a high level of 3.76. These findings are in line with the demands of Islam which calls upon its followers to practice religious values in leading their married life. Apart from that, families that are formed and nurtured to perform the commandments of Allah the Almighty will produce harmonious families and a good generation.

Table 3: Measures in Developing a Harmonious Family Based on the Practice of Noble Values (Communication)

Item	SD	D	NS	A	SA	Mean
I use kind words to my family members	1 (0.6%)	-	2 (1.2%)	76 (44.4%)	91 (53.2%)	4.51
I speak the truth to my family members under any circumstances	1 (0.6%)	3 (1.8%)	14 (8.2%)	88 (51.5%)	65 (38%)	4.24
I am honest with my spouse in all matters	1 (0.6%)	4 (2.4%)	12 (7%)	90 (52.6%)	64 (37.4%)	4.23
Overall mean						4.33

Source: 2016 Questionnaire

Based on Table 3, the results of the survey show that the highest mean score value in the category of the respondents’ communication in creating a harmonious family is the item “I use kind words to my family members” (mean=4.51). A good family will use positive words when communicating with each other since it is the morality and mannerism that are highly demanded in the religion. This is followed by the item “I speak the truth to my family members” with a mean score of 4.24. In family life, telling the truth or being honest is something that needs to be practiced while communicating with each other in order to avoid misunderstandings and suspicions from happening. Next is the item “I am honest with my spouse in all matters” (mean=4.23). Being honest by not hiding any faults or wrongdoings helps to cultivate the atmosphere of openness between couples or among the family members. The findings show that the respondents’ value of honesty in communicating is high. Honesty, whether towards the spouse or the children, is very important in the establishment of a harmonious family. This positive communication is the manner and morals that are highly demanded by the religion so that family members do not misunderstand and have suspicions towards each other. According to Iran Herman (2003), good communication in the family will help its members to establish effective relationships with each other since the attitude of being concerned and caring, open, having mutual respect, and the willingness to listen to other people will exist through communication.

Table 4: Measures in Developing a Harmonious Family Based on the Practice of Noble Values
(Responsibility Values)

Item	SD	D	NS	A	SA	Mean
I make sure that my family members are in a safe condition	1 (0.6%)	-	2 (1.2%)	52 (30.4%)	116 (67.8%)	4.66
I make sure that the basic amenities for my family members are sufficient	1 (0.6%)	1 (0.6%)	1 (0.6%)	75 (43.9%)	93 (54.4%)	4.50
I work tirelessly to increase my family's income	2 (1.2%)	2 (1.2%)	5 (2.9%)	76 (44.4%)	86 (50.3%)	4.41
I seek for lawful sustenance for the sake of my family's happiness	1 (0.6%)	-	2 (1.2%)	38 (22.2%)	130 (76%)	4.73
I would accompany my spouse when he/she is seeking treatment at the health center	1 (0.6%)	3 (1.8%)	2 (1.2%)	83 (48.5%)	82 (48%)	4.41
Overall mean						4.54

Source: 2016 Questionnaire

Table 4 shows the mean scores of the respondents in terms of the responsibility values they practice in establishing a harmonious family. The highest mean score is for the item “I seek for lawful sustenance for the sake of my family’s happiness” (mean=4.73). This is in line with the Islamic ruling where to seek for lawful sustenance is mandatory for every Muslim. Providing sustenance from lawful sources for the family will produce good and useful generation. This is followed by the item “I make sure that my family members are in a safe condition” (mean=4.66). This indicates that the respondents prioritize the safety of their family members as a responsibility that needs attention. As for the item “I make sure that the basic amenities for my family members are sufficient”, the mean score is 4.50. In this context, having the attitude of being responsible in providing the basic amenities for the family members is important since it is a need to facilitate their daily life activities. Two items which have the lowest mean score are “I work tirelessly to increase my family’s income” and “I would accompany my spouse when he/she is seeking treatment at the health center” with a mean score of 4.41 each. Based on the item “to increase the family’s income”, life would be more balanced if the family has a source of income that is able to support its everyday life. Apart from that, it can also prevent the onset of family financial difficulties which could cause other problems if they are ignored. Meanwhile, accompanying a person’s spouse to the health center shows an individual’s concern for and awareness of his or her spouse’s health conditions. Indirectly, this helps married couples to strengthen the bond of love and affection for each other. The results of this study found that majority of the respondents practice responsibility values in the family for the benefit and happiness of the household. Each family member has his or her own roles that need to be performed, and it becomes a responsibility that needs to be shared together, especially by the head of the household. The functionality of good responsibility values in the family will contribute towards the strength of the family institution. According to Adawiyah Ismail (2016), family members who are devout in carrying out their responsibilities will be able to create peace and tranquility in their family life.

Table 5: Measures in Developing a Harmonious Family Based on the Practice of Noble Values
(Affectionate Values)

Item	SD	D	NS	A	SA	Mean
I would provide sufficient attention to my family members	1 (0.6%)	-	3 (1.8%)	65 (38%)	102 (59.6%)	4.56
I would always express my love and affection to my spouse	2 (1.2%)	1 (0.6%)	8 (4.7%)	68 (39.8%)	92 (53.8%)	4.44
I would always utter romantic words to my spouse	2 (1.2%)	3 (1.8%)	24 (14%)	78 (45.6%)	64 (37.4%)	4.16
I would give special gifts to my spouse during our wedding anniversary	3 (1.8%)	4 (2.3%)	21 (12.3%)	76 (44.4%)	67 (39.2%)	4.16
I would hold discussions with the whole family because it is able to strengthen family ties	1 (0.6%)	1 (0.6%)	9 (5.3%)	91 (53.2%)	69 (40.4%)	4.32
Overall mean						4.33

Source: 2016 Questionnaire

Table 5 shows the percentage and mean scores for the respondents' answers towards the value of affection in creating a harmonious family. The highest mean score obtained is for the item "I would provide sufficient attention to my family members" (mean=4.56). The attitude of being caring and concerned for the family members will create an atmosphere of love and affection, and will also foster closer relationship with each other. This is followed by the item "I would always express my love and affection for my spouse" (mean=4.44). This is because gentle treatment and hospitality showed by the couple will create a warm, harmonious and peaceful atmosphere in the household. According to Noor Azilawati (2007), affectionate service or treatment by a couple is an important factor in creating a cheerful and happy atmosphere. The next item is "I would hold discussions with the whole family because it is able to strengthen family ties" with a mean score of 4.32. Having discussions can create positive communication, and would indirectly strengthen and foster closer ties of affection among the family members. There are two items with the same mean score, which are "I would always utter romantic words to my spouse" and "I would give special gifts to my spouse during our wedding anniversary" with a mean score of 4.16. Based on the mean scores, all of the items show that the value of affection is at a high level. Islam is a religion which strongly emphasizes on the importance of the value of love and affection in the family system. Love and affection are the foundation of happiness and peacefulness in the family life. Abdullah Nasih Ulwan (1987:512) explained that love is tenderness, sensitivity and fineness of the heart that creates compassion for others, feels the pain, and experiences their grief. The value of love and affection showered by both parents would strongly influence the behavior of their children. Friendly relationship and the feeling of love and affection that are abundant in the family are able to assist the mental, physical, and spiritual development of the family members. (Tengku Intan Zarina Tengku Puji 1998:31). Therefore, the value of love and affection needs to be reinforced in order to strengthen the ties among family members.

CONCLUSION

Based on the findings of the research and the above discussion, it can be concluded that the respondents emphasize on and apply noble values in their family lives. In relation to that, in the effort of establishing a harmonious family based on the practice of noble values, each family member needs to play a role, especially for the father as the head of the family who will be leading and shaping the lives of his family members. A harmonious family is the ideal family that is demanded by Islam, in line with the teachings of the Quran and al-Sunnah. It is a family that is laden with harmony, mutual respect, and helping each other, as well as benefiting other people. These benefits are not only felt by the immediate family members, but also by the surrounding community (Evi Sofia, Wawan G.A 2006:75). It is obvious here that the harmony of the household depends on the foundation of a good family life which is built using positive values taught by Islam. The family institution needs to be strengthened with noble values that are in accordance with the religion in order to produce individuals in the family who are responsible and able to fend off negative influences brought about by the rapid pace of development. The fact is, the effort of shaping the character of the individuals in the family should not be shouldered by the parents alone, but also calls for all parties to work together in performing their respective roles. Ultimately, this will be able to create a happy and peaceful life, as well as receiving the blessings from Allah the Almighty.

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Measuring Robustness of Thai Athletes Using Trait Robustness Of Self-Confidence Inventory (TROSCI)

Sarstrawit WONGBUTLEEWATTHANA

Faculty of Education,

Rajabhat Roi Et University,

Thailand

sarstrabee@gmail.com

ABSTRACT

Trait Robustness of Self-Confidence (TROSC) associates closely with strong willingness of athletes. This research examines the Thai version of TROSCI (T-TROSCI) validity and reliability with Thai youth athletes. Subjects consisted of 320 athletes who participated in the 38th Rajabhat University Northeast Games and employed by multi-stage sampling. The original version of TROSCI was taken into the back translation technique for identifying the T-TROSCI content validity and then a questionnaire was applied to 50 Thai National youth athletes so to examine measure reliability before collecting the next 320 samples. Then, confirmatory factor analysis (CFA) was analyzed in order to support its measure construct validity. Also, structural equation modeling (SEM) testing considered convergent validity by testing T-TROSCI and Thai Mental Toughness (T-MT), and examining concurrent criterion-related validity via sport success as criterion variable. T-TROSCI are highly valid in terms of content, , construct (Chi-square =20.46, df=13, p=0.0843, CFI=.98, RMSEA=0.042, SRMR=0.037), convergent (Chi-square =1,435.11, df=807, p=0.000, CFI=.97, RMSEA=0.049, SRMR=0.050) and concurrent criterion-related validity (Chi-square =52.10, df=38, p=0.063, CFI=.97, RMSEA=0.034, SRMR=0.050), and reliability ($r=.72$).

Keywords: Trait Robustness, Self-Confidence, Thai Athletes

INTRODUCTION

It is common among athletes, coaches and sports operators must have the confidence in themselves, self-confidence is a key factor to make the sport a success. There are several studies that show that self-confidence is one of the most important factors that affect the expression of intensity athletic performance of athletes (Craft, Magyar, Becker, & Feltz, 2003; Moritz, Feltz,. Fahrbach, & Mack, 2000; Woodman & Hardy, 2003), despite considerable research effort was to try to find ways to develop confidence. This is an important relationship between expressive behavior of the athletes themselves (Bandura, 1997) The ability of the athletes will be very important to the athletes' confidence in their findings that the strong sense of confidence. It will be linked to the adherence to the spirit of the athletes to be strong as well (Bull, Shambrook, James, & Brooks, 2005; Jones, Hanton, & Connaughton, 2002) Moreover, Bull et al. (2005). reported about the flexibility of self-confidence. And a strong sense of confidence, which is important to keep the athletes prepared physically and keep focused on their own, which is a key aspect of strengthening the mind in the future, confidence in self. It is important that the background of solving problems. Which according to the results of the study showed that self-confidence is a key feature of professional athletes (Galli & Vealey, 2008; Jones, Hanton, Connaughton, 2007) Moreover, Bandura (1997) suggested the belief in themselves, which is a unique feature. that comes from self-confidence and flexibility to solve the immediate problems of athletes addition, Bandura also provides insights on the belief that diversity in performance in three levels, with a focus on capacity development, including primary level. and the general level of strength, which is the highest level of efficiency in their ability to demonstrate that athletes are believed he could do it as part of a general belief in the efficacy of their own to show the level. A person with a belief in the efficacy or to transcend the situation and the final is the strength of its performance in which the expression of faith in their ability to confront the obstacles identified by the experience. Additionally, Bandura (1997) has also discussed the performance of the weak sentiment. This could be a result of the unsuccessful experience in the competition, in contrast, people who have faith in the potential of his stand. He has perseverance Try to do things that are difficult or obstacles. Finally successfully The basic concept in the study of Bandura for measuring performance in the beginning. The questionnaire in the belief that their ability to do so. There are 10 levels This level, which will lead to the level of their performance until a measurement of the accuracy of its performance in addition Bandura also developed a level of trust with the measure 100. 10 levels divided by the level of detail deeper. The scores range between 0 (no can do) the level is 50 (there is sure to be moderate) to guarantee the 100 (that can do absolutely), which translated means self-confidence of voters. well done all of you. I believe that confidence in their performance is something that can be improved by using a phenomenon or situation and different.

In addition, Lee & Bobko (1994) have demonstrated the greatest impact from the use of Bandura measure of confidence from strong early stage in a different dimension. This was a strong performance. It looks similar to its ability to maintain confidence in themselves despite the unsuccessful experience, it will look similar to the following features are. The behavior remains the same even time will elapse (Fleeson 2007) One of them is a form of self-confidence associated with the self-confidence that it is a form of confidence sport which Vealey (1986). This model explains forecasting features. (Character) Confidence Sports and adaptation goals. (Eg, skills and goals) that are associated with it are convinced Sports in turn influence athletic skills, confidence in their own ability to affect several sports. As a result, the athlete was positive emotions and create conditions to relax under pressure. And in this state, the athletes will have confidence in the result of the match. Even if it does not follow that matter. In addition, confidence in their willingness to contribute to an athlete and concentrated on the job to do. Resulting nervousness about other less confidence in themselves, which have an impact on the target and lead to success. It can be seen that the athlete's self-confidence. The goal is challenging, and as an athlete with low self confidence. It is an easy target This makes those athletes did not show their full potential.

In addition, confidence in their own athletes have also resulted in increased effort in training or competition. It also affects the strategy of the sport. Because athletes are to take risks. Play a lot more confidence in themselves and have a positive effect on the treatment Momentum in athletics. Which is the main factor for the success or defeat in a competitive game. The self-confidence, the athletes have to endure the problems and are trying to turn the situation well and it can be seen that different. Born of self-confidence. Expectations are high for the success in the sport. As well as research overview of self-confidence with the direction the competitiveness of Vealey, Hayashi, Garner, & Giacobbi (1998) found that self-confidence is important to have an effect on the stunt. Sports The level of self-confidence is an indicator of its ability to succeed in sports, which Bandura (1986) has explained more about the confidence in self that influences 1) the selection behavior (Choice. Behavior) is a person to do things one depends on the efficacy of self that has the ability to do two things it or not) affects the effort.(Persistence) and endeavor to work (Effort Expenditure) of individuals with highly specialized confidence. Will result in the existence of the events that have recently encountered an obstacle or an unpleasant experience 3) the thought patterns (Thought Patterns) and emotional reactions (Emotional Reaction) is a person who is confident the highly-be. People who have tried behavior arises from the action. Although some will fail, he will not give up. And not claimed as a matter of fate. The emotional reaction is the ability to manipulate the environment in the future. Which affect emotional responses. The individuals with high self-confidence only be proud when their stunt well. Do not feel ashamed when mistakes are happy to do. And no regrets when results do not go as expected. And motivate yourself to try harder obstacles encountered addition, Weinberg & Gould (2007) has described the self-confidence can be a success (Performance Accomplishments) to behave confidently (Acting Confidently) a. Think carefully (Thinking Confidently) to visualize (Imagery) strengthening physical (Physical Conditioning) and preparation. (Preparation) Also, how to build self-confidence is also dependent on social structures and culture. The study of the concept of Vealey (1986) did not consider the strength of conviction but recent studies in quantitative Galli and Vealey (2008), which had discovered the nature of the skills of flexibility. (The part that caused the problem solving) flexibility in the sport as defined by the Galli and Vealey help achieve more clarity about the confidence of Bandura in the strong performance of the past. I was still aware of the issue of rehabilitation of athletes to return to normalcy after the disappointment in the results (Clough, Earle, & Sewell, 2002; Gould, Hodge, Peterson, & Petlichkoff, 1987; Jones. et al., 2002) strengthened the character of the self-confidence of the athletes will strengthen higher skills and more, it would create a level of self-confidence even further (Bandura, 1997).

This article will present a series of studies to develop accurate measurement of the trait robustness of self-confidence of the athletes attending sporting Rajabhat University. The Northeast at 38 for basic information important in the development of self-confidence in sports. This will have a profound effect on the development of professional athletes to be successful in the next competition.

OBJECTIVE

To test and quality tools for the measurement trait robustness of self-confidence in athletes Thailand, which consists of qualitative aspects content validity, structural validity, convergent validity, and concurrent criterion related validity.

METHODOLOGY

Sample

The sample used in this study is the athletes Thailand. Participating university athletics in competitive was 38th Rajabhat University Northeast Games at the University of Rajabhat Mahasarakham .Between 20 -26 December 2014, the size of the sample as a condition of the test, the relationship linear structure, the size of the sample, the minimum is 20 times the questions in the questionnaire (Tabachnick & Fidell, 1996), so samples. This research was 320 people randomly selected by multistage (Multistage Random Sampling) to obtain samples from a variety of sports. And covered by gender, age and hometown of the athlete. This is a good representation of the population of Thailand athletes.

Tools used in research

1. The tools used in this research is to measure the trait robustness of self-confidence in athletes Thailand (Trait Robustness of Self-Confidence Inventory: TROSCI) of Stuart Beattie, Lew Hardy, Jennifer Savage, Tim Woodman. , & Nichola Callow (2011), which the researchers interpret and verify the validity of the content validity query by a qualified specialist doctorate in sports psychology. And Sports Science Both in Thailand and overseas by way of Back Translation have questions measure trait robustness of self-confidence in young athletes Thailand 8 Article 8 elements that represent trait robustness of self-confidence. Thailand in young athletes The scale of this research is a self report. The rating scale assesses the 9th rank (rank 1 is not true for me is true for me, and ranked 9th). table 1

2. The development of a trait robustness of self-confidence in this research was developed by back translation the nature of the trait robustness of self-confidence in Thailand's athletes. Join sporting university. The Northeast at 38 20-26 December 2014, 320 people (160 male, and 160 female) with the experts in psychology, sports psychology, sports Doctoral degrees in 2 patients and professionals. The English have a PhD in English of two people by a specialist foreigners in English, with a Ph.D. in English number one, to analyze and review the terms of the measure is trait robustness of self-confidence. It shows the quality of the content validity of the questionnaire in table 1.

Table 1: The Trait Robustness of Self-Confidence Inventory (TROSCI)

		Strongly Disagree				Neutral		Strongly Agree		
		1	2	3	4	5	6	7	8	9
1	A bad result in competition has a very negative effect on my self-confidence.	1	2	3	4	5	6	7	8	9
2	My self-confidence goes up and down a lot.	1	2	3	4	5	6	7	8	9
3	Negative feedback from others does not affect my level of self-confidence.	1	2	3	4	5	6	7	8	9
4	If I perform poorly, my confidence is not badly affected.	1	2	3	4	5	6	7	8	9
5	My self-confidence is stable; it does not vary very much at all.	1	2	3	4	5	6	7	8	9
6	My self-confidence is not greatly affected by the outcome of competition.	1	2	3	4	5	6	7	8	9
7	If I make a mistake it has quite a large detrimental effect on my self-confidence.	1	2	3	4	5	6	7	8	9
8	My self-confidence remains stable regardless of fluctuations in fitness level.	1	2	3	4	5	6	7	8	9

Data collection

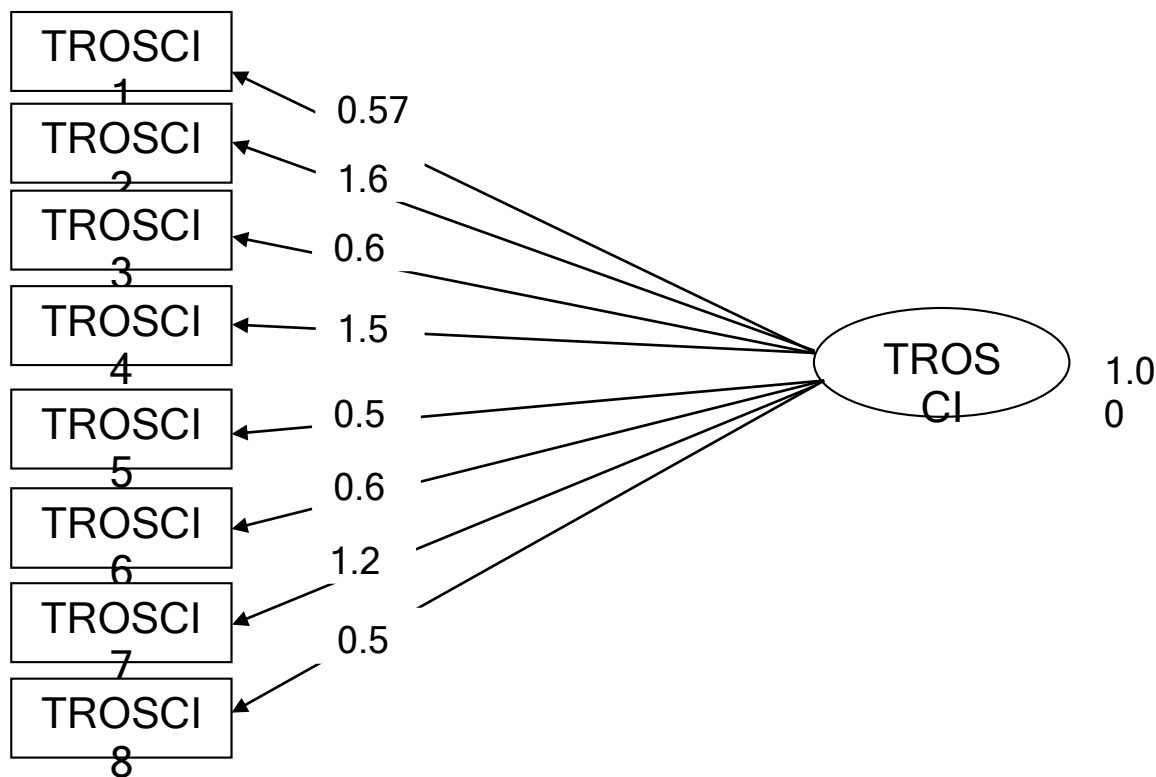
The data collected in this study collected data manually Rajabhat University. The Northeast was 38 at Rajabhat Mahasarakham University. Between 20-26 December 2014, through coordinated by athletic trainers or managers. Then the athletes answered questionnaires during the busy athlete from competition. And select subjects with ease. And willing to provide information. The researcher explained the purpose of research. How to answer a measure trait robustness of self-confidence. And provide samples to sign the measure before answering the question, the researchers examined the question of the integrity of the sample. If found incomplete, it will be asked again to confirm the answer. To get the most complete, accurate information.

Data analysis

This research analyzed with descriptive statistics. And test the validity of a measure trait robustness of self-confidence (Trait Robustness of Self-Confidence Inventory: TROSCI) by confirmatory factor analysis (First-Order Confirmatory Factor Analysis: 1st CFA) of athletes. Thailand. The statistics used in determining the appropriateness of the information is harmonized index (Fit Indices), which include Chi-Square, CFI, TLI and RMSEA and the weight of the composition. (Standardized Factor Loading)

RESULTS

Test models of the trait robustness of self-confidence (TROSCI) from the model and found that the harmonized index of model assumptions that: Chi-square = 20.46 df = 13, $p = 0.0843$, RMSEA = 0.042, CFI = .98, with the model in figure 1.



Chi-square = 20.46 df=13, $p = 0.0843$, RMSEA = 0.042, CFI = 0.98

Figure 1. Factor Loading and Error Terms for the 1st CFA of TROSCI

DISCUSSION

Summary of the research results

1. Overview of samples from athletes Thailand. The sample in this study, a total of 320 people, 160 male athletes and 160 female athletes were classified by age level found in athletes younger than or equal 18 years, a majority (50.7 per cent) of people aged 19 and over (49.4 percent), almost half the level of higher education in years one and two (62.2 percent). The second is the level of higher education in year three (24.1 percent) and education level of higher education in four years (6.9 percent), respectively, also showed that the samples play team sports, mostly. (87.2 percent)

2. Analysis of the content validity of the test as a trait robustness of self-confidence. The development of a trait robustness of self-confidence. In this study found. As a measure of quality of content validity. The researcher has developed a reverse back translation as a measure trait robustness of self-confidence. English version. The research, a measure of Stuart Beattie, Lew Hardy, Jennifer Savage, Tim Woodman, & Nichola Callow (2011) by the number two sports psychology experts who have PhDs. Translated from English into Thailand and professionals in English

Doctoral degrees are 2 translation from Thailand back to English again later, the researchers brought the measure trait robustness of self-confidence to foreign experts, the English number one who has a PhD in order to determine compliance-oriented content. Then test the construct validity for the measurement of the trait robustness of self-confidence. Results from the analysis showed that the harmonized index of analyzing the validity of a measure trait robustness of self-confidence. Has the right (Chi-square = 20.46, df = 13, p = 0.0843, CFI = 0.98, RMSEA = 0.042, SRMR = 0.037), which showed that. A measure strengthened the character of an athlete's self-confidence in Thailand as a measure of the construct validity. Including analysis for quality assurance. By calculating the Cronbach alpha coefficient are equal 0.72 for the show that was designed to measure the trait robustness of self-confidence. Have confidence in the good.

3. Analysis of convergent validity. A measure trait robustness of self-confidence which has a similar theory for the measurement of psychological strength (Choosakul & Julwanichpong, 2010). The results showed that the harmonized index of analysis, validity as a measure of the trait robustness of self-confidence and a psychological measure the strength of the athletes Thailand. A reasonable fee (Chi-square = 1,435.11, df = 807, p = 0.000, CFI = 0.97, RMSEA = 0.049, SRMR = 0.050), which suggests that the two measures are closely related issue is the evidence indicates that there is validity.

4. Analysis of the structural measures trait robustness of self-confidence on the success of athletes, sports Thailand. One key objective of this research is to determine the concurrent criterion-related validity for the measurement of the trait robustness of self-confidence. In this study the accuracy of such determinations by defining and developing variable success as a criterion variable that correlated with the strength of character, self-confidence for the athletes Thailand. The variable is the result of a strong trait of self-confidence. This means that Sports success is the criteria used to judge the validity of a measure strengthened the character of self-confidence. The results showed that the test has validity conditions can be measured by the trait robustness of self-confidence. The actual theory Athletes who are mental toughness higher. It would be more likely to have higher sporting achievements. Athletes who are mental toughness lower.

Adjustment of model assumptions by allowing deviation of observed variables some relationship to each other. Due to the nature of the variables used to measure the same way. Analysis result It appears that the model adjusted in harmony with good information. The harmonized index of model assumptions are as follows.(Chi-square = 52.10, df = 38, p = 0.063, CFI = .97, RMSEA = 0.034, SRMR = 0.050) and standard variable coefficient influenced by the strong character of confidence in their own sporting success. = 0.193 confirms the validity of the test scenarios strengthened by the appearance of self-confidence. Contribute to the success of athletes, sports Thailand.

The study was reported and confirmed the validity of the test situation as a trait robustness of self-confidence. Which is measured by the trait robustness of self-confidence. The testing and verification of such quality. The reason that this study has used a variant sporting success criteria to compare and test a strong correlation with the trait of self-confidence. This is consistent with the paper, which proposed that. The success of the athletes have come from a strong psychological component (Loehr, 1986), especially in the development of athletes into the Champions (Norris, 1999), including the recognition of coaches feel that. Strength of mind is vital to progress towards the achievements of the athletes.(Gould, Hodge, Peterson, & Petlichkoff (1987) For this reason the researchers chose a variable sporting success in testing the validity of the test situation as a trait robustness of self-confidence.

The results of this study the trait robustness of self-confidence in their quality in terms of confidence. The construct validity and the convergent validity and examining concurrent criterion-related validity forecasts predict success in the sport of athletics, athletes participating in competitive Rajabhat University. A group of Northeast 38th between 20-26 December 2014 at the Mahasarakham University.

Limitations of this study is just a small sample, while only experimental group, which will further develop and expand the scale trait robustness of self-confidence to take repeated measurements and predict athletes the national team next.

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Mental Health and Marital Violence

Sofia CAMPOS

*Instituto Politécnico de Viseu, Escola Superior de Saúde, CI&DETS
sofiamargaridacampos@gmail.com*

Conceição MARTINS

*Instituto Politécnico de Viseu, Escola Superior de Saúde, CI&DETS
mcamartinsp@gmail.com*

Marisa PINTO

*Instituto Jean Piaget
marisapinto_psi@hotmail.com*

Manuela FERREIRA

*Instituto Politécnico de Viseu, Escola Superior de Saúde, CI&DETS
mmcferreira@gmail.com*

Cláudia CHAVES

*Instituto Politécnico de Viseu, Escola Superior de Saúde, CI&DETS
claudiachaves21@gmail.com*

Rosa MARTINS

*Instituto Politécnico de Viseu, Escola Superior de Saúde, CI&DETS
romymartins@sapo.pt*

ABSTRACT

Marital violence is considered a public health problem, with great family, social and labour impact. Objectives: to characterize the mental health of victims of marital violence. Methodology: a cross-sectional and descriptive study was carried out. The sample was chosen through a non-probabilistic sample obtained by convenience and was made up of 37 victims of marital violence. In order to reach the desired goal, a research protocol was applied, consisting of a sociodemographic questionnaire and the Mental Health Inventory (MHI). The results show that the victims of marital violence are female, between 20 and 69 years old and unemployed, though they are not financially dependent of the aggressor. They exhibit high levels of anxiety, depressive traits, difficulties in emotional and behavioural control and weak positive affects.

Keywords: marital violence; victims; mental health; public health

INTRODUCTION

Violence has been considered a public health problem for over a decade by the World Health Organization (WHO). Among several factors, it emphasizes the intentionality and type of action directed at the victim, as well as the type of consequences generated by the practice of violence (bodily injury, psychological suffering, death, among others), (WHO, 2002, cit. by Berger, 2003). Njaine (2004) argues that violence is rooted in personal and institutional relations, and is seen, on the one hand, by limiting and violating the rights of others and, on the other hand, by the resistance of the oppressed. In the 1960s and 1970s, feminist movements pointed to domestic violence as a social problem, a phenomenon whose real extent remains unknown (Pais, 2010). Marital violence occurs within a relationship when one of the parties uses force or constraint to promote or perpetuate the domination of the other party. In this phenomenon there is an asymmetrical relationship, that is, different positions and powers between the couple (heterosexual or homosexual), in which the aggressor is normally male and the victim female. Violence is often practiced in the couple's home, making this public health problem less visible. Thus, it is crucial to make clear the repercussions that marital violence has on the victims (Nunes, 2003; Alves, 2005). Several researches analyse the costs (economic, psychological, medical and social) of violence,

noting that children who are victims of abuse in adulthood are now part of the mental health system. Most of the studies carried out in the field of psychopathology in a relational dimension have verified that the dysfunction of the organization of the family structure, the processes of interaction and communication or even the experiential context of the families, are the foundation of the occurrence of psychiatric disorders (Díez, 2010). The existence of elements that lead to mental illness does not necessarily imply the existence of disease, since mental health is related to the interrelation of several factors. In other words, different people may or may not develop a pathology in relation to certain risk factors (Moreira and Melo, 2005). Domestic violence encompasses all behaviours/omissions aimed at repeatedly and intensely delivering physical, sexual, mental, economic harm, or even homicide, directly or indirectly to an individual living in the same household or, if not living in the same household, as the perpetrator being a spouse/ex-spouse, or a marital partner/ex-partner. This problem affects women, men, children, young people, the elderly, the disabled and dependents (Matos, 2002). The personality is related to different desires, feelings, and how to express such feelings/emotions. People differ from one another by self-concept, by their perspectives on the world and the future (Gleitman, Fridlund, & Reisberg, 2009). Personality is what makes the individual unique, having identified five dimensions that distinguish individuality - Big Five Model (Dias, 2004; Hansenne, 2003). There is no profile outlined for the victims, only some typical features are observed, namely, being ashamed, silent, unable to react, conformed, passive, emotionally dependent and depressed (Alves, 2005). Nowadays, according to Machado (2010), much research has been carried out to deepen scientific knowledge in the scope of some types of violence still little-known, such as: violence in youth intimacy; sexual abuse among young people; stalking; trafficking human beings and their sexual exploitation; institutional abuse; state abuse; police control/violence against particular communities; among others. Violence is a global social phenomenon that encompasses different social classes, cultures, gender relations, races, and ethnicities (Bezerra, 2006). Interpersonal relationships are situations where violence may occur, characterizing interpersonal violence. Among the various types of interpersonal violence, we highlight domestic violence. This phenomenon did not appear in today's days, it is happening worldwide and has similar characteristics in several countries with different cultures. Marital violence is a circular system, considering that marital violence crosses a cycle composed of three phases: after a long period of courtship there is the phase of tension accumulation, which can last for a few weeks or even a few years. During this phase, minor assaults (physical or verbal) or threats made by the aggressor start to appear. This person resorts to violence to resolve his/her day-to-day tension. So, the victim is in danger since he/she is accused of being the reason for the onset of such tension and a small excuse is enough to release this tension against the victim. This process is also facilitated by the abuser's excessive consumption of alcohol or drugs. In turn, the victim seeks to use strategies to calm him/her or to minimize the situation, which may in some way reinforce the victim's belief that he/she can control the aggressor's violence, causing some impact on the escalation of the violence. The strategies commonly used by the victim are: to deny the seriousness of the situation, to blame himself/herself for what happened or to attribute external causes to the aggressor's behaviour (Walker, 2000; APAV, 2010). The next phase is called the violent attack phase, in which the victim is physically and psychologically attacked by his/her partner, defending himself/herself passively until the aggressor stops. However, despite the victim being seriously injured, the medical assistance he/she may need is not always made possible by the aggressor. The tension between the couple becomes unbearable and intervention is inevitable. The victim sometimes precipitates the inevitable explosion in order to control where and when the aggression occurs, allowing him/her to take better precautions so as to minimize injury and pain. Over time, the victim can learn to predict at what point in the cycle the period of inevitability lies. Once that point has been reached, there is no escape unless the aggressor decides so. This phase is characterized by the uncontrollable discharge of tensions built during the first phase and only ends when the aggressor stops assaulting, thus leading to a reduction of tension. From this moment on, the victim tries to break the cycle of violence and acts towards eliminating it. Subsequently, the aggressor seeks forgiveness of the victim, which in turn leads to the third phase, the honeymoon phase (Ibidem). At this stage, the aggressor promises to the victim that the violence is over, acting lovingly to him/her, and even offers him/her gifts, apologizes and makes declarations of love. He/she who practices violence comes to believe that he/she will never be violent again. The victim wants to believe in the aggressor, at least at the beginning of the relationship, renewing the possibility of change by the violent partner. This phase provides positive reinforcement for the victim, so as to remain in the relationship (Ibidem). Over time, however, the cycle of violence tends to repeat itself and violence tends to increase. Given the increase in the repetition of acts of violence, the honeymoon phase tends to be shorter and shorter. Despite the repetitive nature of this cycle, the victim is not aware of his/her

predictability and is involved in a mixture of fear, guilt and hope, and hardly ever decides to break up, promoting and maintaining his/her sense of incapacity. This cycle lasts and occurs successively, most often extinguishing the phase of increase of tension and the phase of appeasement or honeymoon, only making room for the phase of violent attack, and can even reach Homicide (Ibidem). Faced with this problem, we set some objectives for this research.

THE STUDY

To characterize the victims of marital violence and describe the mental health of victims of marital violence. The study population was the victims of marital violence of both genders and aged 18 years or over. The sample was selected through a kind of non-probabilistic sampling obtained for convenience, since only the victims of marital violence who were available or who volunteered to participate in the study were included (Carmo and Ferreira, 1998).

The instruments applied to the victims of marital violence were the following: a sociodemographic questionnaire prepared by the researcher and the Mental Health Inventory of Pais-Ribeiro (2001); the analysis of the psychometric qualities performed by the author of the scale indicates that it has good psychometric qualities, namely a Cronbach's Alpha of 0.80 and statistically significant correlations with respect to the comparison measures, thus patenting identical characteristics of the Portuguese version to the original version.

Following the objectives outlined for the present research, the instruments referred to 37 victims of marital violence were applied. They were all female, that is, they correspond to 100% of the sample, with no male subject. It was verified that the age of the victims of marital violence of the present research varies between the 20 and the 69 years, being the average of 38 years, with a standard deviation of 11,6. It was verified that 16 victims of marital violence are married (43.2%); with an equally strong index of representation, the victims in a non-marital partnership with 37.8% (14 victims); followed by divorced victims (5 individuals - 13.5%); and, finally, victims who are legally separated (2 women - 5.4%), that is, the lowest marital status.

FINDINGS

In our study, 54.1% of the victims were not financially dependent of the aggressor and the type of violence most practiced against the victims (94.6%) is psychological violence. Physical violence follows with 81.1% of the sample (30 individuals). With a high representation index, the two types of violence previously mentioned (physical and psychological violence) are associated, since 28 individuals (75.7%) responded positively. Sexual violence, and psychological and sexual violence, were identified by 24.3% of the sample in which 75.7% reported that they were not victims of sexual violence or psychological and sexual violence simultaneously. With a lower level of expression is physical and sexual violence, as well as physical, psychological and sexual violence, both with 7 victims (18.9%). With regard to the physical violence against the victims, it is verified that of the 30 victims of this type of violence, the highest level of representation is the use of physical force with 27 individuals (90%); followed is aggression with furniture utensils or kitchen utensils being represented by 9 victims (30%); then there is the threat with a melee weapon indicated by 8 individuals (26.7%); in penultimate place are the other types of physical violence not mentioned in the questionnaire represented by 5 individuals (16.7%); and, lastly, there are 3 victims (10%) who said they had been threatened with a firearm. Concerning psychological violence against the victims of marital violence, it is observed that the greatest aggression is to call names, insults and the attribution of lovers, with 91.4% showing that they suffered this type of psychological violence; then there are threats to harm the victim by the aggressor flagged in 70.3% of the sample; psychological violence follows based on the depreciation and blame of the victim with 22 individuals (62.9%) claiming to be the target of this type of psychological violence; followed by 60% of the sample who is victim of negative and humiliating comments about physical appearance; then, it is verified that 57.1% of the participants in the study suffered psychological violence through the restriction of contact with the outside; subsequently, the threat of taking away the children or hurting them with 45.7%; 14 participants (40%) of the study claim to have been victims of deprivation of money; and, finally, with a lower degree of representation are the damages to personal objects and other types of psychological violence, both with 12 individuals (34.3%), in which 9 (30%) were subject to sexual violence in this sense, all being forced to have sex against their will. Of the nine victims of sexual violence, 3 (33.3%) suffered an attempt of rape or were in fact raped and 2 women (22.2%) were

assaulted in their genital organs. With less representation, sexual violence is reflected in women's exposure to pornographic magazines, photographs or movies, as well as other types of sexual violence, both with one individual (11.1%) indicating that they were the target of this type of sexual violence. No woman reports that the abuser forced her to have sex with another person or to become a prostitute. The data obtained in this research evidenced that the possession and/or use of a weapon by the aggressor during the acts of violence occurred with 7 victims (18.9%). Regarding alcohol consumption by the aggressor, it is reported by 56.8% of the women. As regards to the consumption of drugs on behalf of the aggressor, it is reported by 4 individuals (10.8%). It was verified that the aggressive acts were practiced in the presence of minors in 59.5% of the cases. The consequences of the aggression were minor injuries (21 individuals - 56.8%) and severe injuries to 4 women (10.8%). The main reasons for the marital violence against the victims were: the altered state of the aggressor due to alcohol consumption and/or non-legal drugs (13 women - 35.1%) and the other motive was related to money, goods, expenses, debts and unemployment in 24.3% of the sample (9 women).

The sample of the present study reveals a mean of psychological distress of 72.5%. The victims of marital violence in this sample show an average of 28, having a standard deviation of 8.95 and presenting a minimum value of 17 and a maximum of 51. Thus, we conclude that these individuals are anxious, since the mean value is below the mean of the variation limit (10-60). As far as depression is concerned, there are some depressive features in the victims, since the mean scores obtained are 16.43, being slightly below the mean of the range of variation which goes from 5 to 29. The standard deviation is approximately 4.8 and a minimum value of 5 and maximum of 25 was assessed. The dimension of mental health, loss of emotional and behavioural control appears with an average of 28.03 with a standard deviation of 9.18, a minimum value of 14 and maximum of 48. The study sample presents difficulties in the emotional and behavioural control, since the mean of the results is slightly below the mean of the variation limit (9-53). Regarding psychological well-being, the mean score was 38.76, also above the middle of the score limit (14-84), with a standard deviation of 12.35, a minimum score equal to 19 points and the maximum of 66, thus revealing that the victims display a reasonable level of psychological well-being. As for the positive affection of the victims of marital violence, the mean is 30.78 points, thus it is below the middle of the limit (11-66), having a standard deviation of approximately 10.81 and presenting as minimum value 14 and maximum 55. As a result, it is noticeable that the victims have little positive affect. In this study, the data show that victims have an average of 30.78 concerning emotional bonds, which shows that they are below the middle of the limit of variation (11-66) and, hence, this dimension of mental health is somewhat compromised. They also show a standard deviation of 10.81 and the minimum score reached was 14 and the maximum 55. Finally, regarding the mental health of the sample, the mean of the scores obtained was 111.27. Accordingly, it is above the score limit (38-226), with a standard deviation of 32.08, a minimum score of 65 points and a maximum score of 186 points, showing that the victims present a satisfactory level of mental health.

CONCLUSIONS

With reference to the characterization of the sample and based on the most recent statistical data on the victims of marital violence collected by APAV in 2010, the present study confirms that marital violence is practiced mostly against women, since the sample does not include any male subjects. Regarding the age of the victims, this varies between 20 and 69 years, thus encompassing the age groups (between 26 and 45 years) described in the literature as being the predominant one. It is also concluded that the marital status that prevails in this sample is married, corroborating with the state of the art. The data obtained confirm that the family type is nuclear with children, adding with the present research that the number of children varies between 1 and 8 children per victim. As far as literacy in this sample is concerned, the majority have the 3rd cycle and a higher education level, the latter being predominant according to the theory, so in this study the results obtained do not fully corroborate. Contrary to the state of art, most are unemployed and only later do the employed women appear. Nevertheless, the study participants are not financially dependent of the aggressor. Based on the data described by APAV (2010), in terms of marital violence, the most prevalent types of violence are psychological abuse and physical abuse, corroborating the results obtained in the present study.

Multiple marital victimization, according to Walker (1984, quoted by Pinto, 2009), consists of physical maltreatment; social isolation; emotional, verbal and psychological abuse; resort to male or female privileges;

threats; sexual violence; and economic control. The data collected add to the state of the art the details of each type of violence (physical, psychological and sexual) that are often used against the victim. Hence, at the level of physical violence, the aggressor many times uses physical force against the victim; in relation to psychological violence, it is verified that the man insults and attributes lovers to the woman; and finally, with regard to sexual violence, the most common is the aggressor to force the victim to have sexual intercourse against his/her will. The literature points out that in most cases there is no use of a weapon in the practice of a crime (APAV, 2010) since most of the victims deny the use of the weapon at the moment of the aggression. Costa and Duarte (2000) report that alcoholic people are more likely to practice marital violence, and this is verified in the present study. APAV (2010) found that the probability of violence is higher when the aggressor is dependent on substances (alcohol, drugs), whereas in this study only a minority of the victims affirms that the aggressor is a consumer of narcotic drugs. The existence of violence in the family of origin (by the parents through maltreatment or severe discipline, as well as having witnessed marital abuse) has direct or indirect consequences on the individual, which may be violent in marriage (Fernandes, 2002). Hence the relevance of identifying whether or not the violent acts were practiced in the presence of minors. It was found that in most cases the children witnessed marital violence between their parents.

Almeida (2009) states that the consequences for the victim of marital violence are diverse and extremely serious. Still, the study reveals that most participants suffered minor injuries. Dias (2004) mentions that the place where marital violence frequently takes place is in the household where the family lives, also highlighting this fact in the present study. The couple's home is the place where most of the women admit to being the target for aggressions. As for the reason for the aggression, what is most highlighted is the consumption of alcohol and/or non-legal drugs, which is one of the reasons that individual-centred approaches defend (Cunha, 2009). The other objective was to describe the mental health of victims of marital violence. As a result, the data obtained show that the victims present little psychological distress, that is, the victim has a certain ability to overcome the experience of stressful situations (Sparrenberger et al, 2003). These women show that they have altered/pathological states of anxiety, that is to say, they have feelings of insecurity, fear, restlessness, imminent danger, with no real ground and that these feelings become too strong and prolong throughout time, with negative consequences for their life, preventing the victim from carrying out a normal day-to-day life (Norvatis, 2011).

The sample highlights difficulties in emotional and behavioural control. In other words, victims have little knowledge of their internal states and the influence these have on their thoughts, behaviours and attitudes. They also show that they do not know how to control impulses, therefore the victim's thoughts lead to acts without having previously thought about their consequences (Lucas, 2010).

Another dimension of mental health that is involved in the victims of marital violence is depression, evidencing some more marked or prolonged sadness, loss of interest in activities usually seen as pleasant and loss of energy or easy fatigue, once they have experienced situations that affect them in a negative way (Borges, s.d.). On the other hand, the sample presents indexes of reasonable psychological well-being, that is, they make a reasonable evaluation in relation to their life and in terms of affectivity based on others and the world (Nunes, 2008; Novo, 2003). The positive affection of these women is a little compromised, meaning they rarely experience pleasant feelings and emotions, and on the contrary they reflect sadness and lethargy (Nunes, 2008). The data also point out that the emotional ties of the victims are not very strong. According to Mota and Matos (2008), they cannot tolerate the most difficult moments in the best way, thus showing that in their childhood the proximity and ability to receive, give and take care of the loving figure was short on the demand physical and psychological protection of the victim. Finally, the mental health of the victims of marital violence is satisfactory, thus revealing that the victims have a certain state of subjective well-being; communication skills and interpersonal relationships; skills in both their personal and social life; abilities of autonomy and choice of life project; intellectual and emotional self-realization; and adaptation to reality. In other words, they demonstrate a certain physical, mental and social well-being (WHO, 2002). The prevalence of marital violence is a complex problem that will not be easily solved. For that reason, the main objective of this study was to characterize the victims of marital violence and the mental health of the victims in Portugal. Most are unemployed, although they indicate that they are not financially dependent of the aggressor. The types of violence predominantly practiced are

psychological violence and physical violence. The detailed physical violence that usually targets the victims is the use of physical force by the aggressor. On the other hand, the detailed psychological violence most used against the victim is the aggressor calling him/her names, insulting him/her and stating he/she has lovers. The detail of the sexual violence that the aggressor applies to the victim is the obligation to have sexual relations against his/her will. Generally, the aggressor did not possess or use weapons at the time of the act of violence; in these cases, they are mostly consumers of alcohol, but do not consume drugs. Violent situations were witnessed by minors and the victim was slightly injured. The place where the violence took place was in the private home of the couple and the reason for the aggression was related to the altered state of the aggressor due to the consumption of alcohol and/or drugs. At the mental health level of the victims exposed to this problem, it is verified that these present little psychological distress, nevertheless they are anxious people, with difficulties in controlling their emotions and behaviour, and they present depressive states. With concerns to the psychological well-being of these women, it is reasonable, yet these evidence little positive affection and few emotional ties. Accordingly, it can be concluded that although the victims of marital violence have a reasonable mental health, from the point of view of the predominantly affective dimensions they show a deterioration. The limitations of the study focus on the choice of the sample, since it is a sampling for convenience, not allowing the generalization of the results. Nonetheless, the results obtained with this study are pertinent to identify risk groups that may be the target of prevention and intervention actions, as well as to identify the impact on the mental health of the victims. All in all, these results demonstrate how important the reinforcement of technical teams is, at the level of psychosocial support to these women, since they are deprived of any affective and emotional support. This aspect should be of particular importance since, without an adequate mental structure, it will be very difficult for these women to re-establish themselves and to restart their lives in peace.

In the course of this study, other issues that could be explored empirically were raised, and it is considered pertinent to, in future studies, compare a group of victims with a group of non-victims regarding personality and mental health. We also suggest research that allow the collection of psychological characterization data at different moments in the women's life trajectory, whether pre or post-marital victimisation. It would also be interesting to know the mental health of minors who witness violent practices between their parents. The study could be replicated in other types of violence, including those that were recently discovered and thus little known, a crucial contribution to scientific knowledge, namely violence in youth intimacy, sexual violence among young people, stalking, trafficking human beings and their sexual exploitation, institutional violence, state violence, control/violence against certain communities (Machado, 2010).

It is important that more and more future researchers take into account more globalizing approaches to the phenomenon, so that an integrative solution of the different actors is sought whenever possible, at the level of theoretical explanation, as well as the intervention of technicians, thus seeking to develop alternative social support structures that also include working with the perpetrator. The latter, in most cases, also lacks professional help in the sense that it is often the case that people with personality disorders do not appear as a deterrent to their behaviour, but rather as a possibility for interpretation and intervention. As long as some family structure remains, even if it is dysfunctional, and while all its resources have not been exhausted, its capability for positive reorganization should not be rejected, and this effort requires intervention also with the aggressor, whenever such is possible.

With the present research we hope to have contributed in some way to a deepening of the knowledge about the mental health of the victims of marital violence in Portugal.

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Metamorfosa Kupu-Kupu Song: Integration of Language and Science Subjects for Developing Early Childhood Education Teachers Competences in Teaching Scientific Concepts

Tuti Tarwiyah Adi

*Faculty of Language and Art,
Universitas Negeri Jakarta,
Indonesia
tutitarwiyah@yahoo.com*

ABSTRACT

The paper examines the integration of Language and Science subjects for developing early childhood education teachers' competences in teaching scientific concepts of metamorphosis through the song. In Indonesia, science is considered as difficult subject for early childhood and the teachers faced the challenges of integrating scientific concepts through playing and fun learning experiences. In the study, the researcher has written the *Metamorfosa Kupu-Kupu* song which its lyric contains of butterfly metamorphosis process. The song lyric is made into three versions which help students to understand the first, second, and third subject pronouns; I, you, and he/she in Language subject and the butterfly metamorphosis in science concepts. The qualitative methodology was conducted in the study through observation and interview with the early childhood education teachers. The results show the teachers has developed their competences in teaching scientific concepts within fun and meaningful learning experiences. The teachers also found that the song helped the students to understand the scientific concepts easily. The song has helped the teachers in developing the integration of science and language subject which is related to Indonesia early childhood education curricula.

Keywords: *science, language, song, butterfly, early childhood education*

INTRODUCTION

Joyful learning has to be applied in a learning process of every field, inclusively in fields of Science and Language. Most teachers are likely to be entangled with a sole experimental method when introducing Science to the early childhood. This also applies to introducing language learning which mostly employs lecturing and storytelling as the most dominant methods. Conversely, early childhood learning particularly the one applied in kindergarten (either the first or second level) is supposed to be joyful and left unburdened.

THE STUDY

A singing activity might be designed as the one to apply in the so-called joyful learning method. Mrs. Kasur explained that children learn through activities they enjoy doing i.e. singing and playing, doing cheerful activities like moving their bodies and singing a song with which they feel happy (Soeratman&Pour, 2003, p. 164). Practicing singing as a learning medium for children, it is suggested that a teacher choose a song that meets children's needs and is appropriate with their age. Rudy My explained that a song is a lyrical message with tones arranged in a melody (Rudy My, 2008, p. 64). The lyric refers to a language used as a means of communication to transfer information. Kodally and Off in Sheppard explained that the naturally occurring music of a child's culture and environment holds the key to the musical development and personality of the child. Furthermore they say that music with the lyrics of a mother language of child tends to encourage language skills and expression as well as help balance social ability (Tarwiyah, 2009, p.42-43)..

The terminology of language usually refers to a code, encryption and other forms of communication system artificially formed. Noam Chomsky formulated a generative theory on language in 1960. The theory stated that the most basic form of a language is a combination of universal syntactic rules for all humans that underlie grammar of all human languages. Wittgenstein explained that a language is a thought that is understandable, related to reality, and has a logical form and structure (2013)

Ferdinand de Saussure, a Swiss linguist, was the first to semantically differ a French word *langage* that means a concept, *langue* that means a specific linguistic system, and *parole* that means a concrete use of a particular language as an utterance. Saussure further explained that a language is the most prominent distinguished characteristic since it signifies each social group as a whole unit that differs from others (2012). This writing refers to a language as a combination of words which form sentences containing meaning in a lyrical song.

The objectives of Science and Language learning, like other learning objectives in general, is to enable children to know, understand, and be able to apply and synthesize what has been learned so that they are able to create something. This complies with scientific learning approach stated on 2013 curriculum and revealed in Bloom's taxonomy.

Bloom's theory suggested that learning must meet the needs of the audience. There should not be a hindrance in learning the knowledge when introduced to the early childhood; indeed, there should be a way to figure out its being possibly transferred at ease.

Singing might be the answer to overcome the above problem since it involves a song, part of music that cannot be in separation with human life. Gardner explained that music is an initial intelligence humans have had since birth (Gardner, 1993). Sheppard revealed that singing might be a way one learns in order to communicate (Sheppard, 2007, p.7). With regards to the theory, it is recommended that Early Childhood Education teachers always be well-prepared with a song bank that will facilitate the learning needs for meeting the day-to-day learning theme objectives.

Availability of the songs somewhat gives rise to another obstacle the teachers encounter when providing joyful learning. Indeed, it is absolutely required for learning through play activity the children. It is delivered most of the master students who have background as an early childhood teacher. Therefore to help the students add the bank of songs containing science and language about the birth of butterflies, in order to improve student competence as early childhood or prospective childhood teacher.

Introducing the knowledge by means of song is a practical way because it may minimize the use of tools which are somehow likely to hinder the transfer of information about the knowledge itself. A song can be practiced at no cost by the voice of the teacher and children which has been physiologically innate. Thus, introducing the knowledge by means of song in a singing activity to early childhood is considered practical, economical and fun in the attempt to foster intelligence. Especially in this case language intelligence. And of course also the musical intelligence.

Science and Language have been part of learning materials that are compulsory to be introduced and taught in Early Childhood Education. The word science is derived from Latin *scientia* that means "knowledge" or "understanding" (2013) This word then formed an English word of science. Science, in the true sense, is knowledge that learns a number of natural phenomena by which secrets of nature can be revealed and understood.¹ Some characteristics of learning science resemble the characteristics of the science itself i.e.: the object of the study is concrete and science develops empirical experiences.

In association with both characteristics in addition to the way the learning is conducted, there should not be a difficulty in learning the science. Unfortunately, teachers may have come to an end when they have to teach it onsite. They have assumed that quality learning always corresponds to significant amount of fund. In fact, there are a number of activities and ways teachers can initiate in order to facilitate joyful learning for children and to promote their intelligence (Tarwiyah, 2013, p.2).

The Law No. 20 Year 2003 regarding National Education System in Indonesia, Article 1 Number 14 states that Early Childhood Education is a development effort designated to a child since birth to age six which is conducted through educational stimulation to allow physical and mental growth and development with a view to preparing children for more advanced education.

The method used in this study is qualitative research. The data begins from the master students report about the difficulty of teaching science in early childhood. The data was taken after they got enriched on a song loaded with science.

FINDINGS

Below is the content of Science and Language learning in the song of “MetamorfosaKupu-Kupu” i.e. learning metamorphose of butterfly and introduction to personal pronoun of I, You, and It respectively. Children are, by means of this song, introduced to the process of butterfly metamorphose, its living environment, and the use of personal pronouns of I, You, and It. This song introduces children to life cycle of a butterfly beginning from a nasty caterpillar, cocoon, to beautiful butterfly. On the other hand, the language content in this song introduces new related vocabulary and practices the use of personal pronouns of I, You, and It either as a subject or object.

METAMORFOSA KUPU-KUPU (Versi 1)

4/4

Do=C

By Tuti TAS

Soprano

4 A ku u lat ke cil... Tubuh ku unik dan mu-
ngil... Bila wak tu ku ti ba... Tubuh
7 ku bergan ti ru pa... A ku ke
10 cil... A ku mu ngil... A
13 ku mera yap be bas... di a lam lu
16 as... Ki ni A ku ke pom pong me nem
19 pel di ba tang po hon... La lu ku ja di ku pu ku
22 pu... ter bang ke la ngit bi ru...

The song above explains children about the life cycle of a butterfly starting from a caterpillar, transforming into cocoon and eventually butterfly. Almost people in Indonesia have been conditioned to think that a caterpillar is a nasty and frightening animal. However, this impression has been diminished by the lyric of the song due to its emphasizing on the idea that a caterpillar is a mere tiny creature with which children unnecessarily feel frightened. Furthermore, children’s amazement will be emerged by the idea that the butterfly with which they have been familiar is surprisingly a transformed animal from a caterpillar. This will foster children’s positive attitude to have thought that a caterpillar is no longer a nasty and frightening creature. Clearly, children scientifically learn to understand that a caterpillar transforms into a cocoon when the time comes. This cocoon hangs on parts of a tree (trunk/branch, twig, even leaf). Eventually, it will transform into a marvelous butterfly which can fly aloft to where it likes. It can be explained that the life cycle of a butterfly starting from a caterpillar to cocoon has a scientific reasoning and naturally occurs by the hand of God. Children will have a critical thinking when learning this science

and have interest in learning more knowledge by means of a joyful song. In consequence, they will start their learning happily.

In terms of Language, the use of word “I” in bolded and colored is made to indicate that this part of the sentence can be in place of other words i.e. You and It. Therefore, this song can be sung in three versions: the caterpillar may refer to “I, You and It. When sung with I, the song will follow version I. Instead, when changed into version You or It, the blue-bolded typed words will accordingly change into You or It.

Clearly see the change that has to be noticed, and understood. Thus, children will finally be able to use the word corresponding to its grammatical function.

METAMOFOSA KUPU-KUPU (Versi 2)

4/4

By Tuti TAS

Do=C

Soprano



Ka mu u lat ke cil... Tubuh mu unik dan mu-
ngil... Bila wak tu mu ti ba... Tubuh
mu bergan ti ru pa... Ka mu ke
cil... Ka mu mu ngil... Ka
mu mera yap be bas... di a lam lu
as... Ki ni Ka mu ke pom pong me nem
pel di ba tang po hon... La lu ka mu ja di ku pu ku
pu... ter bang ke la ngit bi ru...

The second version of the song conditions the children as if they were talking to the butterfly face to face. The use of the word You, in terms of language, is in place of the first personal pronoun, butterfly.

Next, notice the change of the song in version 3, It version. The children are positioned as if they were telling about the third personal pronoun, butterfly.

METAMORPHOSIS KUPU-KUPU (Versi 3)

4/4

Do=C

By Tuti TAS

Soprano

Di a u lat ke cil... Tubuh nya unik dan mu-
ngil... Bila wak tu nya ti ba... Tubuh
nya bergan ti ru pa... Di a ke
cil... Di a mu ngil... Di
a mera yap be bas... di a lam lu
as... Ki ni di a ke pom pong me nem
pel di ba tang po hon... La lu di a ja di ku pu ku
pu... ter bang ke la ngit bi ru...

Version 3 conditions the children as if they were telling about the so-called creature, butterfly. In addition to learning about butterfly's life cycle beginning from a caterpillar, cocoon to butterfly, the children learn specific vocabulary and personal pronouns.

Based on the abovementioned explanation, children are eventually able to learn numerous things particularly Science and Language at one time with fun atmosphere. They can understand the process of butterfly's life cycle.

STEPS TO LEARN SCIENCE AND LANGUAGE BY MEANS OF "METAMORFOSA KUPU-KUPU" SONG

In particular, the content of the song is as follows:

Version 1:

I am a little caterpillar, my body is unique and tiny

When my time comes, my body metamorphoses

I am small, I am tiny

I crawl down free in the wild

Now, I am a cocoon, hanging on the tree trunk

Then I transform into a butterfly, fly away up into the blue sky

When the subject "I" is changed into "You", the children will automatically learn how to use personal pronoun. When the subject "I" is used, the children will sing pointing at themselves. Instead, when the subject "You" is used, they will stretch out their hand pointing at the little caterpillar as if they were talking to it. The change of the lyrics is completely as follows:

Version 2:

*You are a little caterpillar, your body is unique and tiny
When your time comes, your body metamorphoses
You are small, you are tiny
you crawl down free in the wild
Now, you are a cocoon, hanging on the tree trunk
Then you transform into a butterfly, fly away up into the blue sky*

When the children sing version 3, they are positioning as if they were telling others about the third personal pronoun “It” and automatically moving their hand pointing away as a sign of “little caterpillar” which is not around. The lyrics version 3 is completely as follows:

Version 3:

*It is a little caterpillar, its body is unique and tiny
When its time comes, its body metamorphoses
It is small, it is tiny
it crawl down free in the wild
Now, it is a cocoon, hanging on the tree trunk
Then it transform into a butterfly, fly away up into the blue sky*

Below are expressions that are possibly shown by the children as their understanding of the use of first person pronoun (song-version 1), second person pronoun (song-version 1), (song-version 2), and third person pronoun(song-version 3).,:



Version 1

Version 2

Version 3

(All pictures are design by Andi)

Steps to introduce knowledge about metamorphose of butterfly and the use of words I, You, and It by singing “Metamorfosa Kupu-Kupu” are as follows:

1. Sing the song version 1 repeatedly.
2. Have children sing together under the teacher’s lead repeatedly.
3. Ask what the children know about the process of butterfly’s life cycle.
4. Underline the butterfly’s life cycle.
5. Repeat the song (version 1).
6. Repeat the question about metamorphose of butterfly.
7. Teacher introduces “Metamorfosa Kupu-Kupu” Song version 2.
8. Teacher explains the use of the first and second personal pronouns.
9. Teacher ask students to sing “Metamorfosa Kupu-Kupu” song version 2 in pairs and dealing
10. Teacher introduces “Metamorfosa Kupu-Kupu” Song version 3.
11. Teacher asks students to sing “Metamorfosa Kupu-Kupu” Song version 3.
12. Teacher explains the use of the first, second and third personal pronouns.
13. Teacher has children sing “Metamorfosa Kupu-Kupu” Song version 1, 2, and 3 interchangeably.
14. Teacher has children sing “Metamorfosa Kupu-Kupu” Song in groups with different versions each.
15. Teacher has children make use of the first, second, and third personal pronouns as instructed.

Another finding are from a number of 24 master students who have been given experience to provide an understanding of science, 17 people who have become teachers expressed satisfaction in teaching science to students. They generally say by teaching science through songs, students understanding of the concept of science becomes more acceptable.. Even children are happy and cheerful while learning with song.

CONCLUSIONS

Singing the song of “Metamorfosa Kupu-Kupu” as one medium to learn Science and Language enables teachers to create a joyful learning. This song can motivate children to learn Science and Language further. The children will better understand the process of butterfly’s life cycle in a fun way. They learn to know particular vocabulary in relevance with the song and easily understand the grammatical use of personal pronouns of I, You, and It. Thus, children are able to learn lots of things at one time by means of song and this promotes a more joyful, practical and economical learning process.

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Middle School Students Views' on Socio-Scientific Issues: Global Warming Example

Murat GENÇ

Düzce University, Education Faculty,

Turkey

muratgenc@duzce.edu.tr

Tülin GENÇ

Ministry of National Education,

Toki Mehmet Akif Ersoy Middle School, Düzce

Turkey

tulinarinangenc@gmail.com

ABSTRACT

The purpose of this study is to investigate the views of middle school students about socio-scientific issues. The questionnaire was developed to reach the aim and was conducted with 32 students who were studying at the Toki Mehmet Akif Ersoy Middle School in 2016-2017 academic years. At the implementation of the research; students were shown a 10-minute animation about global warming. How global warming is revealed and how it emerges was explained in animation. The students were asked three open-ended of questions about global warming. For the analysis, frequency analysis was used, which is a content analysis method. The students' answers given to the questions were coded by the researcher. According to the results of the research, the majority of the students stated that global warming was dangerous. They stated that the most important cause of global warming is human behavior. The students stated that if something is not done, it will be bad for humanity. They predicted that the world would become unbearable twenty years later. This study is important for younger students to become conscious about the factors that threaten the human future like global warming. The formation of this consciousness will help students to move in for measures that need to be taken later.

Keywords: Global warming, socio-scientific issues, students' views, middle school.

INTRODUCTION

Science and society have, throughout history, influenced, and is still influencing each other (Topçu, 2015). New developments in this process have paved the way for advancements in technology and at the same time had different effects on society, which are positive or negative. Scientific advancements contributing to the development of technology and helping society progress have also resulted in the materialization of some risks and fueled debates on them, which have been introduced to science education as research topics in recent years. It is stated that science education needs to be renewed due to these developments (Abd-El-Khalick & Choi, 2006, Osborne & Dillon, 2008; Tytler, 2007). Issues that cause such controversies are referred to as socio-scientific issues, which are regarded as complicated, open-ended, mostly disputable and questionable (Sadler, 2004). Socio-scientific issues are defined as science-based topics on the fringe of scientific knowledge with local and general dimensions from social and political perspectives that require generating ideas and making decisions in a personal or social sense (Ratcliffe & Grace, 2003). Examples of socio-scientific issues include hydroelectric power plants, global warming, biotechnology applications, construction of nuclear power plants, armament, organ donation, cloning and genetically modified foods (Kolsto, 2006, Sadler, 2004).

Since socio-scientific issues support the cognitive, emotional and social development of individuals in terms of scientific issues concerning society at large, the inclusion of these issues in curricula is regarded as a sign of science literacy (Dawson & Venville, 2009). It is therefore obvious that socio-scientific issues play a significant role in decision making processes concerning social issues related to science in science literacy.

Studies indicate that socio-scientific issues contribute to the development of students' discussion and decision-making skills and provide opportunities for members of the new generation to improve their science literacy (Lee et al., 2006; Zeidler, 2001; Topçu, 2010). It is also stated that engaging in discussion and evaluation activities for socio-scientific issues during science education can contribute to the rational, sensory and social development of individuals (Topçu, 2008). Eastwood, Schlegel, and Kristin (2011) point out that curricula including socio-scientific issues can help students think logically and make rational decisions about real and complex problems. Sürmeli (2008) emphasizes that teachers should make time for the analysis and discussion of socio-scientific issues in the classroom environment in order to enable students to make effective decisions about them.

The fact that socio-scientific issues are being included in science curricula and discussed more and more today raises the importance of the very same issues. This situation entails the analysis and evaluation of studies on those

issues. Studies conducted in Turkey on socio-scientific issues are few and generally use university students as sample (Genç & Genç, 2017; Genç, 2016; Genç, 2015; İşbilir, Ertepinar & Çakıroğlu, 2012; Özdemir & Çobanoğlu, 2008; Soysal, 2012), and focus on only one topic among those issues (Demir & Düzleyen, 2012; Özdemir & Çobanoğlu, 2008; Uzunkol, 2012).

METHOD

This study was carried out using a screening model. The aim of screening models is to depict a past or present situation as it was/is (Karasar, 2008). The addressed event, situation, individual or object is defined and analyzed within its own conditions without attempting to modify or affect its underlying structure (Karasar, 2009: 77; Büyüköztürk et al., 2009; Cohen et al., 2007). The screening is the model of choice for this study for it aims to determine teacher candidates' views on socio-scientific issues.

STUDY SAMPLE

The sample consists of a total of 32 (17 female and 15 male) fifth-grade students at a public middle school (2016-2017).

Data Collection and Analysis

To collect data, participants were asked to watch a 10-minute animation about global warming and then asked three open-ended questions. Their answers to the questions were analyzed by content analysis.

Transcripts were collected from a graduate level virtual conference seminar course taught during summer session, 1998 at Northern Arizona University. Participants were in-service classroom teachers. A kindergarten through high school grade range of classroom assignments was represented by these teachers. Course work included outside class reading assignments of selected current research in the field, a final research paper, and active participation in the on-line discussion forum with focus questions by the instructor. The seminar offered was a Tools for Teachers course designed to promote reflective practice. Seven teachers from four different communities participated in this pilot course during the summer of 1998. Five of the participants were female and two were males. An interactional sociolinguistics (Schiffrin, 1995) approach was used to examine the texts of conversations. This approach draws upon concepts of culture, society, language, and the self. The meaning, structure, and use of language is socially and culturally relative (Gumperz, 1982). Meaning in dialog, like that of conversation, is socially constructed. Data was also examined for evidence of micro displays of sex class linked gender identities; displays that are commonly associated specifically with either gender. An example of this is the use of tag questions. Female participants, much more so than males, tend to use tag questions as a discourse strategy to invite response and inclusion or solidarity within the group. (Tannen, 1994) Simple quantitative analysis was done to determine total lines of text generated by each participant, amount of participation, total sums of questions, statements, as well as number of directed responses sent and received. Patterns of participation were mapped/graphed and correlated to the contexts of interactions. Style, register, and "voice" or tone analysis were also used on the data sets to try to discover the dynamics among the participants.

FINDINGS

Table 1 shows the distributions and frequencies of participants' answers to the question "What do you think about the present state of the world?"

Table 1. Distributions and frequencies of participants' answers to the question "What do you think about the present state of the world?"

What do you think about the present state of the world?		Frequency
Negative View	Bad	29
	Global warming	19
	Air is polluted	18
	Glaciers have melted/diminished	18
	Water and electricity are being wasted	15
	Fossil fuel use has increased	8
	The number of species has decreased	8
	Trees have been cut down	7
	Water is polluted	5

	The world is very dirty	5
	Greenhouse gas	4
	Habitats have declined	4
	The amount of trash has increased	4
	The ozone layer is depleting	3
	Nature has been destroyed	3
	Soil is polluted	2
	Living things except humans are suffering	2
	People are unconscious	2
	The world is becoming a desert	1
	Waste batteries are hazardous	1
	Private vehicle use has increased	1
Positive View	Good	4
	The number of technological devices has increased	2

The answers indicate that the majority of participants agree that the situation is negative.

Table 2 presents the distributions and frequencies of participants' answers to the question "What can be done to make our world a better place?"

Table 2. Distributions and frequencies of participants' answers to the question "What can be done to make our world a better place?"

What can be done to make our world a better place?	Frequency
We must use Public transport	31
We must save water	28
We must save electricity	27
Trees must be planted	23
Air pollution must be prevented	20
We must use bicycle	17
Environmental pollution must be prevented	11
Water pollution must be prevented	10
We must consume less	9
Solar panels/energy must be used	8
Wind power stations must be built	6
Deforestation must be prevented	5
Renewable energy sources must be used instead of fossil fuels	4
We must use energy saving bulbs	4
We must protect the green areas	4
Thermal insulation must be used	4
We must raise public awareness	3
Soil pollution must be prevented	2
We must use less perfume	2
We must recycle	1

Table 2 shows that participants' answers concentrate on recommendations for precautionary measures and remedies.

Table 3 demonstrates the distributions and frequencies of participants' answers to the question "How will the world be in 20 years' time?"

Table 3. Distributions and frequencies of participants' answers to the question "How will the world be in 20 years' time?"

How will the world be in 20 years' time?	Frequency
Waters will disappear	20
Very bad	18
Animals will go extinct	18
Glaciers will have melted	15
Green areas will disappear	13
The world will become arid	11
Irrelevant answer	9
Very good	8
The temperature will increase too much	8
Environment will be dirty	6
The number of buildings will increase	6
Human race may disappear	6
There will be no such place as world	5
Life will become difficult	5
Oxygen will run out	3
Soil will become poisonous	3
Fossil fuels will have run out	3
The world will be a desert	3
Food will run out	3
There will be floods	2
Life will decline	2
People will get sick because of dirty air	2
People will be unhappy	2
No answer	2
Wars will break out	2

Table 3 indicates that participants' answers portray a negative situation.

CONCLUSIONS

Playing a significant role in the establishment of connection between students' lives and science, socio-scientific issues constitute an inseparable part in science education as they make it easier for students to understand that scientific knowledge is human product (Pedretti, 1999). This study aimed to determine the views of pre-service teachers in Turkey on socio-scientific issues, in general, and on global warming, in particular.

Scientists try to solve socio-scientific issues and arrive at a conclusion by in-depth discussion. In this process, socio-scientific issues contribute to the development of students' decision making and problem solving skills (Day & Bryce, 2011; Sadler and Zeidler, 2004). In addition, socio-scientific issues improve teachers' ability to develop their students' critical thinking and rational judgement skills. According to Ratcliffe and Grace (2003), socio-scientific issues play an important role in education for science literacy, citizenship and sustainable development. Similarly, Eastwood et al. (2011) state that curricula including socio-scientific issues help students to reason and produce logical solutions to real and complex problems. According to Albe (2008), the inclusion of socio-scientific issues in the learning process improves students' motivation to engage in class activities and learning tasks. Öztuna-Kaplan and Çavuş (2016) state that helping students develop critical approaches to socio-scientific issues will provide them with confidence to participate in social decision-making processes and enable them to focus on the wellbeing of society in those processes. Sürmeli (2008) also emphasizes that making informed decisions about

socio-scientific issues is an important feature of science literacy and that assisting students in improving their decision-making and critical thinking skills regarding socio-scientific issues is one of the most important duties of science education. Nuangchalerms (2010) points out that addressing socio-scientific issues during education allows students to comprehend the core ideas and concepts of science by improving their high-level thinking, discussion and questioning skills.

Studies on socio-scientific issues in the literature are few and mostly use university students (İşbilir, Ertepinar & Çakıroğlu, 2012; Soysal, 2012; Turan, 2012) and teacher candidates (Genç, 2016; Cebesoy & Dönmez Şahin, 2013; Gürbüzöğlü Yalmanlı & Gözüm, 2016) as sample, and generally address only one topic among socio-scientific issues (Genç, 2016; Demir & Düzleyen, 2012; Özdemir & Çobanoğlu, 2008; Uzunkol, 2012).

Science education addressing socio-scientific issues aims to provide students with the ability to develop critical thinking, decision-making, analysis, synthesis and evaluation skills, and to comprehend the relationship among socio-scientific issues (Zeidler, 2001). Topçu (2008) also states that engaging in discussion and evaluation activities on socio-scientific issues in science education can contribute to the rational, sensory and social development of individuals. Sürmeli (2008) emphasizes the importance of addressing socio-scientific issues in the classroom environment to improve students' ability to make effective decisions about those issues.

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Mobile Learning Perception Scale: A Short Version for the Italian Context

Samuele ZAMINGA

*Department of Psychology, University of Turin, Italy
samuelzaminga@gmail.com*

Gloria GUIDETTI

*Department of Psychology, University of Turin, Italy
gloria.guidetti@unito.it
(The Corresponding Author)*

Rosa BADAGLIACCA

*Department of Psychology, University of Turin, Italy
rbadagliacca@libero.it*

Ilaria SOTTIMANO

*Department of Psychology, University of Turin, Italy
ilaria.sottimano@gmail.com*

Sara VIOTTI

*Department of Psychology, University of Turin, Italy
sara.viotti@gmail.com*

Daniela CONVERSO

*Department of Psychology, University of Turin, Italy
daniela.converso@unito.it*

ABSTRACT

Mobile-Learning techniques represent new horizons within the educational field that enhances more learner-centered pedagogical approach in front of the more typical educator-centered. Knowing teachers' perception and attitudes toward the use of M-Learning could facilitate a more successful implementation in the learning environment. The aim of this study is to propose a first validation of a short version of the Mobile-Learning Perception Scale (MLPS) for an Italian Context. To accomplish this, the items of the instrument were first back-translated from English into Italian. A survey among Italian primary, middle, and high school teachers ($n = 985$) was constructed in order to explore the psychometric properties of the Italian short version (13 items). Results of the EFA revealed, in accordance with our expectations, a three-dimensional structure underlying the 13 items. Specifically, the first factor extracted explained 44.04% of variance (Flexibility/Convenience). The second (Communication) and the third factor (Classroom Strategies/Techniques) explained 10.86% and 8.16% of the variance, respectively. All Cronbach's alphas were satisfactory ($\alpha > .70$). In addition, MLPS subscales were found to be significantly associated with a scale of school orientation to student empowerment and a scale of teacher frequency use of mobile device within school, providing evidence for both predictive and convergent validity. Overall, these results suggested the validity and the applicability of the instrument in an Italian educational context.

Key words: Learning, Mobile learning, Learning environment

INTRODUCTION

Today's students are considered "Digital Natives" whereas many today's teachers, who did not grow-up in the digital age, are considered "Digital Immigrants" (Prensky, 2001). As a consequence, the employment of mobile technologies in the educational field, with the aim of facilitating learning processes and improve students' readiness demands and challenges, has been only recently started (Al-Emran & Shaalan, 2015). One of the new research trend in this sector is Mobile Learning (M- Learning).

M-learning may be considered a new platform of distance learning which is the natural evolution of e-learning, giving to end-users, students and educators, the opportunity to learn more into short time frame. (Mostakhdemin-Hosseini, & Tuimala, 2005). It refers to "handled technologies enabling the learner to be on the move, providing anytime and anywhere access for learning" (Price, 2007; pp. 33-34). As a technology, it offers all the benefits of e-learning by allowing people to connect and interact using any other portable devices (e.g., notebook, smart phones, tablets, PDAs) to exchange information (Georgiev, Georgieva & Smirkarov, 2004). Among its many other benefits, M-learning is said to: 1) help learners improve literacy and numeracy skills; 2) encourage both independent and collaborative experiences; 3) help learners identify areas in which assistance and support are needed; 4) help to bridge the gap between mobile technology, Information and Communication Technology; 5) help remove some of the formality from the learning experience and encourage reluctant learners; 6) help learners

remain focused for longer periods; and 7) help raise students' self-esteem and self-confidence (Attewell, 2005). Another significant advantage in using M-Learning is making it easy for disabled students to participate in learning process (Beaton, 2006).

Using M-Learning techniques has the potential to enhance the typical educator-centred classroom into a more learner-centered classroom (Holzinger, Nischelwitzer, & Meisenberger, 2005; Keskin & Metkalf, 2011). Consistent with the Constructivist Learning Approach, teachers become facilitators of the learning process, encouraging students to co-operate through their active role in solving problems.

Most studies related to Mobile Learning in education, focus on development of Mobile Learning materials but little is known about the attitudes of teachers towards Mobile Learning (Al-Fahad, 2009). In addition, students stated that one of the main obstacle to use technology at school is represented by the rules against the use of their personal devices such as cell phones, smartphones, laptops and MP3 players (Project Tomorrow, 2010). As stated by Corbeil and Corbeil (2007), the presence of technological tools during class activities does not imply automatically an enhancement in the pedagogical approach and, subsequently in the learning outcomes. To overcome this gap, it should be determined how teachers perceive the use of technology within the educational context. Knowing teacher perceptions and attitudes toward the use of M-Learning could facilitate a more successful implementation in the learning environment. Moreover, considering that teaching is a high-stressful occupation *per se* (Converso et al. 2015; Guidetti, et al., 2015; Guidetti, et al., 2017; Viotti et al. 2017; Sottimano et al. 2017) often burdened by the school climate as well (Orsi et al., 2016), m-learning could represent another source of stress for teachers whose are not accustomed to use technology as a pedagogical tool. Knowing teachers' M-learning attitudes before the implementation could prevent resistance attitudes or negative outcomes on teachers' wellbeing.

The M-Learning Perception Scale (MLPS) (Uzunboylu & Ozdamli, 2011) represents to date, a promising measure of teachers' perceptions and readiness to successfully implement M-learning strategies. This tool is based upon a literature review of the construct as well as an analysis of feedback from teachers' responses, including their feelings, opinions and attitudes toward M-learning. In Uzunboylu & Ozdamli's perspective (2011), M-Learning is specifically focused on the use of both school purchased and student-owned mobile devices (for example, cell phones, Smartphones, iPods, iPads, Kindle) and wireless hand-held computers in the classroom (Uzunboylu & Ozdamli, 2011). The MLPS was constructed with the premise that a positive perception about M-learning will support student success and increased achievement (Roche, 2013).

Validity and reliability of the scale were proved by Uzunboylu & Ozdamli (2010) in a sample of Cyprian secondary school teachers. The questionnaire is composed of 26 items divided into three dimensions. The first dimension is "Aim-Mobile Technologies Fit" (A-MTS) which describes the fit between traditional and m-learning goals. "Appropriateness of Branches" (AB) is the second dimension, which describes the appropriateness of M-Learning materials with the subject taught. Finally, the last dimension, "Forms of M-learning Application and Tools' Sufficient Adequacy of Communication" (FMA and TSAC) describes how M-learning could be placed in the educational context and its role in enhancing communication in learning environments.

Moreover, from this study emerged that male teachers' perceptions of M-Learning technologies were comparatively higher than female teachers whereas no significant differences were found among different branches (Uzunboylu & Ozdamli, 2011). Within the Cyprian context and consistently to these results, Serin (2012) has not found, in a sample of prospective teachers, neither gender difference nor differences between departments. Another study was carried out by Roche (2013) involving a sample of U.S. K-12 teachers. This study aimed at evaluating the psychometric properties of a modified version of the MLPS for the U.S. context, and to determine whether there were significant associations between the teacher perceptions of M-learning and the teacher self-reported technology skill level (i.e., novice, beginner, competent, proficient or expert. Roche (2013) found a factorial structure slightly different from the original structure identified by the Authors (Uzunboylu & Ozdamli, 2011). Possible explanations for these results may be the cultural differences between samples (Turkey vs U.S.) and the item translation. The emerging factors were: 1) "Flexibility/Convenience" which underlies the possibility of m-learning technologies in facilitating the sharing of material; 2) "Communication" which underlies the facilitation of communication processes; 3) "Classroom/Strategies Techniques" which underlies how m-learning could improve the learning process.

Both the aforementioned studies seem to indicate that the instrument, whether in its original or modified form, measure similar constructs and that both samples of teachers showed above medium/neutral levels of perception toward m-learning.

In Italy, similarly to other European countries, educational policies are giving growing importance to the use of M-Learning in the teaching context, as it was documented from the REACH project. This project took place from

2011 and 2013 and aimed at showing teachers how to use mobile learning to increase students' participation and motivation in learning activities.

Despite this, to date, no studies have been carried out in an Italian context to evaluate teacher perceptions about impact of mobile technologies on educational environment or teacher attitudes toward M-Learning. Based on the modified version of the MLPS proposed by Roche (2013), we developed a shortened version consisting of 13 items. This could be an easily accessible tool from school leaders planning for targeted professional development in M-learning, or to assess perceptions pre- and post- implementation of a M-learning platform.

This study represents the first contribution to the development of the Italian version of the Mobile-Learning Perception Scale (MLPS). Specifically, it has the aim to examine the psychometric properties of a shortened version (13 items) in a sample of Italian teachers.

MATERIALS AND METHODS

Teachers from public school institutions of a region of Northern Italy were involved during the academic year 2016/2017. Presentation of the project, sharing of content, objectives and modalities of research implementation were firstly presented to School Leaders, and consequently to all the participants involved into the project.

The self-reported questionnaire was administered, anonymously, to a sample of 1220 teachers (expected questionnaires). The questionnaire was filled out individually during the working hours, while a researcher of the Department of Psychology (University of Turin), was available to the participants for clarification about the completion. Data were anonymously processed, and privacy protection was ensured in all research stages, in accordance with the country (Italy) legislation.

Participants

In total, 985 teachers filled out correctly the questionnaire and therefore they were considered valid for the present study. Of them, 407 (41.3%) were teachers of primary school, 199 (20.2%) of middle school, and 379 of secondary school (38.4%). Regarding gender, 80.4% (n=792) were females and 16.5% (n=163) were males. Participants were aged between 23 and 63 years with a mean age of 45.69 years (DS = 9.65). The job tenure of participant in the Italian public school system ranged from 1 to 43 years (M = 19.55; DS = 11.23). The majority had a permanent (74.9%) contract.

Instruments

The data were obtained by means of a self-report questionnaire including a socio-demographic section and the short revised version of Mobile-Learning Perception Scale (Uzunboyu & Ozdamli, 2011) proposed by Roche (2013) and translated into Italian.

Student Orientation (SO) was measured with a subscale from the Italian version of the School Organizational Health Questionnaire (SOHQ) (Guidetti, Converso & Viotti, 2015). The frequency of use of PC and other portable devices within the school context was measured through an *ad-hoc* measure.

The items from MLPS (Uzunboyu & Ozdamli, 2011; Roche, 2013) were translated from English into Italian using the back translation method (Brislin, 1986) and included in the present questionnaire. After the translation process, the scale consisted of 13 items adapted for an Italian teaching context (e.g. *M-Learning techniques allow discussion with no limit of time and space*). Response were given on a four-point Likert scale ranging from 1 = *Totally disagree* to 4 = *Totally agree*.

School's Student Orientation consisted of 4 items derived from the SOHQ (Guidetti et al., 2015) aimed at measuring school orientation to students' empowerment through a four-point Likert scale ranging from 1 = *Totally disagree* to 4 = *Totally agree* (e.g. *Students in this school are encouraged to experience success*).

Finally, frequency of use of PC and other portable devices within the school context were measured with a 4 items scale (e.g. *How frequently do you use tablet at school?* $\alpha=.69$) (Likert scale ranging from 1 = *Never*, to 3 = *Often*).

RESULTS

Data analysis were performed using SPSS Statistical Package version 24 in four steps: a) testing factorial validity of the MLPS through Exploratory Factor Analysis (EFA; Method of Estimation: GLS; Rotation method: Oblimin); b) item analysis (mean, standard deviation, skewness and kurtosis); c) assessment of score reliability of the MLPS sub-scales (Cronbach's alpha and alpha if item is deleted); d) Pearson's correlations between MLPS, and Student Orientation and frequency of use of portable devices in order to analyze convergent and predictive

validity. We hypothesize that MLPS positively correlates with higher level in school orientation in promoting student empowerment and to higher teachers' use in portable device at school.

Exploratory Factor Analysis (EFA)

The Kaiser-Meyer-Olkin measure ($KMO = .89$) and Bartlett's test of sphericity ($\chi^2=5016,12$; $df=78$; $p < .00$) indicate that the factor model is appropriate.

As expected, a three-dimensional factor-structure was found underlying the 13 items. Overall, the amount of variance explained is 63.06%. Table 1 presents the items loadings on the three factors. The first factor explained 44.04% of variance. It consisted of five items. Consistently to what emerged from the study of Roche (2013) we called this factor "Flexibility/Convenience".

Table 1: Factors, items loadings, variance explained of MLPS

Item	Factors		
	I	II	III
11) Provide access to content related materials	.85	-.13	-.074
10) Convenient to share with colleagues	.65	.06	-.03
12) Materials could be sent out in many ways	.65	.01	-.03
9) Remove traditional limitations of time/space	.56	.13	.04
13) Used as a classroom discussion tool	.46	.04	-.24
3) Provides convenience for class discussions	-.04	.81	-.06
4) Good method for interaction in my class	-.06	.75	-.08
2) Facilitate more efficacious student-student communication	-.02	.68	-.01
8) Facilitate teacher-student communication	.27	.42	-.14
1) Facilitate student-student communication	.19	.36	.06
6) Effective method in my content/classroom	-.06	.013	-.94
7) M-learning technologies can be used as a supplement in all classes on all subjects	.22	.002	-.60
5) Effective method in my content/classroom	.08	.14	-.55
% of Variance	44.04%	10.86%	8.16%

Note 1– Bold type indicate Value $\geq .40$.

On this dimension, factor loadings were always greater than .40 (the lowest value is on item 13 "used as a classroom discussion tool" with a value of .46). The second factor was called "Communication" with 10.86% of variance explained. It consisted of 5 items. The lowest factor loading was reached by item 1 "facilitate student-student communication" with a value of .36. The third factor, "Classroom Strategies/Techniques" explained the 8.16% of the variance. It consisted of three items and the lowest factor loading was reported by item 5 "Effective learning method in my content/classroom" with a value of -.55.

Internal consistency

For all items, the corrected item-total correlation achieved values equal or greater than $r = .50$. All values of skewness and kurtosis are comprised in the range -1.0 to $+1.0$, suggesting no violation of normal distribution (Table 2).

The internal consistency of the three sub-dimensions were satisfactory as the values of Cronbach's alpha reached respectively .79 for Flexibility/Convenience subscale and .82 for both Communication and Classroom/Strategies Techniques (Table 2). In addition, all items seem to give a relevant contribution to the subscales they belongs.

Table 2: Descriptive Statistics of MLPS Items.

	<i>M</i> (SD)	Corrected item-scale correlations	Skewness	Kurtosis	Alpha if item deleted
Subscale					
Item					
Flexibility/Convenience ($\alpha=.79$)					
11) Provide access to content related materials (Consentono di disporre immediatamente di materiale utile nel corso delle lezioni)	3.22 (.64)	.67	-.55	.70	.73
10) Convenient to share with colleagues (Facilitano la condivisione di conoscenze e informazioni tra colleghi)	3.02 (.67)	.63	-.42	.48	.74
12) Materials could be sent out in many ways (Mi consentono di condividere e inviare materiale scolastico ai miei studenti)	2.91 (.84)	.58	-.53	-.20	.75
9) Remove traditional limitations of time/space (Programmi come Messenger e Skype facilitano il confronto senza limiti spazio-temporali)	2.72 (.83)	.51	-.54	-.02	.78
13) Used as a classroom discussion tool (Possono essere uno strumento da utilizzare durante una discussione in classe)	2.93 (.80)	.54	-.39	-.29	.76
Communication ($\alpha=.82$)					
3) Provide convenience for class discussions (Le nuove tecnologie facilitano la creazione di un ambiente comunicativo)	2.51(.80)	.69	-.05	-.45	.77
4) Good method for interaction in my class (Possono facilitare la qualità delle relazioni all'interno della classe)	2.25 (.78)	.62	.30	-.20	.79
2) Facilitate more efficacious student-student communication (Gli studenti comunicano più efficacemente grazie alle nuove tecnologie)	2.56 (.85)	.64	.09	-.64	.78
8) Facilitate teacher-student communication (Facilitano la comunicazione tra professori e studenti)	2.57 (.78)	.55	-.12	-.35	.81
1) Facilitate student-student communication (Gli studenti possono comunicare più facilmente grazie alle nuove tecnologie)	3.02 (.79)	.61	-.58	.02	.79
Classroom strategies/Techniques ($\alpha=.82$)					
6) Effective method in my content/classroom (Aumentano la qualità delle lezioni all'interno della classe)	2.85 (.72)	.54	-.35	.07	.69
7) M-learning technologies can be used as a supplement in all classes on all subjects (Possono essere un importante supporto per tutte le classi e per tutte le materie di insegnamento)	3.07 (.69)	.67	-.50	.41	.74
5) Effective method in my content/classroom (Sono un affidabile strumento di apprendimento)	.274(.68)	.61	-.33	.14	.81

Correlations Among Subscales

The three subscales showed high positive correlations in the expected direction (see table 3). Even if the correlations indices with Student Orientation and frequency of use of portable devices were quite low (below .20), they were significant and in the expected direction. These findings suggest an adequate convergent validity with the measure of Student Orientation and predictive validity for the use of portable device at school.

Table 3: Pearson's correlations among subscales

	FXC	COM	CST	SO	Smartphone	Desktop PC	Laptop PC	Tablet
FXC	1	.56**	.59**	.12**	.17**	.11**	.13**	.12**
COM		1	.53**	.15**	.11**	.11**	.10**	.12**
CST			1	.15**	.08**	.06*	.18**	.10**
SO				1	-.05	-.02	.05	-.03
Smartphone					1	.09**	.13**	.18**
Personal Computer						1	.02	.19**
Notebook						.016	1	.08*
Tablet								1

** p <.001; * p<.05

CONCLUSIONS

The purpose of this study was to examine the psychometric properties of the Italian version of MLPS. The results obtained indicate that MLPS is an adequate tool for assessing teacher attitudes toward m-learning technologies in the Italian educational context. In line with previous studies (Uzunboyu & Ozdamli, 2011; Roche, 2013) our study shows the presence of a three-factor structure of the MLPS. Specifically, the factor structure emerged is in line to what has emerged in the U.S. context. Moreover, our study highlights the reliability of a short version of the instrument that could be a useful tool in the Italian context for measuring teacher m-learning perceptions. Knowing teachers' attitudes could improve future outcomes and a more informed process toward m-learning.

This study has some limitations. The most important are that the data collection was extended to only one Italian Region, and that participants were selected in a non-random way. Future study should adopt representative samples in order to provide stronger evidence for the adequacy of the psychometric proprieties of a short version of the MLPS for an Italian context.

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Model of Project-Based Learning on Cloud Computing Technology in Collaboration to Enhance Ict Literacy

Thiti JANTAKUN

*Department of Computer Education,
Faculty of Education
Roi Et Rajabhat University, Thailand
thiti100@gmail.com*

Thada JANTAKOON

*Department of Computer Science,
Faculty of Science and Technology
Rajabhat Maha Sarakham University, Thailand
thada@cs.rmu.ac.th*

ABSTRACT

This research aims to 1) design the model of project-based learning on cloud computing technology in collaboration to enhance ICT literacy, and 2) assess the model of project-based learning on cloud computing technology in collaboration to enhance ICT literacy. The research process was divided into 3 stages: 1) study and analyze the relevant documents and researches of project-based learning on cloud technology in collaboration to enhance ICT literacy, 2) design the model, and 3) assess the appropriateness of the model. The samples were 10 experts selected by purposive sampling. The data is analyzed by means and standardized deviations statistically. The research result shows that 1) the model of project-based learning on cloud computing technology in collaboration to enhance ICT literacy had consisted of 4 key components which were 1.1) Need Analysis, 1.2) Learning Process, 1.3) Authentic assessment, 1.4) Feedback and 2) the overall model evaluation scores were suitable ($\bar{X}=4.52$).

Keywords: Project-Based Learning, cloud computing technology, Collaboration, ICT literacy

INTRODUCTION

In today's information and communication technologies literacy (ICT literacy) is required in nearly all areas of work and ICT-related competencies are a necessary constitutive of employability (Autor, Levy, 2003). Because of the rapidly replacing technological environment, self-regulated and continuous life-long learning is a significant factor for successfully keeping pace with recent progress in the area of ICT (European Commission, 2008). The new skills needed for navigating education and the workplace in the current century have been labeled 21st century skills (Griffin, McGaw, & Care, 2012) and be featured as being critical for functioning effectively in society (Partnership for 21st Century Skills [P21], 2012). Skills that are listed in both frameworks include creativity, innovation, cross-cultural understanding, communication and collaboration. Collaborative learning activities have been distinguished. A relevant distinction for this study was made by Little (1990), who distinguished four types of collaboration based on the degree of interdependency and collegiality. The types of collaboration are: (1) storytelling and scanning, (2) aid and assistance, (3) sharing and (4) joint work. The first category, 'storytelling and scanning', refers to interactions that are characterized by low interdependency between teachers as well as low collective autonomy. Within the next categories, the interdependency and the collective autonomy increase, with the last category 'joint work' referring to the highest level of interdependency between teachers and a high level of collective autonomy (Little, 1990). Project based learning involved authentic learning environment (Eskrootchi & Oskrochi, 2010) that authorizes learners to construct knowledge in authentic context (Papanikolou & Boubouka, 2010). Such learning environment is highly believed to be the excellently approach that would promote learners to have full control all over their learning process. It requires students to complete certain tasks and exposed them to traverse possible ways to absolute the task (Kwok & Tan, 2004).

This research reports a collaboration project model on cloud technology involving student groups for enhance ICT literacy. The process of learning will run systemically step by step, acquiring up-to-date knowledge and it can be

applied for student in the real life which is efficient for teaching and also it is unlimited to disseminate the knowledge into others sciences. ICT literacy could be assigned as the ability to use digital technology, communications tools, access, manager, integration, and evaluate (The International ICT Literacy Panel, 2002). One interesting aspect of the challenge based learning model is cloud technology. This allows the user to access a fast internet connection without a requirement for hardware and an operating system (Bhaskar et al., 2009), (Mariana & Merwe, 2011) In addition, cloud computing can also be thought of as a device to support learning and teaching models that are relevant for the 21st century and challenge based learning. Therefore, the researcher had an idea to develop the model of project-based learning on cloud computing technology in collaboration to enhance ICT literacy within undergraduate students as a beneficial guideline for effective educational management in the future.

PURPOSE OF THE STUDY

2.1 To design the model of project-based learning on cloud technology in collaboration to enhance ICT literacy.

2.2.1 To evaluate the model of project-based learning on cloud technology in collaboration to enhance ICT literacy.

LITERATURE REVIEW

Project-based learning

Project-based learning is a response to the lack of contextualization and over-simplification and excessive abstraction of learning in schools. As Resnick (1987) notes "the traditional school often fails to prepare students for the type of learning, behaviour and attitude that is needed outside the school environment." Research that analyzes the learning process outside the educational context, show that the authenticity of a learning activity and its context are integral to knowledge and learning outcomes. Is in that sense where learning is understood as a situational concept (Brown, Collins & Duguid, 1989) and not timeless or out of context. According to LaFey et al. (1998), project-based learning is a modification of what was initially conceived as "contextual statement" a methodology that emphasized knowledge construction and problem solving by students in a given situation and that often happened during a long period of time. Thomas and MacGregor (2005) consider that collaborative development of projects in Higher Education presents an ideal opportunity to provide problem-solving situations present in the real world. Under the umbrella of a project-based learning wide types of tasks conducted in all kind s of training and in different educational levels are brought together: field studies, applied research, mechanics, and laboratory practices. These wide range of projects share a set of characteristics: (1) authenticity: learning involves a real problem and an effective solution has to be found; (2) complexity: the problems are complex tasks, and solution requires a significant investment of time; (3) centrality: the activity is significant and central to the curriculum of students, it is not complementary or a peripheral activity; (4) construction research: a goal-directed process, which involves asking students to discuss and build their knowledge and solve problems. The central activity of the project should involve knowledge processing and knowledge construction (Bereiter & Scardamalia, 2003). If project activities are not difficult for students or can be made by applying skills or information already known, the project is an exercise, not a project-based task; (5) use of tools: students use different tools and techniques to investigate, manage, plan, implement and report the project; (7) autonomy: the projects are not led by teachers or packaged in instructions, they incorporate a high degree of autonomy, choice, personal unsupervised work and greater responsibility.

Cloud Computing Technology

Cloud computing has become an increasingly popular phenomenon in every field. Cloud computing currently includes a series of hardware and software service provided via the Internet (Venters & Whitley, 2012). Since applications and user data would be stored remotely on cloud servers, users can seamlessly access cloud services and applications by using any digital device with an internet connection. In other words, cloud computing can enable users to access, process, share, and store information via the Internet from any location or device (Lin, Fu, Zhu, & Dasmalchi, 2009). In traditional IT systems, user productivity may be restricted since personal information was exclusive to specific applications, services or devices (Sang & Sung, 2013). However, these obstacles would be overcome by cloud computing since it can provide services to users seamlessly. Therefore, cloud services would make users more efficient, help facilitate collaboration with their peers, and give users seamless access to their information anytime and anywhere from any digital device (Marston, Li, Bandyopadhyay, Zhang, & Ghalsasi,

2011). However, the age of cloud computing saw other web applications such as SkyDrive, Evernote, DropBox, and Google Apps being developed. Different from traditional web pages and applications, such cloud computing applications offer SaaS to users who can use various digital devices to apply these services openly and freely. Users today are inundated with a myriad of web applications that provide friendly user interfaces and powerful functions in the cloud. Therefore, many instructors and students were already using these cloud applications in their daily lives (Lin & Jou, 2012). Most of both instructors and students would be more motivated in using these applications in an educational context since they already have the necessary technical skills (Dohn, 2009). Therefore, they would only need to learn how to apply these applications in supporting educational activities for their classes (Pretlow & Jayroe, 2010).

With these in mind, this study integrated Google web applications as a set of teaching and learning tools within a reflective learning environment. The applications used are briefly described in the following:

Google plus: This application is a free social networking service that can be accessed from various digital devices. Social networks between instructors and students can be established easily using Google plus. The social networks would allow users to share reflective thoughts, activities, and events effectively.

Google drive: This web-based office suite allows users to create and edit documents online while collaborating with other users in real-time. Google drive allows instructors and students to immediately write down, view, and reply to ideas conveyed through any connected PC or mobile device.

Google sites: This structured wiki- and webpage-creation application allows users to create dynamic web pages with their partners with the ease of writing a document. The use of Google sites can therefore assist instructors and students in consolidating and expressing their reflective thoughts.

Collaborative learning

Numerous studies have reported positive impacts of the use of collaborative technology in the educational context (Ishtaiwa & Abulibdeh, 2012; Parker & Chao, 2007; Ravid et al., 2008; Zorko, 2009). For instance, Zorko (2009) reported that the Wiki as a collaborative technology stimulated several collaborative behaviors, such as enhancing the opportunity of students' learning from each other and interacting with the instructor. More recently, Ishtaiwa and Abulibdeh (2012) found that collaborative technologies (asynchronous discussion board, blog and email) improved students' interaction with peers, instructor and content. The strengths of collaborative technology include its potentiality to provide an interesting and motivating learning environment that is suitable for the characteristics of today students, provide a practical and flexible platform for thinking, reflection and discussion that allows students to participate anytime and anywhere, and minimize obstacles of learning which include deficiency of communication skills, cultural limitations, or shyness (Ishtaiwa & Abulibdeh, 2012; Zorko, 2009).

In July 2009, Google officially introduced Google Docs as a free browser based productivity and web storage suite. In April 2012, Google Drive became the new home for Google Docs. The software includes word processing, spreadsheet, a presentation editor and a form designer. In addition, the site offers a space on the server for storing the created documents. Google has also made it possible for users to upload files of any type in the storage area as an effective tool of online file backup. The shift from PC/LAN to cloud computing allows users to access their files from any computer with Internet connection. This makes Google Docs a more flexible tool for content creation and sharing (Firth & Mesureur, 2010). However, there are some shortcomings of Google Docs as a collaborative technology. Most notably are (Firth & Mesureur, 2010):

Limited formatting ability: This shortcoming clearly appears during the conversion of files created in Microsoft Office into Google Docs. Microsoft documents lose many of their formatted elements when they are converted into Google Docs because Google Docs' limitation of font tools, converting complex charts and tables, and slide transitions and animations.

The simultaneous editing/syncing of shared documents. The application allows more than one user to work on a document at any given time. This in turn makes the document subject to the potential speed and accessibility issues that may lead to some update conflicts.

Text-based only: The Google Docs collaboration protocol can be used for collaborating on text documents only. The application does not support collaborating on graphics or other content.

Off-line support: Like other online collaboration technologies, Google Docs application currently does not support offline working which limits the opportunity of editing/sharing while traveling or in a place with no Internet connection.

ICT LITERACY

As a consequence of the large number of concepts related to values, attitudes, and knowledge of digital technology, a variety of explanations accompanying these concepts exists. Most scholars agree that operationalization's of ICT literacy has changed over time due to the advancement and changes in the availability of technology (Erstad, 2006). In the following, three widely used explanations of ICT literacy are provided to illustrate the comprehensiveness of these concepts. We are aware that this selection does by no means provide an exhaustive overview of the concept of ICT literacy; nevertheless, the three definitions presented here can be identified in a number of published papers and reoccur in existing small- and large-scale studies.

METHODOLOGY

This research was divided into 2 phases which are (1) The study that related to theories, research and experts' opinion, (2) Evaluation on the proposed model.

Phase 1: The study that related to theories, research, and experts opinion.

The study in this phase included the study of theories and research on the project-based learning, cloud computing technology, collaboration, and ICT literacy to be used as guidelines in determining learning processes and components of the model. The model will be designed after documentation review, and then the interview will be conducted to get an opinion towards the model from ten experts.

Phase 2: Evaluation on the proposed model.

After gathering all of information and modifying the model, ten computer education experts were selected to evaluate the model by using five scales model evaluation form. The expert selection criteria consisted of (1) the experts must have more than 5 years of experiences in the computer education field, (2) the experts must have a related work in computer education, and (3) the experts must have experiences in designing or teaching with undergraduate students.

RESULT

Stage 1: The model of project-based learning on cloud computing technology in collaboration to enhance ICT literacy is composed of 4 key components which are:

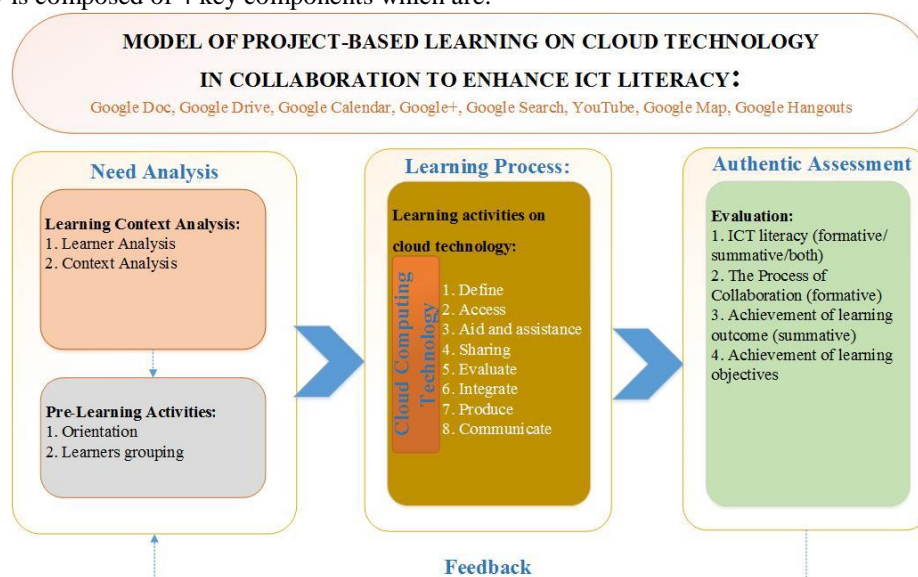


Figure 1. Model of project-based learning on cloud computing technology in collaboration to enhance ICT literacy

The learning activities consisted of four main components:

1) *Need Analysis:*

1.1) Learning context analysis

1.1.1) Learner analysis identify a set of learner characteristics shown to affect learning above and beyond general characteristics such as age, grade level, and topic being studied.

1.1.2) Context analysis of performance setting to know the environment in which our learners will be using their new skills

1.2) Pre-learning activities

1.2.1) Orientation

Teachers recommend courses, learning objectives, learning methods, learning activities, ways to send and verify assignments, communication channels and measurement and assessment procedures through cloud technology

1.2.2) Learner grouping

Students are divided into groups. Each group consists of five people. Group names are created, the roles of group members defined and a group leader and secretary nominated

2) *Learning Process:*

2.1) Learning activities on cloud technology

This step can be divided into eight phases:

2.1.1) Define: Understand and articulate the scope of an information problem in order to facilitate the electronic search for information.

2.1.2) Access: Collect and/or retrieve information in digital environments. Information sources might be web pages, databases, discussion groups, e-mail, or on-line descriptions of print media.

2.1.3) Aid and assistance: Asking questions or help.

2.1.4) Sharing: Exchanging and/or discussing information (knowledge), experiences, and ideas.

2.1.5) Evaluate: Judge whether information satisfies an information problem by determining authority, bias, timeliness, relevance, and other aspects of materials.

2.1.6) Integrate: Interpret and represent information, by using digital tools to synthesize, summarize, compare, and contrast information from multiple sources while.

2.1.7) Produce: Adapt, apply, design, or construct information in digital environments.

2.1.8) Communicate: Disseminate information tailored to a particular audience in an effective digital format

3) *Authentic assessment*

3.1) Evaluation

The evaluation of the proposed model can be classified into ICT literacy (formative/summative/Both), the process of collaboration (formative), Achievement of learning outcome (summative), and achievement of learning objectives.

4) *Feedback*

4.1) Feedback from the students and improving the model accordingly.

Stage 2: The result of appropriateness measurement of the model of project-based learning on cloud computing technology in collaboration to enhance ICT literacy.

Table 1: Experts' evaluation scores of the model of project-based learning on cloud computing technology in collaboration to enhance ICT literacy

Assessment Topics	\bar{X}	S.D.	Assessment Result
1. Objective of the Model	4.63	0.49	Highest
2. Uses of Concepts and Principle	4.60	0.49	Highest
3. Components of Model	4.46	0.50	High
4. Process of Learning	4.50	0.50	Highest
5. Tools Usage	4.45	0.51	High
The overall results	4.52	0.49	Highest

In Table 1, the research found that model of project-based learning on cloud computing technology in collaboration to enhance ICT literacy was evaluated at the highest level in Objective of the Model, Uses of Concepts and Principle, and Process of Learning. The Components of Model and Tools Usage were at the high level. The model of project-based learning on cloud computing technology in collaboration to enhance ICT literacy showed overall results at highest level (arithmetic mean=4.52, standard deviation = 0.49).

CONCLUSIONS

The model of project-based learning on cloud computing technology in collaboration to enhance ICT literacy consisted of need analysis, learning process, authentic assessment, and feedback. The results were in accordance to those of The International ICT Literacy Panel (2002). The overall model evaluation scores were suitable ($X = 4.52$).

Acknowledgement

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Model Situations for Usage of Creative Techniques While Listening to Modern Popular Music at School

Veronika ŠVONCOVÁ

Faculty of Education

University in Hradec Králové

Czech Republic

V.svoncova@seznam.cz

ABSTRACT

Modern popular music currently plays an important role in the teaching of music. Apart from vocal, instrumental and music and movement activities, listening tasks are one of the fundamental elements of music teaching in the classroom. Throughout their music course, pupils gain various pieces of knowledge about music, which they can later use during the tasks and activities listed above. Creative techniques in combination with listening activities use a set of motivational games together with musical knowledge. Motivational games with incorporated musical knowledge focus on developing the musical thinking of the pupils and on connecting it with various activities in the music classroom. Such games are particularly suitable for pupils of lower-secondary schools and art schools. In this paper, I present two model situations using creative techniques by means of motivational games with incorporated musical knowledge in connection with listening to popular music. I have verified both of these model situations in practice by means of specific research. The main objective of the research was to experimentally verify the effectiveness of the creative techniques in connection with listening to popular music in two parallel classes at a lower-secondary school. The technique of one experimental and one control group has been used.

INTRODUCTION

The education system of music classes in the Czech Republic (CR) includes both classical music (art-focused music) and contemporary popular music (entertainment-focused music). However, the degree of use of modern popular music in teaching practice varies. The situation in the CR has been improving, particularly since the 1990s. Since that time, the interest of teachers in these musical genres has increased, a number of theses on the use of modern popular music have been published and numerous conferences on this topic have taken place (Poledňák, 2002, p. 1-2).

MODEL SITUATIONS

A model situation is “the creation of functionally ideal techniques which respect given theoretical principles and match the practice. Such a model uses the essential features of the didactic practice chosen for solving the problem. At the same time, it does not prohibit the application of individual plans used for the specific teaching circumstances” (Herden, 1998, p. 39). The essence of a model situation is in its creation and verification in practice. The unconfined space of a model situation allows the teacher to focus on the musical portrait of an artist or a musical group, to deal with various musical styles or to compare different compositions, musical styles or periods. The model situations described below may make the teaching of modern popular music more interesting and varied. They have the potential to develop the musical thinking of the pupils and to inspire them to expand their musical activities.

Listening activities are one of the fundamental elements of music teaching in the classroom. Creative techniques in combination with listening activities use a set of motivational games using musical knowledge. The set of motivational games with incorporated musical knowledge includes the following: “Dominoes”, “A card pairs game”, “Risk!”, “3+1”, or “The Musicians Want to Go Home”. The motivational games with incorporated musical knowledge take the form of board and card games. They can be used for individual or group activities, or in connection with a chosen musical activity. The aim of this paper is not to describe motivational games using musical knowledge, but to propose model situations for listening to modern popular music in the classroom (Švoncová, 2016, p. 189 - 194).

SPECIFIC RESEARCH

The object of the specific research consisted of music class pupils attending two parallel classes at a lower-secondary school. The subject of the research was the effectiveness of creative techniques in connection with listening to modern popular music in a lower-secondary school.

The research method used was a didactic (forming) experiment. The experiment maps the changes brought into a traditional teaching environment through the use of creative techniques using a set of motivational games with musical knowledge. The chosen research method makes it possible to compare the results of the two tested parallel classes, to compare the creative techniques with traditional teaching techniques, and to assess the effectiveness of the creative techniques.

The main objective of the research is to experimentally verify the effectiveness of the creative techniques in connection with listening to popular music in two parallel classes at a lower-secondary school. The technique of one experimental and one control group is used.

The collection of materials and the analysis of the results of the specific research were carried out by means of quantitative analysis, semantic differential, a questionnaire, observation, a listening pretest and retest, charts and pivot tables.

The specific research was conducted over four months in two parallel classes of a lower-secondary school (the 9th year of the Czech education system). The experimental group consisted of sixteen pupils and listening to popular music was carried out in combination with the use of creative techniques. While listening to popular music, a set of motivational games with musical knowledge ("A card pairs", "Dominoes" and "3+1") was used as a part of the creative techniques. The control group consisted of nineteen students. The listening activities were conducted without the use of creative techniques. Some of the traditional processes were used instead, including gap-filling, linking and assigning. In both tested groups, listening to popular music was connected to one selected musical activity (vocal, instrumental or music and movement) or was conducted separately.

MODEL SITUATIONS IN PRACTISE

In this section, I present two model situations using creative techniques by means of motivational games with incorporated musical knowledge in connection with listening to popular music, which I have tested in practice during the conducted research.

COMPARISON OF TWO MUSICAL STYLES

The topic of this model lesson was the 1970's music around the world. The aim of the lesson was to compare the musical styles of reggae and rock music (reggae: Bob Marley - Buffalo Soldier, and rock: The Rolling Stones - Satisfaction). The lesson focused on the perception of the music of these two distinct genres. The pupils themselves were to define what impression the music made on them. The subsequent task was to answer questions regarding the typical features of both music genres.

In both the experimental and the control group, Jaroslav Herden's basic structure of classroom organisation was used for the purposes of the listening activities (Herden, 1998, p. 40 - 41). For the first instance of listening to the two samples of music, classroom discussion only was used. After listening for the first time, each of the pupils expressed his or her own impression of the music sample. In the subsequent analysis of the musical elements, the teacher's questions focused on the perception of the musical material and the characteristic features of the individual samples (regularity of the rhythm, predominance of different types of musical instruments, repetition, contrast, etc.). The analysis was followed by a synthesis of musical elements in the form of a second listening. The pupils received a research sheet and individually answered questions regarding the musical material of the given samples. The following charts show how the samples of reggae and rock were perceived by the pupils in both tested groups.

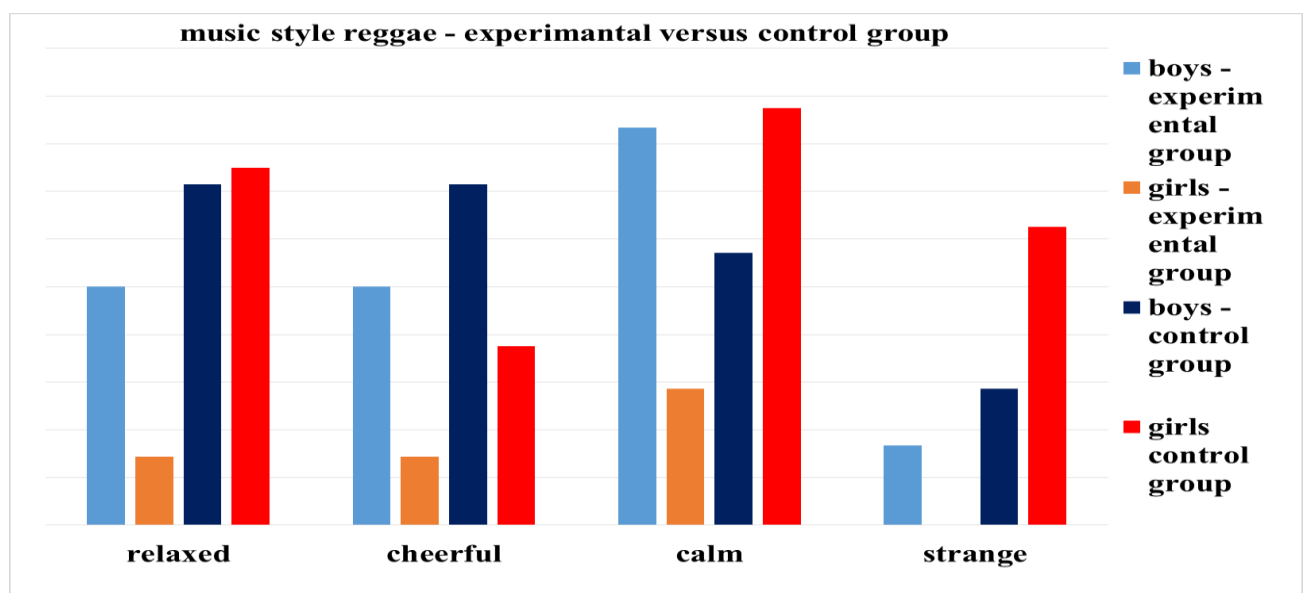


Figure 1: The charts clearly show that the predominant answer for both girls and boys in the experimental group while listening to reggae was *calm*, *cheerful* and *relaxed*. In the control group, the predominant answer for girls was *calm*, *relaxed* and *strange*. With boys, the answer was predominantly *relaxed*, *cheerful* and *calm*.

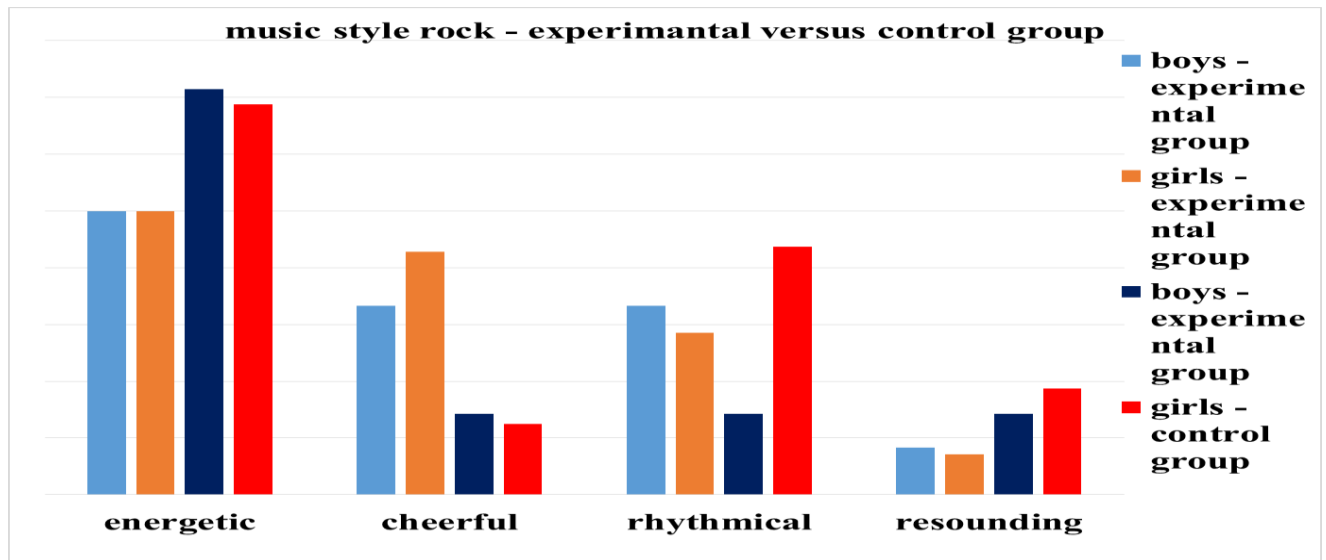


Figure 2: As for the rock sample, we can see that the girls and boys from the experimental group perceived it as *energetic*, *cheerful* and *rhythmical*. The girls and boys from the control group rated this sample as *energetic*, *rhythmical* and *resounding*.

The pivot tables below show the success rate of both groups in questions about the typical features of reggae and rock. From the set of motivational games with musical knowledge, the chosen game in the experimental group was “Dominoes”. In the control group, the method chosen was traditional gap-filling.

Tables 1, 2: The pivot tables above show that the experimental group, in which the creative technique using a motivational game with musical knowledge was applied, gained more points than the control group with both music samples.

PIVOT TABLE 1 - reggae							
EXPERIMENTAL GROUP	boys	girls	total	CONTROL GROUP	boys	girls	total
question 1	0.33	0.86	0.60	question 1	0.86	1.00	0.93
question 2	0.67	0.43	0.55	question 2	0.2	1.00	0.86
question 3	1.00	0.86	0.93	question 3	0.43	0.00	0.21
question 4	1.00	0.86	0.93	question 4	0.86	0.00	0.43
total	0.75	0.75	0.75%	total	0.71	0.50	0.61%

PIVOT TABLE 2 - rock							
EXPERIMENTAL GROUP	boys	girls	total	CONTROL GROUP	boys	girls	total
question 1	1.00	1.00	1.00	question 1	1.00	1.00	1.00
question 2	1.00	0.86	0.93	question 2	0.71	1.00	0.86
question 3	1.00	1.00	1.00	question 3	0.71	0.00	0.36
total	1.00	0.95	0.98%	total	0.81	0.67	0.74%

SEMANTIC DIFFERENTIAL

The second model lesson focused on the music of the 1980s around the world (music sample: Enya - Only time). The research technique chosen for this lesson was the *semantic differential* - in this technique, the pupils are asked to choose from a set of pre-selected polar adjectives and mark those that match their current perception of the music sample with a cross. This technique is typical for a research experiment and contains both scaling and association methods. The respondents are presented with pairs of opposing adjectives for each music sample (e.g. beautiful - ugly, strong - weak, fast - slow). According to their subjective feelings and thought processes, respondents mark the options on the scale that best match their current impression of the music sample with a

cross. In the research sheet, connotative meanings were divided into three basic categories: evaluation factor, strength factor and activity factor. The evaluation factor rated emotional attitude, the strength factor rated tension, relaxation and potential energy, and the activity factor rated dynamics and variability over time (Váňová, 2007, p. 171).

The evaluation of the semantic differential was carried out by calculating the average value of the results from each of the samples between the experimental and control group. The charts show the mean values. Each evaluated scale is expressed in a separate chart with each of the tested groups depicted in a different colour.

The selected sample charts below express how both groups perceived the individual factors.

THE EVALUATION FACTOR

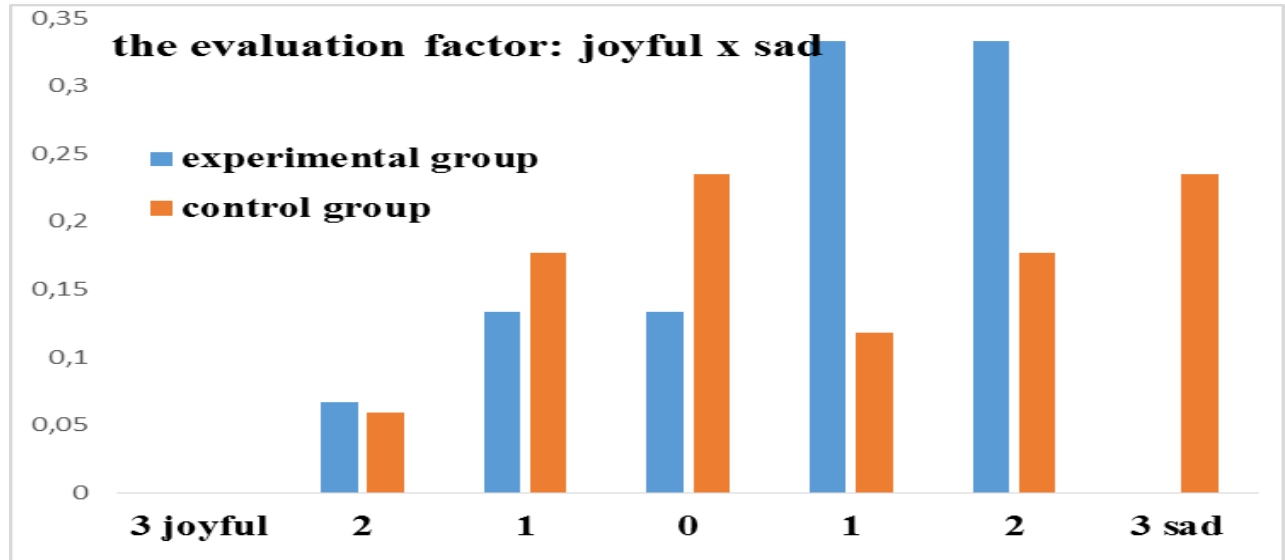


Figure 3

THE POWER FACTOR

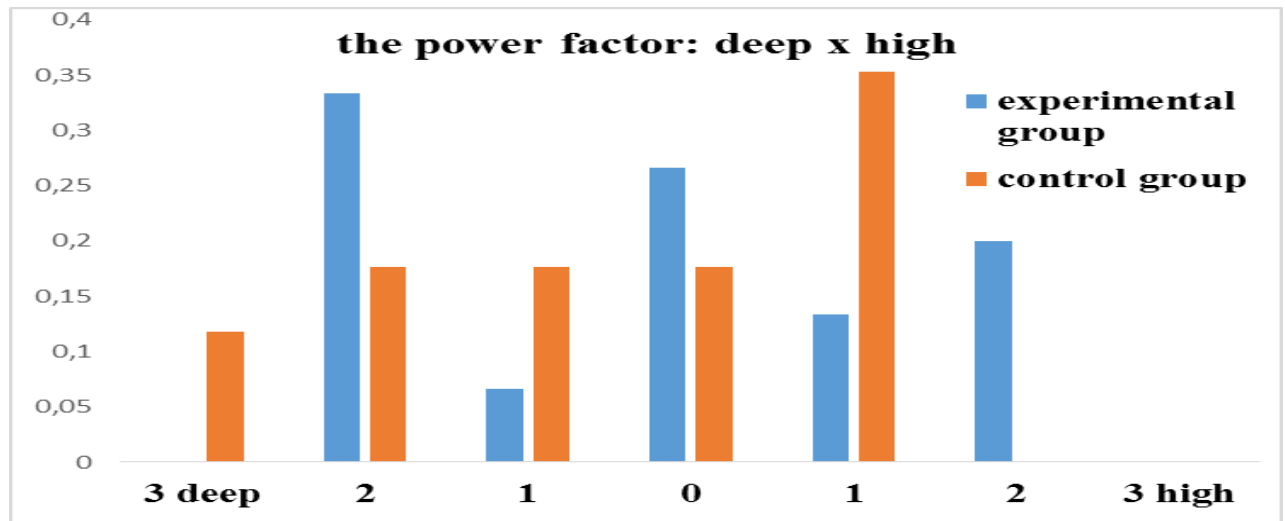


Figure 4

THE ACTIVITY FACTOR

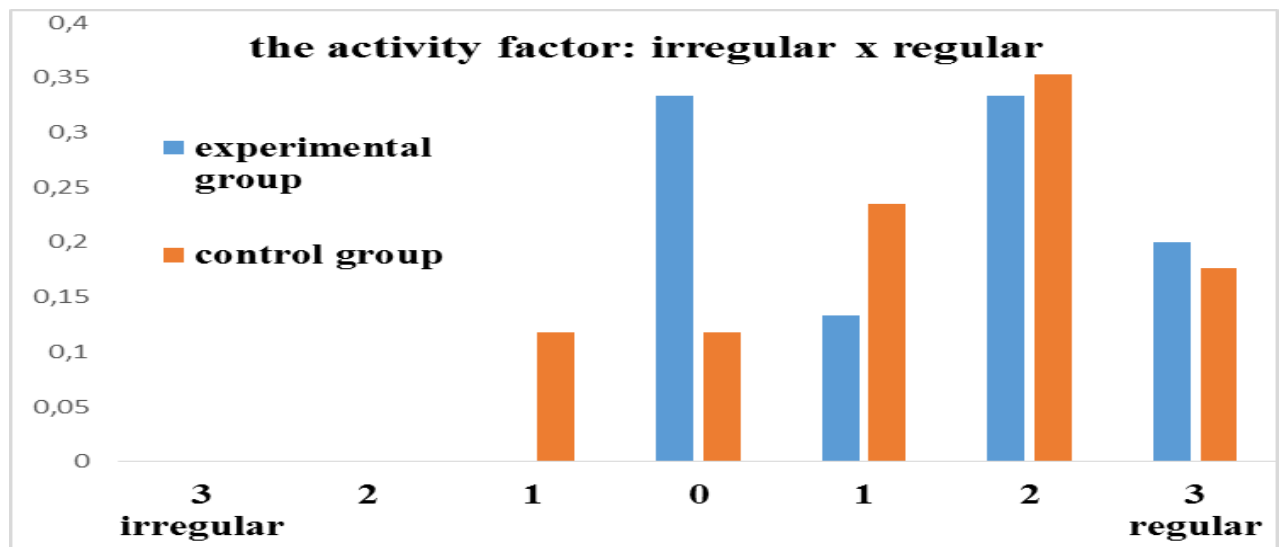


Figure 5

Figures 3, 4, 5: The selected charts show that the greatest variance in the responses scale between the pupils of both groups is in the evaluation factor and the strength factor. Conversely, the lowest variance is in the activity factor.

In the experimental group, the creative process chosen was the motivational game “3+1”. By contrast, the traditional method of gap-filling related to the lesson content was again used in the control group.

Table 3: The pivot table demonstrates, that the percentage success rate was once again higher in the experimental group, where the creative process consisting of a motivational game with musical knowledge was used.

PIVOT TABLE 3							
EXPERIMENTAL GROUP	boys	girls	total	CONTROL GROUP	boys	girls	total
question 1	0,83	1,00	0,92	question 1	0,25	0,56	0,40
question 2	0,33	0,78	0,56	question 2	0,25	0,44	0,35
question 3	0,17	0,89	0,53	question 3	1,00	0,67	0,83
question 4	1,00	1,00	1,00	question 4	0,00	0,44	0,22
total	0,58	0,92	0,75%	total	0,38	0,53	0,45%

ANAMNESTIC QUESTIONNAIRE

The questionnaire, in which a respondent answers the submitted questions in writing, is one of the most commonly used techniques in educational research. The main purpose of the questionnaire is to collect data about the respondents and their opinions and attitudes towards a given issue (Pelikán, 2011, p. 105). The questionnaire consists of parametric questions, the answers to which vary between two opposite poles. The anamnestic questionnaire focuses on the evaluation of a pupil’s musicality. It maps the effects of the extracurricular environment on the development of the pupil’s musicality. The questions in this questionnaire are divided into five topical groups: musical activities of individual family members, stimulation functions in the child’s musical development, social and integrational style of family education, extracurricular musical activities of the child and the amount of media input in the stimulation of the child’s musicality (Váňová, 2007, p. 58).

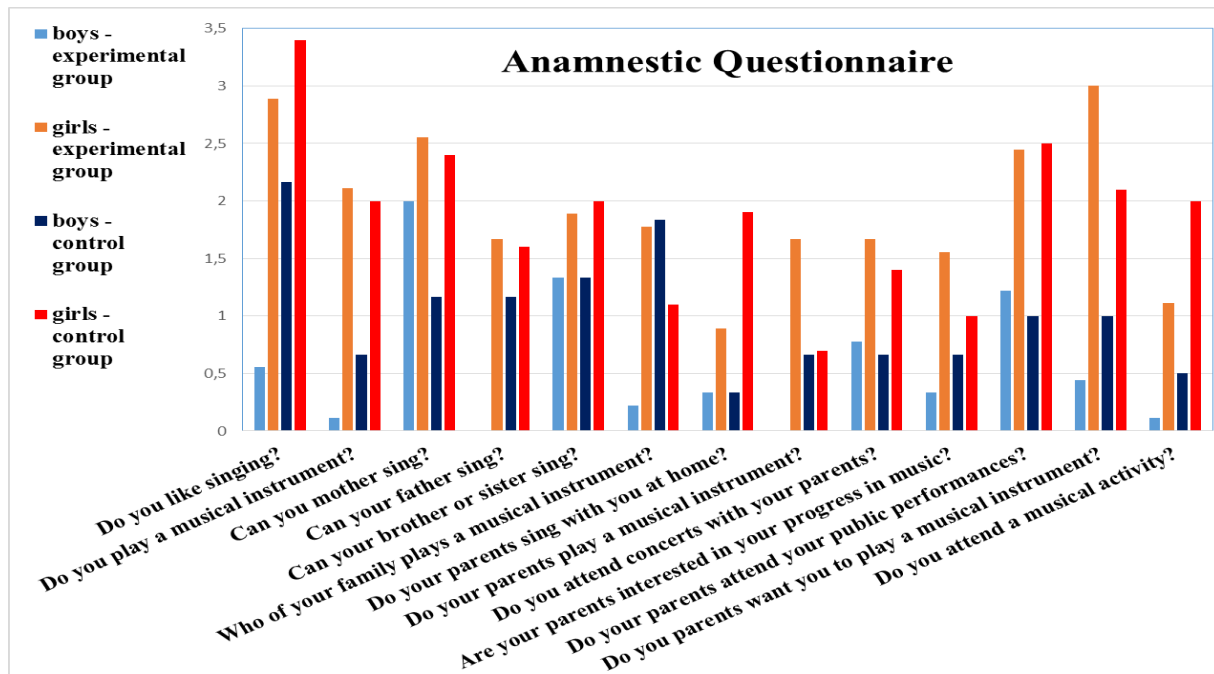


Figure 6: The anamnestic questionnaire chart shows that the highest rate of musical activity of family members is found among the girls in the experimental group. The rates of the stimulation function in the musical development of the child, the social and integrational style of family education and extracurricular musical activities are the highest with girls from both groups.

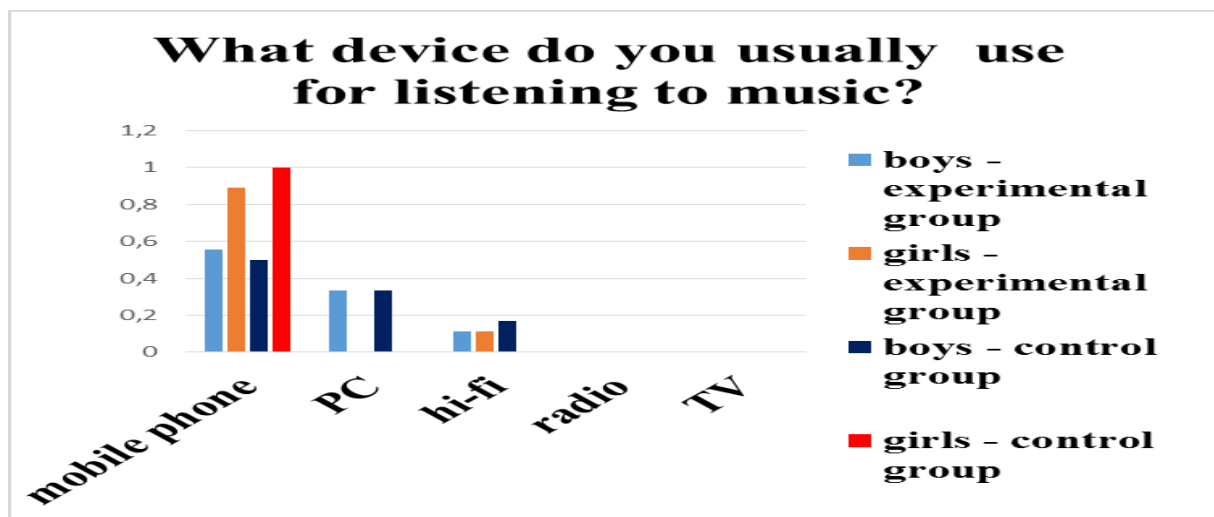


Figure 7: A chart showing the share of media in the stimulation of the children's musicality shows that all pupils in the experimental and control groups listen to music most often on their mobile phones.

RESULTS AND CONCLUSIONS

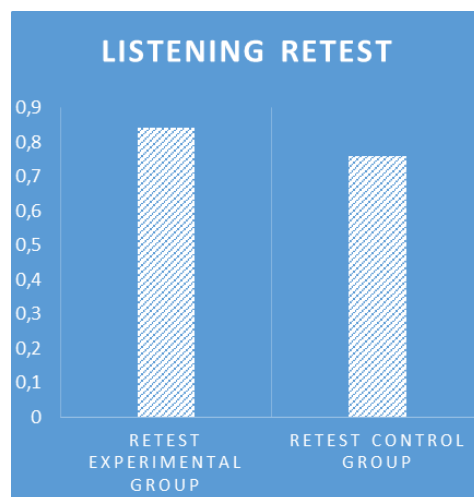


Figure 8: The final retest of the first phase of the research shows that the success rate was slightly higher in the experimental group.

The aim of this paper is to discuss model situations applying creative techniques through motivational games with musical knowledge in connection with listening to modern popular music in the classroom. Two specific model situations using creative techniques through motivational games with incorporated musical knowledge together with listening to modern popular music were verified in practice.

The results presented above suggest that the experimental group (in which the creative techniques using motivational games with musical knowledge were used) has better knowledge of modern popular music and is more capable of using this knowledge in other basic musical activities - vocal, instrumental and music and movement.

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Modelling Smartphone Security Behaviour of University Students

Mohamad Noorman MASREK

*Faculty of Information Management,
Universiti Teknologi MARA, Shah Alam Selangor*

Ismail SAMADI

*Faculty of Information Management,
University of Tehran, Iran*

Qamarul NAZRIN

*Faculty of Information Management,
Universiti Teknologi MARA, Shah Alam Selangor*

Atikah AZRY

*Faculty of Information Management,
Universiti Teknologi MARA, Shah Alam Selangor*

ABSTRACT

Despite the popularity and usefulness of Smartphone there are reasons to believe that users are concern about the privacy and security of their personal information due to physical theft, malicious applications and wireless network attackers. Against this background, a study was conducted with the aim of identifying factors that could influence Smartphone Security Behaviour. Seven factors, extracted from the literature were hypothesized to have a significant relationship with Smartphone Security Behaviour. Using the survey research methodology and a questionnaire, 346 respondents were engaged in the study. Using the SEM-PLS analysis, the results showed that media influence, perceived ease of use, perceive usefulness and self efficacy are significant predictor of Smartphone security behaviour. The study has significantly contributed to the body of knowledge and should capture the interest of both academics and management practice.

Keywords: Smartphone, security behaviour, technology use, university students

INTRODUCTION

Smartphones have changed many aspects of human life. Smartphone can be defined as “a mobile phone running a complete operating system in a manner similar to a traditional computer, which offer advanced computing abilities and connectivity options” (Alfawareh & Jusoh, 2014). Nowadays, smartphones have been used to replace desktop or mobile computers. Activities that are normally performed by desktop or laptop computers such as sharing information, sending and receiving emails, chatting, opening and editing documents, paying for products, browsing and shopping are now being replaced by Smartphone - a small device which can be kept inside a pocket of a trouser or a shirt (Alfawareh & Jusoh, 2014). Smartphones and other mobile devices, such as tablet PCs, are small, easy to carry and powerful in computational and storage capabilities (Uffen, Kaemmerer & Breitner, 2013).

Because of the advantages offered by smartphones, the population of smartphones users has been growing at an exponential rate. In Malaysia, the total users of smartphones was about 14.5 million in 2015, while in 2016, it was estimated to be around 16.4 million For 2017, the number of Smartphone users in Malaysia is estimated to reach 17.8 million (Statistica, 2017). A survey done in 2016 showed that Malaysians were spending more than three hours on their smartphones each day, using 323MB of data on average. According to Head & Ziolkowski (2012), while Smartphone use has been increasing in different economic and age sectors, university students have been targeted as one of the most important user groups of Smartphone services. In Malaysia, university students form a major chunk of Smartphones users (Qadri, Abubaka & Ibrahim, 2015). A research conducted by Mohtar et al. (2013) revealed that university students in Malaysia utilize smartphones for sharing notes, sharing exam results on Facebook, recording lectures and more.

Given the popularity and usefulness of smartphones, there are reasons to believe that privacy and security concerns might be preventing users from benefitting the full potential of their smartphones (Chin et al. 2012). The study by Chin et al. (2012) discovered that users are more worried about privacy on their smartphones than their laptop computers. In addition, it was also found that the respondents concerned about physical theft and data loss, malicious applications and wireless network attackers. According to Mylonas et al. (2011), smartphones are an interesting attack vector due to the huge amount and quality of personal and business data they store.

A literature review on smartphone security revealed very little literature available on the subject, especially concerning user behaviors relating to security practices (Simpson, 2016). This is partly due to the fact that

smartphones are still a relatively new technology and literature has yet to mature with the rapid advancement of smartphones (Mylonas et al., 2013; Simpson, 2016). Moreover, although an enormous amount of IS literature on security exists; the literature is mainly rooted in the domain of traditional computing devices (Simpson, 2016) and is not applicable to smartphones (Landman, 2010). Huang, Rau, & Salvendy (2010) also noted that very few studies have been conducted concentrating on the socio-cognitive behaviors that affect IS user security practices and security behaviors.

This study sought to gain a deeper understanding into the factors that influence smartphone user security practices and security behaviors. To achieve this objective, this study identified seven possible factors, namely, media influence, people influence, perceived ease of use, perceived probability, perceived severity, perceived usefulness and self efficacy. Based on these factors, this study formed and examined seven hypotheses which aimed to answer the following research questions: Do media influence, people influence, perceived ease of use, perceived probability, perceived severity, perceived usefulness and self efficacy jointly affect Smartphone security behavior?

THEORETICAL FRAMEWORK

Figure 1 presents the theoretical framework used in the study. Past studies on information systems have shown that innovation characteristics (i.e. technological characteristics), individual characteristics and environmental characteristics have significant bearings on individual usage behaviour of the technology (Trice & Treacy, 1998; Delone & Mclean 2003; Ali & Money, 2005; Jeyaraj *et al.* 2006; Masrek *et al.* 2008; Samadi & Masrek, 2015). On the basis of these study, we also argue that, technological characteristics (i.e. perceived ease of use, perceived usefulness, perceived probability and perceived severity), individual characteristics i.e. self efficacy and environmental characteristics i.e. media influence and people influence do have bearings and influence on smartphone security behaviour. The independent variables as shown in Figure 1 also have been examined by previous studies in the context of Smartphone (Tu & Yuan, 2012; Uffen, Kaemmerer & Breitner, 2013; Esmaeili, 2014; Simpson, 2016; Das & Khan, 2016).

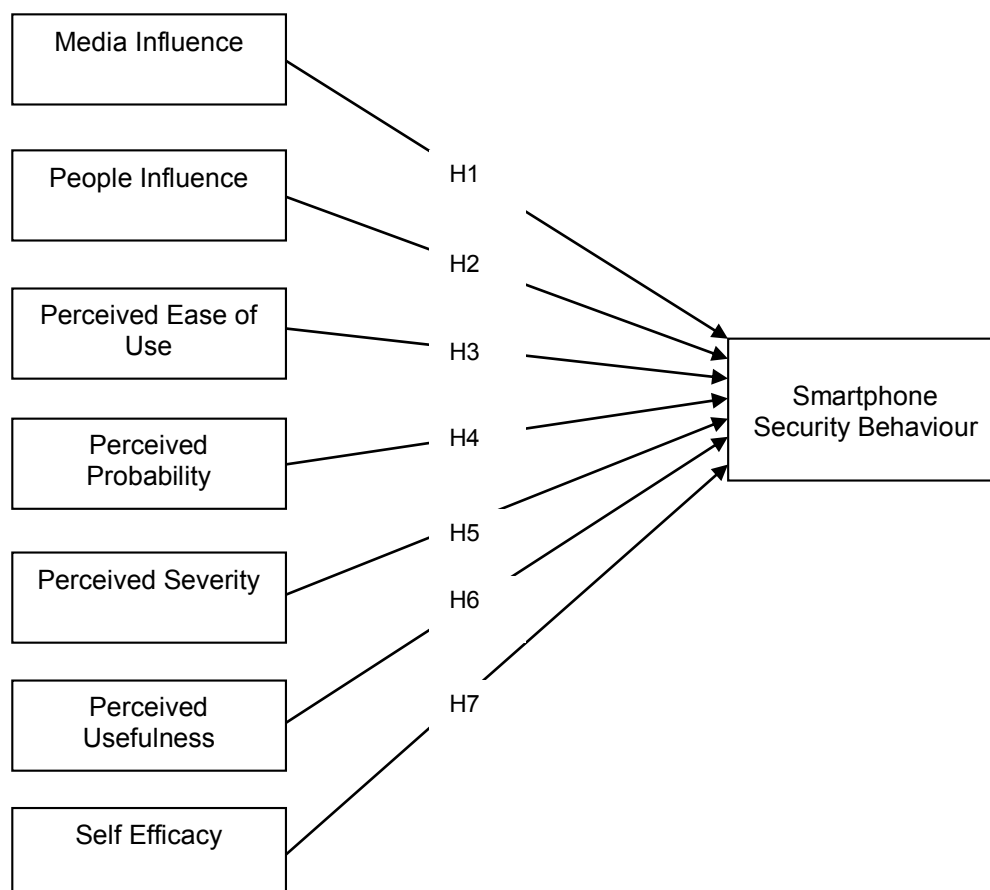


Figure 1. Theoretical Framework

Table 1: Operational definitions of constructs and research hypotheses

Construct	Operational Definition	Hypothesis
Smartphone Security Behaviour	The security conscious behaviors and actions that users demonstrate/conduct while using their smartphone	Not applicable
Media Influence	Support, encouragement or pressure by the mass media to use security technology in the Smartphone	H1: Media influence has a positive effect on of smart-phone security behaviour
People Influence	Support, encouragement or pressure by other people to use security technology in the Smartphone	H2: People Influence has a positive effect on of smart-phone security behaviour
Perceived Ease of Use	The degree to which a person believes that using a security technology in their Smartphone would be free from effort	H3: Perceived ease of use has a positive effect on of smart-phone security behaviour
Perceived Probability	The user realizes the probability that there is a security breach or risk on their Smartphone.	H4: Perceived probability has a positive effect on of smart-phone security behaviour
Perceived Severity	The extent to which an individual perceives that negative consequences caused by loss and theft of smartphone are severe.	H5: Perceived severity has a positive effect on of smart-phone security behaviour
Perceived Uefulness	The degree to which a person believes that using a security technology in their Smartphone would enhance his or her job performance	H6: Perceived usefulness has a positive effect on of smart-phone security behaviour
Self Efficacy	A belief in one's capability to protect information in the smartphone from unauthorized disclosure, modification, loss, destruction, and lack of availability".	H7: Self efficacy has a positive effect on of smart-phone security behaviour

RESEARCH METHOD

According to Egelman & Peer (2015), when studying human behavior, researchers across many different fields will normally use scales as proxies for observation. The authors further pointed out that scales are effective when behavioral or observational experiments are either too expensive, complex, or simply not possible. To this effect, this study also used scale for measuring all the constructs in the framework. The scale was developed by adapting the scales developed and used in past studied. The adaptation of the scale was done through pre-test involving several experts and prospective respondents. Based on their feedbacks and comments, a revision was made to the scales. Subsequently, a pilot test was executed involving 30 students and the reliability analysis was done based on Cronbach's alpha scores. The results showed that the scales were acceptably reliable as the score of the Cronbach's alpha for each construct surpassed 0.6. The questionnaire was then distributed to targeted respondents. The population of the study was students of Universiti Teknologi MARA Puncak Alam Selangor. A total of 450 questionnaire was distributed and after the data collection period was over, 346 usable questionnaire was returned. SmartPLS Version 3.0 was used to analyze the data (Ringle *et al.*, 2015).

FINDINGS

Assessment of Common Method Bias

As this study used single source of data i.e. one respondent answering all questions in the questions, there is a need to assess common method bias. This was done through Harman's single factor test. All items were constrained to one factor and the results of the analysis showed that the total variance explained was 25.68%, less than the recommended value of not more than 50.0%. The results suggest that the questionnaire used in this study was free from the problem of common method bias.

Profiles of Respondents

Table 2 depicts the profiles of the respondents. In terms of gender, female respondents (73.7%) outnumbered male respondents (26.3%). The majority of the respondents (50%) reported to be aged between 21 and 23 years old while the minority indicated to be aged between 27 and above (7.8%). Most of the respondents reported as pursuing Bachelor's degree (77.2%). The respondents enrolled in the Faculty of Business Management had the highest number of participation (39.6%).

Table 2: Profiles of Respondents

		Frequency	Percent
Gender	Male	91	26.3
	Female	255	73.7
Age	Below 20	57	16.5
	21 - 23	173	50.0
	24 - 26	89	25.7
	27 and above	27	7.8
Program	Diploma	15	4.3
	Degree	267	77.2
	Master	53	15.3
	Others	11	3.2
Faculty	Faculty of Architecture, Planning And Surveying	23	6.6
	Faculty of Art And Design	17	4.9
	Faculty of Business Management	137	39.6
	Faculty of Education	36	10.4
	Faculty of Health Science	37	10.7
	Faculty of Hotel And Tourism Management	16	4.6
	Faculty of Pharmacy	16	4.6
	Faculty of Accountancy	64	18.5

4.3 Measurement Model

To address the validity and reliability requirements of the scales, the assessment of the measurement model was done. Figure 2 illustrates the SmartPLS output of the measurement model assessment. The corresponding factor loadings for each item as well as the Cronbach's alpha, the composite reliability and the Average Variance Extracted for each construct are shown in Table 3. The results suggest that the scales used are highly reliable because the factor loading for every items surpassed 0.7 requirements; the Cronbach's Alpha for each construct surpassed 0.7 requirement; the composite reliability exceeded the 0.7 requirement; and the Average Variance Extracted also exceeded the 0.5 requirement (Hair *et al.*, 2011).

Table 3: Cronbach's Alpha, Composite Reliability & Average Variance Extracted

			Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Media Influence (MEI)	MEI2	0.771	0.893	0.921	0.7
	MEI3	0.825			
	MEI4	0.858			
	MEI5	0.875			
	MEI6	0.851			
People Influence (PEI)	PEI4	0.797	0.88	0.912	0.675
	PEI5	0.864			
	PEI6	0.836			
	PEI8	0.803			
	PEI9	0.806			
Perceived Ease of Use (PEU)	PEU3	0.909	0.84	0.904	0.76
	PEU4	0.919			
	PEU5	0.779			
Perceived Probability	PEP3	0.822	0.873	0.909	0.715

(PEP)	PEP4	0.899	0.94	0.954	0.806
	PEP5	0.801			
	PEP6	0.857			
Perceived Severity (PES)	PES2	0.855	0.861	0.897	0.637
	PES3	0.891			
	PES4	0.917			
	PES5	0.904			
	PES6	0.921			
Perceived Usefulness (PUS)	PUS1	0.740	0.862	0.893	0.627
	PUS2	0.713			
	PUS3	0.824			
	PUS4	0.872			
	PUS5	0.832			
Self Efficacy (SEY)	SEY1	0.704	0.79	0.88	0.714
	SEY2	0.702			
	SEY3	0.890			
	SEY4	0.899			
	SEY5	0.739			
Security Behaviour (SEB)	SEB4	0.894	0.79	0.88	0.714
	SEB5	0.929			
	SEB6	0.690			

Another aspect of validity that needs assessment is discriminant validity, defined as the extent to which a construct is truly distinct from other constructs (Hair *et al.*, 2010). According to Hair *et al.*, (2010) the best approach to assessing the discriminant validity is to compare the square root of each construct AVE to its correlation with other variables. This approach requires that the value of the square root of each construct AVE should be higher than the correlation values among constructs. If this requirement is met, discriminant validity can be assumed. This study also used this approach for assessing the discriminant validity. Table 2 shows that the square root of each construct AVE is higher than the correlation with other variables. Given these results, a convergent validity and discriminant validity of the instrument can be assumed.

Table 4: Discriminant Validity

	MEI	PEI	PEU	PEP	PES	PUS	SEB	SEY
MEI	0.837							
PEI	0.523	0.821						
PEU	0.284	0.35	0.872					
PEP	0.222	0.217	0.256	0.846				
PES	0.250	0.268	0.318	0.375	0.898			
PUS	0.389	0.282	0.558	0.286	0.479	0.798		
SEB	0.341	0.32	0.549	0.072	0.232	0.507	0.845	
SEY	0.403	0.391	0.521	0.147	0.377	0.494	0.445	0.792

Structural Model

Using a bootstrapping procedure, the SmartPLS output of the structural model was produced as shown in Figure 2. The guideline used in interpreting the results are accept the hypothesis when $p < 0.01$ ($t > 1.645$) or $p < 0.05$ ($t > 1.96$) or $p < 0.001$ ($t > 2.58$). The results clearly showed that H1, H3, H4, H6 and H7 are accepted while H2 and H5 are not accepted. For a substantial model, Cohen (1988) suggests that R^2 should be about 0.35 or greater, while Falk & Miller (1992) recommended 0.10 or above. In this study the R^2 is 0.405, indicating that the estimated model is substantial.

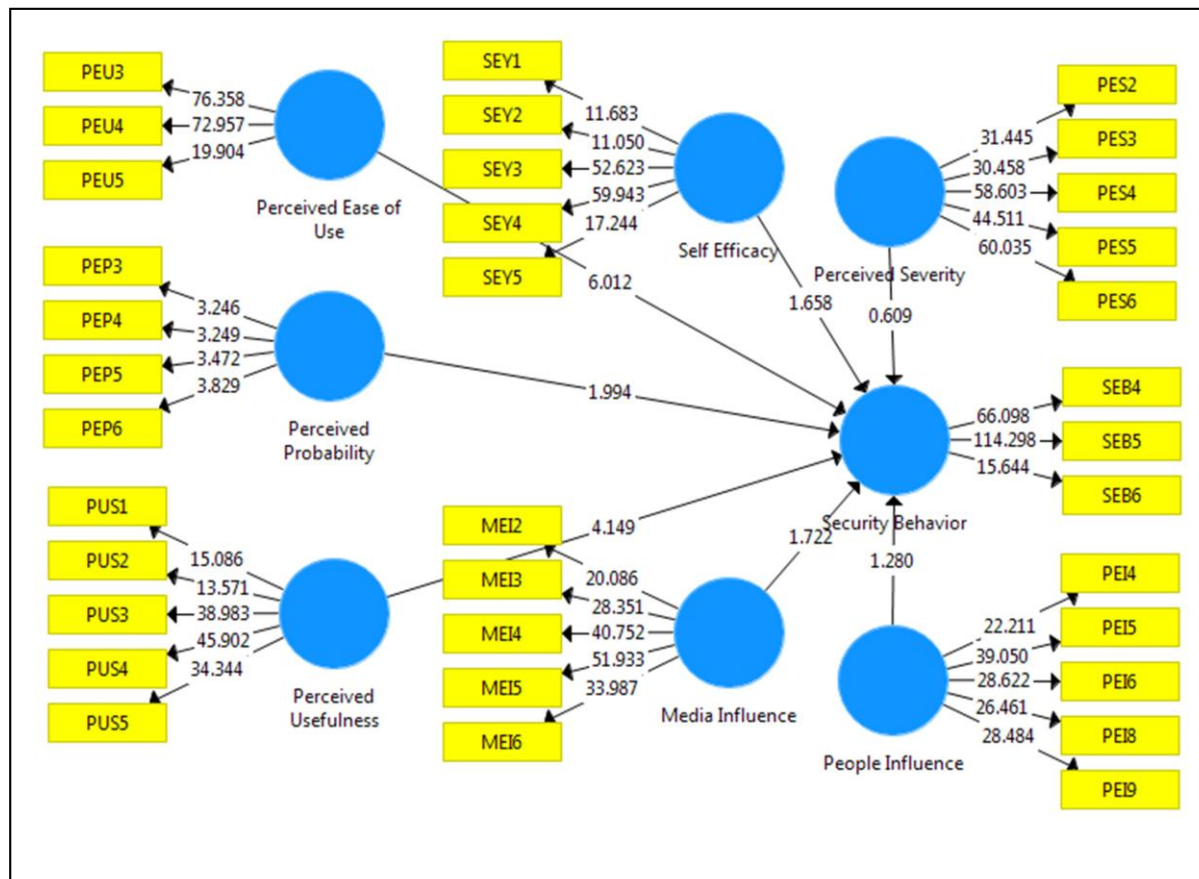


Figure 2. SmartPLS Output of the Structural Model

Table 5: Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	Hypothesis
H1: MEI → SEB	0.102	0.100	0.059	1.722*	Supported
H2: PEI → SEB	0.072	0.069	0.056	1.280	Rejected
H3: PEU → SEB	0.341	0.335	0.057	6.012***	Supported
H4: PEP → SEB	-0.130	-0.112	0.065	1.994*	Rejected
H5: PES → SEB	-0.036	-0.04	0.058	0.609	Rejected
H6: PUS → SEB	0.261	0.258	0.063	4.149***	Supported
H7: SEY → SEB	0.102	0.11	0.062	1.658*	Supported

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Predictive Relevance and Effect Size

In analyzing the predictive relevance, the blindfolding procedure was executed using omission distance $D = 7$ as suggested by Hair et al. (2012). According to Hair et al. (2014), the calculation of Q^2 value is based on the cross-validated redundancy approach that fits the PLS-SEM analysis perfectly. The results showed that the Q^2 value is 0.267, which is greater than zero, suggesting that the model in this study has predictive relevance for all its endogenous constructs.

Effect size refers to whether the latent independent variable has a considerable effect on the dependent variable. Using the formula $f^2 = R^2 / (1 - R^2)$ by Cohen (1988), the effect size is computed. As exhibited in Table 6, the results showed that the effect is either none or small, based on the value of f^2 , where 0.35 or above is considered

large effect, between 0.15 and 0.349 is consider moderate effect while 0.03 or less is considered small effect (Cohen, 1988).

Table 6. Assessment of effect size

Model	Variables Included	Variables Excluded	R Square	Effect size (f^2)	Interpretation
1	PEI, PEU, PEP, PES, PUS, SEY	MEI	0.398	0.0118	None
2	MEI, PEI, PEP, PES, PUS, SEY	PEU	0.338	0.1126	Small
3	MEI, PEI, PEU, PES, PUS, SEY	PEP	0.391	0.0235	Small
4	MEI, PEI, PEU, PES, PEP, SEY	PUS	0.368	0.0622	Small
5	MEI, PEI, PEU, PES, PEP, PUS	SEY	0.399	0.0101	None

DISCUSSION

The aim of this study is identify factors that could influence smartphone security behaviour. The results of the literature review identified seven factors which are media influence, people influence, perceived ease of use, perceived probability, perceived severity, perceived usefulness and self efficacy. These factors were tested using the data obtained from a field survey involving 346 respondents. Using the PLS-SEM analysis, the effect of these factors on Smartphone security behavior was examined.

The first hypothesis, H1, examined the effect of media influence on smartphone security behavior. The results showed a significant relationship does exist ($\beta = 0.10$, $p < 0.05$). The higher is the exposure to the media campaigning on security, the higher is the likelihood of the user to practice smartphone security. This finding falls in line with that of Ng & Rahim (2005). Mass media has been well acknowledged as the “change agent” or as a “reinforcing agent”, that is, media may function in such a way as to change knowledge, attitudes and behavior” (Robertson & Wortzel, 1978). It is because of this reason, as shown in the findings, a positive and significant relationship exists between media influence and Smartphone security behaviour.

The second hypothesis, H2, investigated the relationship between people influence and Smartphone security behaviour. People influence, termed as social norm by Ajzen (1991) refers to “an individual’s perception that most people who are important to her think she should (or should not) perform a particular behaviour”. Contrary to our expectation, this study did not find any relationship between people influence and Smartphone security behaviour. However, our finding is consistent to that of Das et al. (2015). Their study concluded that the effect of people influence on the likelihood of adopting a security feature “varies based on the observability of the feature”. According to Herley (2009), the use of security features may be uniquely affected by people influence given that security feature usage is often invisible, rarely communicated, and generally undesired.

Majority of the research using the Technology Acceptance Model (TAM) showed a direct effect of perceived ease of use on actual use (Schepers & Wetzels, 2007). In the context of individual security practices, studies by Shropshire, Warkentin & Sharma (2015) and Uffen, Kaemmerer & Breitner (2013) showed that perceived ease of use has a significant relationship with intention to use Smartphone security features. However, the results of this study showed that perceived ease of use is a significant predictor of Smartphone security behavior ($\beta = 0.341$, $p < 0.05$). The finding suggests that when security features of the Smartphone, either software or hardware related, are easy to use, then likelihood of the users to adopt and practice information security will be high.

The relationship between perceived probability and Smartphone security behavior is the fourth hypothesis tested in this study (H4). The results showed that perceived probability has a negative significant effect on Smartphone security behavior ($\beta = -0.130$, $p < 0.05$). Hence, H4 is not supported in the context of this research setting. The possible explanation is the reciprocal interdependence between satisfaction and use in the Information Systems Success Model (Delone & Mclean, 1992). While satisfaction influences use behavior, it is also influenced by the use behavior itself. In our case, it seems that those who highly practiced Smartphone security, became more doubtful of the probability that there would a security breach or risk on their Smartphone.

Tu & Yuan (2012) stated that “perceived severity of threat will lead users to behave in a more cautious manner if their perceptions of the damage or danger increase”. In contrast, when the user perceives that the severity of the threat has weakened, he or she will behave in a less cautious manner (Tu & Yuan 2012). In this study, the relationship between perceived severity and Smartphone security behaviour was found to be insignificant, thus H5 is rejected. One possible explanation is that the respondents of this study were students and the use of cheap Smartphone is very likely. According to Tu & Yuan (2012). People using cheap cell phones normally feel insignificant severity if their cell phones are lost or stolen.

In the domain of Smartphone security behaviour studies, Ng & Rahim (2005) and Uffen, Kaemmerer & Breitner (2013) found that perceived usefulness is a significant predictor of Smartphone security behaviour. However, in other context, past studies have also demonstrated that perceived usefulness was a significant predictor of use behaviour (Kim, Mannino & Nieschwietz, 2009; Anandarajan *et al.*, 2010; Godoe & Johansen 2012). To that effect this study developed the sixth hypothesis (H7), and the findings indicate that this hypothesis is supported ($\beta = 0.261$, $p < 0.05$).

The seventh hypothesis (H7) tested in the study is between self efficacy and Smartphone security behaviour. Consistent with our expectation, a significant relationship could be observed between these two constructs ($\beta = 0.102$, $p < 0.10$). The findings suggest, one unit increase in self efficacy will result in 10.2% increment in Smartphone security behaviour. Self-efficacy is concerned with the skills and abilities required to accomplish a goal. As illustrated in this study, when the respondents are highly confident in their ability to conduct a recommended action and they do not feel the action is difficult or cumbersome, they are more likely to take the action, i.e. implementing Smartphone security.

CONCLUSION

This study addresses a very important behavioural issue of mobile security from a specific perspective. It has significantly contributed to the body of knowledge and should capture the interest of both academics and management practice. Theoretically, this study developed a theoretical model of factors affecting user's Smartphone security behaviour. Practically, the results of this research will assist manufacturers of Smartphone to improve the security features as expected by the users.

Although this study provided interesting insights into the factors Smartphone security behaviour, it has some limitations. Firstly, is the number of factors examined in the study. Secondly, the samples involved in this study were university students and it may not reflect or represent the overall population of Smartphone users. Thirdly, due to the nature of quantitative research, this study relied on self-reports based on subjective perception which may be biased.

Against the aforesaid limitations, the present study can be further extended for future research. Besides the seven factors, there are many other factors that are worth investigating such as personal IT innovativeness, demographic factors, and Smartphone usage experience. In terms of population, future study should consider focusing on the general public and not only university students. Combining both qualitative and quantitative approach in future study would provide better understanding about Smartphone security behaviour.

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Moral Reasoning of Adolescents

Blandína ŠRAMOVÁ

Faculty of Education

Comenius University in Bratislava

Slovakia

sramovab@fedu.uniba.sk

ABSTRACT

The paper is focused on finding the stage of moral development of contemporary adolescents. The focus is on the analysis of the way of thinking about moral dilemmas of adolescents. The aim is to find out how they perceive moral dilemmas and what strategies they use to solve them. We used a qualitative research design. The sample consisted of Slovak adolescents (N = 85, 52 females and 33 males) with the average age of 16.8. We created three moral dilemmas which were used to establish the level of moral development of the participants. Their task was to solve the dilemmas. The content analysis discovered that the majority of the participants preferred the solutions on the level of a higher stage of morality (i.e., conventional and post-conventional stage) rather than the pre-conventional stage of morality. Therefore, the resulting findings pointed to the degree of moral reasoning, which is based on the respect for the social rules and common good. The present study is a part of the project VEGA 1/0623/15 "Value Messages Perceived by Pupils in Formal Education".

Keywords: Moral reasoning, adolescents, developmental psychology.

INTRODUCTION

Morality (lat. mos = will, rules, manners) represents a set of beliefs, values, and underlying judgments about right or wrong behaviour. These moral norms are introduced to the individual during their life, and they act as regulators of behaviour. General moral norms develop during interiorization and are reflected in the behaviour (Cakirpaloglu, 2012; Brunclíková, Cabanová & Ďurišová, 2016; Hamranová, 2015; Šramová & Hamranová, 2015). An important role plays the conscience, which is an internalized set of moral values (Craig, 1989). Under moral behaviour of an individual we understand a behaviour that is in line with their conscience.

Looking at contemporary literature on moral development, we find two main concepts explaining the development of moral judgment. According to some authors, moral judgment develops intuitively and the leading roles are played by unconscious processes (Hauser, 2006; Mikhail, 2007; Damasio, 1994). This theory is grounded in the fact that people often cannot find a rational explanation for some of their very strong moral convictions (Hauser et al., 2007). Their moral judgment, therefore, develops under the influence of affective experience and is driven primarily by affective responses (Cushman, Young & Greene, 2010), which is supported by neuroscientific evidence (Damasio, 1994; Koenigs et al., 2007). However, even if the evidence of intuitive solving of moral problems and dilemmas exists, it does not mean that the individual does not employ rationality into the moral judgment. Moral judgment is a product of intuitive as well as rational psychological processes. It is, therefore, a product of affective and cognitive mechanisms. Moreover, evidence shows that intuition is tied to the stage of age development of the individual, as well as to the degree of cognitive development (Kohlberg, 1976; Piaget, 1965). J. Piaget (1965) and L. Kohlberg (1976), socio-cognitive oriented authors, are regarded as the lead representatives of the psychology of morals, and the pioneers of the dominant cognitive development paradigm. According to them, moral judgment is the product of conscious and effortful reasoning. Piaget (1965) connected the degree of cognitive development to the degree of development of moral thinking. He emphasized that while solving the moral problems, the individual decides based on their achieved cognitive abilities, which means that they justify their moral decisions. According to Piaget, cognitive development influences how the individual understands their surroundings, how they understand the differences between good and bad, and how they interpret moral norms. Children, depending on their age (although it is not determinative), use certain rules during their play according to the following stages (Piaget, 1965):

1. *Motoric and individual stage* (until the age of c. 3) is characterized by the child who plays individually, does not follow the rules but their own will and habits.
2. *Egocentric stage* (from the age of c. 3 to 6) is typical of the child trying to mimic the rules, but their interpretation is adjusted to child's own perception.
3. *Beginning of cooperation* is visible in the child at the age of c. 7 to 10. Child wants to have unified rules, but there are some misunderstandings and deviations in their explanation and understanding.
4. *Codification of rules* is apparent from the age of 11. In this stage, the child understands and interprets the rules relatively accurately and demands their observance from the other players, as well.

However, Piaget did not connect the understanding of the rules to their observance. When explaining the moral thinking, he used an interview in addition to an observation of the children. He created 'moral stories' that

included questions about lying, punishment, justice, and equality of the authority. Based on the interview where the children were presented with the moral stories, Piaget (1965) found two main types of morality:

1. *Heteronomous morality* (age of 4 to 10) is linked with the respect for the rules established by external authorities, i.e., adults (usually parents). The child passively takes in the moral norms that are untouchable and unchanging. Punishment is understood as the right choice, is determined by the authority, and is the result of noncompliance with the norms.
2. *Autonomous morality* (age of 10 to 20) is based on cooperation. The individual understands, respects, and voluntarily accepts the norms. Moral rules are acquired by interiorization. The individual is not dependent on the evaluation given by the adult authority. They think about various alternative views of the world. Punishment is regarded as a way of fulfilling the ideals.

Moreover, Piaget was interested in the way the individual perceives justice. In this context, he emphasized the influence of social environment on the child's perception and evaluation of what is right and what is wrong in the perception of justice, the following stages can be found (Piaget, in Heidbrink, 1997):

1. *Fair and right is what the adults expect.* This is a period between the age of 3 to 8, and it corresponds to the heteronomous stage of morality. The child is subjected to the rules established by the authority that are valid without a doubt. Thus, what is 'just' is given by the adult. The child is in the egocentric phase of morality development until the age of c. 8, so the child mechanically judges a guilt based on material damage, not based on intention of the person.
2. *Equality in relation to authority* surfaces in the period between the age of 8 to 11. In this stage, the child wants to be on equal terms with the authority, and is especially sensitive to injustice, as well. The child has doubts about the general validity of the rules and justice.
3. *Feel for justice* starts approximately from the age of 12 and corresponds to the autonomous stage of morality. The equality is relativized and the individual ponders the motives of action and of justice according to the situation.

Another important representative who brought morality back to the front in the developmental psychology research is Kohlberg (1969). His cognitive developmental research program was a certain challenge to the behavioural and social learning views of socialization. Despite the criticism that it is not universally valid across cultures, ages, and genders (Simpson, 1974; Gilligan, 2016), this conception is respected by the professional public. However, it is important to add that recently, the importance of Kohlberg's conception has been decreased, which could be caused by the fact that it was connected to the prestigious and authoritative Piagetian paradigm (Lapsley & Narvaez, 2005), as well as by the fact that alternative models are available in the field of cognitive sciences. Nevertheless, the stages of development formulated by L. Kohlberg (1976) and the methods of morality research using moral dilemmas are still referred by the psychological and pedagogical field. Kohlberg was also of the opinion that cognitive development is a necessary precursor of moral development. That, however, does not mean that achieving the higher cognitive stages is linked to the higher levels of morality. In Kohlberg's theory of stages of moral development, he proposed three main categories of morality development:

1. *Pre-conventional stage of morality* (age of 3 to 6) is based on the exterior events, not on the persons and norms. The norms are regarded as something external. The action is dependent on reward and punishment. The individual wants to evade punishment, so they adjust to the authorities. They also want to satisfy their own interests and needs while respecting the interests of the other people.
2. *Conventional morality* (age of 6 to 12) is based on identifying with the norms that the individual interiorizes. The individual observes the conventions and comes up to expectations of the others. The individual's action is regulated by the fear and concerns about disapproval of others. The individual wants to be in agreement with the others and support the society, groups, and institutions.
3. *Post-conventional morality* (age of 12 to 15) is characterised by the individual being able to accept the norms, and also to evaluate them according to individual's own accepted principles. The individual orients on the lawful behaviour and social contracts, as well as on generally valid ethical principles in society. Identification with the group or influence of the authority is no longer decisive in this stage of morality. Laws and norms are regarded as common good and protection of human rights. One's own conscience and principles are the measures of moral evaluation.

Initially, Kohlberg's co-worker, C. Gilligan, argued that both of the authors mentioned above created *morality of justice* which considers the masculine moral development, but not the feminine. That was her main objection Kohlberg did not agree with. The result was the formation of women's *ethic of care* (Gilligan, 2016). According to Gilligan, women regard the problems with the perspective of the group and family (ethics of care), contrary to men who favour social standpoint (morality of justice). Women's ethics of care has three stages:

1. *Pre-conventional: orientation to self-survival* is characterised by the woman who concentrates on herself and the problems of her survival are her priority. Therefore, the woman orients on individual survival. Transition is from selfishness to responsibility to others where connection to other people comes into foreground.
2. *Conventional: goodness as self-sacrifice* is the mother's morality that is distinguished by the care for the weak and by the suppression of one's own interests and needs. Transition is from goodness to truth where the conflict between egoism and altruism is evaluated by the conventional criteria and by the criteria of the 'truth'.
3. *Postconventional: principle of non-violence* is characterised as a certain synthesis of egoism and altruism, aiming not to hurt oneself and others. It manifests itself by the realization that 'I' as well as the others are dependent on each other.

According to Gilligan (2016), masculine and feminine morality are on the same level, so they are complementary, contrary to Kohlberg's understanding of morality. Kohlberg emphasized mainly autonomy, rules, and lawfulness.

N. Eisenberg (1982) researched moral reasoning in the area of prosocial behaviour, result of which was the *Theory of prosocial moral reasoning*. Her research was focused on finding the way the children solve moral dilemmas, and she identified five main levels of prosocial reasoning:

1. *Hedonistic (self-focused) orientation* (age of 0 to 7) is focused on the self. Any altruistic action is strictly tied to bringing benefit to oneself.
2. *Need of others orientation* (some preschool and primary school children) has the form of the need to help the others, but without the appearance of guilt or self-reflection.
3. *Stereotyped approval-focused orientation* (age of 7 to adolescence) is a level where the individual acts in a prosocial way when the action will impress others and will make the individual liked. They describe their behaviour stereotypically as good or bad.
4. *Empathic orientation* (a few high school children and most secondary school children) when the individual truly feels and expresses empathy, they empathize with the feelings of others. A real sense of guilt is present, or a sympathy when considering their own actions.
- 4.b *Transitional level* (a few secondary school children) is characterised by the individual protecting the dignity and self-esteem of others.
5. *Internalised orientation* (rare in children) is characterised by the internalised norms and principles. The individual has trust in themselves and believes that they can maintain self-respect by behaving with a duty of care towards others. They are motivated by the desire to maintain their own set of principles.

In line with Piaget and Kohlberg, Eisenberg puts emphasis on the cognitive development in the morality development. However, the difference is that Eisenberg believes that moral judgment is influenced by the emotions, and that there is a possibility for the individual to regress to the previous level.

Based on the theories mentioned above, we determined that the aim of our research would be to find the developmental trends in contemporary Slovak adolescents' moral thinking, especially in the judgment-making processes.

METHODS

Participants

The sample consisted of secondary school students, due to the fact that the value system of an individual should be more or less stable around the age of 16. The sample consisted of Slovak adolescents (N = 85) with 52 females and 33 males with the average age of 16.8.

Measures

Qualitative research method was used in order to measure moral reasoning and to look at developmental trends in present-day adolescents. We used the method of moral scenarios. **Moral dilemmas** were designed to examine unique developmental trends in adolescents' moral thinking and decision-making on nine moral dilemmas. These dilemmas were a part of a research aiming to find the value messages perceived by pupils in formal education. The present study introduces partial results from the analysis of the three out of nine presented dilemmas. The dilemmas were a part of a paper-based questionnaire to which the participants responded in writing. Afterwards, the answers were coded. The researcher read all responses on dilemmas and developed a coding system. The final coding system was developed separately for each dilemma to capture the participants' unique moral decisions on each dilemma, regarding the theory developed by L. Kohlberg and N. Gilligan (see Results).

RESULTS

The findings were run through quantitative-qualitative analysis following gender differences. We will now look into how the participants solved the dilemmas.

Dilemma 1:

Ingrid has a very rare blood type. When the school year started, Ingrid was accepted to the basketball team. One day, Ingrid was summoned by a doctor who asked her to donate a substantial amount of blood to a gravely ill girl who needed Ingrid's blood type. Since it is a serious illness, the blood needs to be donated multiple times in the course of several weeks. Therefore, after the agreement to donate her blood, Ingrid would need to go to the hospital for a longer period of time. This could cause Ingrid to feel weak which could potentially lead to losing her spot on the team, as well as falling behind the school work. What should Ingrid do and why?

The first moral dilemma puts individual in the position where they have to choose between a career in sport and a possibility to restore a stranger to health and save their life.

In the analysis of the Dilemma 1, we were looking at the frequencies of adolescents' decisions, which were sorted into the following categories: A/ Donate blood to help and save the life; B/ Donate blood with respect to one's health; C/ Do not donate blood; D/ No decision.

Table 1: The frequencies of participants' decisions by gender in Dilemma 1.

Category	A/ Donate blood to help and save the life	B/ Donate blood with respect to one's health	C/ Do not donate blood	D/ No decision
Females	36	5	6	5
Males	23	5	2	3
Together	59	10	8	8

The content analysis of the decisions to Dilemma 1 showed that the most frequent category was A/ **Donate blood to help and save the life** (69.4%) (Table 1). This category was dominant in girls (42.0%) as well as in boys (27.1%). The explanations similar to the following prevailed: "Definitely help, even considering the circumstances" (P21, male); "She should donate her blood to help and save the girl, she could re-join the club later, but the girl wouldn't get her life back" (P8, female). The second place belonged to the category B/ **Donate blood with respect to one's health** (11.8%), with equal distribution between the two genders (5.9% each). This category was presented by the explanations like: "She should donate her blood, but not too much" (P31, female). Category C/ **Do not donate blood** (9.4%), as well as category D/ **No decision** (9.4%), had identical representation and the decisions were supported by the explanations like: "There are definitely more people in the world who could donate their blood" (P45, female); "I don't know what she should do" (P20, female).

Dilemma 2:

"Two young men, brothers, got into serious trouble. They wanted to leave the town in secret and needed money. Karol, the elder one, broke into a shop and stole 1 000€. Younger Ján went to a senior who was known to be helping people in town. Ján said to him that he was seriously ill and needed 1 000€ to cover his surgery. He asked him to lend him the money and promised to return it after his recovery. In reality, Ján was not ill and had no intention to return the money. Even though the old man did not know Ján very well, he lent him the money, and so Ján and Karol fled the town with all the money. What is worse? To steel like Karol or like Ján? And why?"

Second moral dilemma aims to find out whether the adolescents favour one of the alternatives of the immoral behaviour, or evaluate the two options identically.

The frequencies of adolescents' decisions are to be found in Table 2. Categories were the following: A/ Larger amount of culpability of deception (Ján's deceit of the senior); B/ Equal amount of culpability of deception and theft; C/ Larger amount of culpability of theft (Karol's breaking in and stealing money from the shop).

Table 2: The frequencies of participants' decisions by gender in Dilemma 2.

Category	A/ Larger amount of culpability of deception	B/ Equal amount of culpability of deception and theft	C/ Larger amount of culpability of theft
Females	47	3	2
Males	31	2	0
Together	78	5	2

The content analysis of the decisions to Dilemma 2 showed the biggest preference of category A/ **Larger amount of culpability of deception** (91.8%) (Table 2). This category dominated in girls (55.3%) as well as in boys (36.5%), and the decision was supported by the following explanations: *"It's worse to lie like Jân, he lied to the old man who sympathized with him"* (P71, female); *"Lie to people, and especially to seniors, is inhuman, indecent, and is worse than when someone is stealing"* (P33, male). The small frequency of the category B/ **Equal amount of culpability of deception and theft** (5.9%) was accompanied by the explanations like: *"Neither was a good solution, karma will get them one day"* (P31, female). The least preferred category C/ **Larger amount of culpability of theft** (2.4%) was accompanied by the explanations like: *"Karol did a worse thing"* (P51, female).

Dilemma 3:

"You are going home from a party and you meet your classmate. He is very drunk and feels terrible. You know that he has strict parents. What do you do?"

In the analysis of Dilemma 3, we looked at the frequency of adolescents' decisions, which were sorted into the following categories: A/ I take him to my house; B/ I send him to his parents; C/ I call help; D/ I do not help him.

Table 3: The frequencies of participants' decisions by gender in Dilemma 3.

Category	A/ I take him to my house	B/ I send him to his parents	C/ I call help	D/ I do not help him
Females	22	20	5	5
Males	13	11	1	8
Together	35	31	6	13

The content analysis of the decisions to Dilemma 3 revealed that the most favoured option was the category A/ **I take him to my house** (41,2%) (Table 3). This category was dominant in girls (25.9%) as well as in boys (15.3%) and was supported by the explanations such as: *"He will spend the night and I will help him to sober up faster"* (P63, female); *"I'll take him home"* (P35, male). The second most frequent option chosen by the participants was the category B/ **I send him to his parents** (36.5%). The choice of this category was supported by: *"I will send him home and tell his parents not to punish him"* (P81, female). The next category was D/ **I do not help him** (15.3%) demonstrated by: *"I will continue on my way"* (P12, male); *"I would like to help him, but unfortunately, I have to go home"* (P8, female). The least favoured option was the category C/ **I call help** (7%) and was presented by the explanations like: *"I will call the ambulance"* (P83, female).

CONCLUSIONS

The present study documents how adolescents perceive moral dilemmas and what strategies they use to solve them. The results showed that most of the participants were thinking on the level of higher degree of morality. The proposed solutions to all three dilemmas were mainly on the level of the conventional and post-conventional stage of development of morality.

In the *conventional stage of morality development*, the participants emphasized the care of the weak and the repression of one's egoistic interests and needs in favour of other people. They equally stressed the observance of the usual, generally valid norms and social conventions.

In the *post-conventional stage of morality development*, the statements oriented on lawful behaviour and social contracts were dominant. The participants regarded the laws and norms as a common good, despite the criticism of the educational system in schools that lately has been focused more on the pupils' performance rather than the moral development education.

The *pre-conventional stage of morality* had the smallest representation in the solving of the dilemmas. In this case, participants preferred their own selfishness or their own interests and needs with respect to the interests of other people.

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Morphological and Contextual Clues in Guessing Word Meaning from Context in a Foreign Language*

Berrin MANGA ÇETİNAVCI

Uludağ University

berrinmc@uludag.edu.tr

Meral ÖZTÜRK

Uludağ University,

mozturk@uludag.edu.tr

ABSTRACT

Guessing word meaning from context is one of the strategies that language learners frequently use while dealing with unknown words (Fraser, 1999; Paribakht and Wesche, 1999). Language learners tend to use different types of clues including morphological and contextual clues in their attempts to derive word meaning from context (de Bot, Paribakht & Wesche, 1997; Paribakht and Wesche, 1999; Soria, 2001; Nassaji, 2003). The purpose of this study is to investigate whether Turkish EFL learners use morphological clues in their lexical inferencing process and whether they are able to integrate morphological clues with contextual clues while guessing the meaning of an unknown word when they are both present. A vocabulary guessing test was administered to the subjects who were the students attending prep classes at a School of Foreign Languages in Turkey. The results showed that the subjects were more successful in determining the meanings of morphologically complex words. As for the integration of morphological analysis and usage of contextual clues, morphologically complex words were guessed more correctly than simple words in poor context. However, there was not a significant difference between the correct guessing rates of simple and complex words in rich context. The results may be interpreted as support for teaching language learners to infer word meaning through instruction in the principles of morphological and contextual analysis.

Keywords: Guessing Word Meaning, Morphological Complexity, Morphological Clues, Contextual Clues

INTRODUCTION

While reading a text in a foreign language, language learners may come across some unfamiliar words. Encountering a few unfamiliar words may not cause an obstacle to general comprehension of the text. However, the fact that readers are not acquainted with many words or the most essential ones in the text may jeopardize the reading process and their comprehension (Soria, 2001, p. 77). Given the size of the English lexicon (i.e. 114,000 basic words according to an estimate by Goulden, Nation & Read, 1990), EFL learners are likely to encounter new words frequently in the course of their reading. In this case, language learners have different kinds of strategies such as ignoring unknown words, using a dictionary or guessing word meaning from context in order to compensate for their lack of vocabulary knowledge (Fraser, 1999; Harley and Hart, 2000). Fraser (1999) and Paribakht and Wesche (1999) found that lexical inferencing was the most preferred strategy that the language learners attempted to use in order to identify the meanings of unknown words while reading. Guessing word meaning from context (lexical inferencing) “involves making informed guesses as to the meaning of a word in the light of all available linguistic cues in combinations with the learner’s general knowledge of the world, her awareness of context and her relevant linguistic knowledge” (Haastrup, 1991, p. 40).

Studies so far have defined some factors that can affect guessing ability. According to Mondria and Witt-de Boer (1991), there are three main factors affecting the guessing of the words: contextual factors, word factors and learner / reader factors. Contextual factors which influence the guessability of words are redundancy of the context, the occurrence of synonyms and antonyms, and words associated with an unknown word (Mondria and Witt-de Boer, 1991). As for the word factors, they are related to some features such as the part of speech, the degree of concreteness or abstractness, the transparency of the word structure (Mondria and Witt-de Boer, 1991). The factors which are related to learners and readers involve vocabulary knowledge, knowledge of grammar, language proficiency, attention to details, cognitive and mental effort and reader characteristics (Kaivanpanah, and Alavi, 2008). While these factors have been studied independently in previous research, the interaction among them has received relatively little attention. In the present study, the effect of contextual richness and word structure on the successful guessing of word meaning will be investigated in combination.

* This article is based on the first author’s unpublished MA thesis (2003) at Uludağ University, Bursa, Turkey.

BACKGROUND

During the recent decades, researchers have paid an increasing attention to guessing word meaning from context on the basis of contextual clues and morphological analysis. Contextual guessing requires guessing the meanings of unknown words based on interpretation of the relationships among sentence components by consulting or not consulting world knowledge (Parel, 2004). Contextual guessing is a useful and efficient reading strategy in that it does not rely on external sources unlike dictionary look-ups and thus is not disruptive to the reading process. However, not all contexts are equally effective (Beck et al., 1983). Some contexts are better than others. Better contexts are those which offer unambiguous clues and ‘direct’ the reader to the correct meaning. Successful guessing of a word’s meaning largely depends on the availability of such clues. Mondria & Wit-de-Boer (1991) investigated the effect of contextual factors on the guessability of unknown words in isolated sentence contexts by Dutch secondary school learners of French. The learners guessed the meanings of unknown words more successfully in ‘pregnant contexts’ which offered clues to the meaning of target words than non-pregnant contexts. The presence of multiple clues is also important for a foreign language reader as the provision of a clue in an unfamiliar word might render it unusable to the learner.

Another strategy used to infer the meanings of unknown words is semantic analysis of word morphology based on language learners’ knowledge of word roots and affixes. Morphological analysis is defined by Wysocki and Jenkins (1987) as “analysing an unfamiliar word by separating it into its parts (e.g.: prefix, stem, suffix), accessing the meanings of the individual parts, and then attempting to derive the meanings of the whole on the basis of these meanings” (p. 32). Stoller and Grabe (1995) point out that if language learners are familiar with a few stems, prefixes and suffixes, they are able to recognize the meanings of a lot of words. In other words, it can be stated that language learners’ knowledge of the meanings of morphemic constituents may enable them to arrive at the meaning of an unknown word by combining the meanings of each part of an unknown word.

Various studies showed that morphological analysis is an important knowledge source that language learners use to make informed guesses about meanings of unknown words. In a study by Paribakht and Wesche (1999), the learners tried to identify the meanings of target words by using certain knowledge sources. The learners made use of sentence-level grammar knowledge most frequently when attempting to infer the meanings of unfamiliar words. The study also found word morphology to be one of the most frequent knowledge sources that the language learners used in order to unlock the meanings of unfamiliar words in the inferencing process. Soria (2001) used think-aloud protocols to describe and understand what knowledge sources Ilokano language learners used to arrive at the meanings of unknown Ilokano words in a written text and the study showed that word morphology was the major type of knowledge source utilized by the learners. In the study by Nassaji (2003), the use of strategies and knowledge sources in L2 lexical inferencing was examined by using think-aloud techniques. Of all the knowledge sources, the participants in the study used world knowledge most frequently to make lexical inferences (46.2%). The second type of source preferred by the participants was morphological knowledge (26.9%).

A single source of information may not always enable language learners to infer word meaning accurately. For that reason, the integration of different kinds of knowledge sources such as the integration of morphological complexity and context may facilitate correct guessing. In other words, when the transparency of morphologically complex words and a rich context, which supplies language learners with sufficient contextual clues, are successfully combined, the possibility of successful and effective inference may be greater than the possibility of correct guessing when only one knowledge source is utilized by language learners.

Several studies have shown that learners successfully combined the two knowledge sources (Soria, 2001; Mori and Nagy, 1999; Mori, 2003). One of the findings of the study by Soria (2001), which examined the lexical inferencing procedures used by the Ilokano learners, was that the single most frequent combination of knowledge sources exploited by the subjects was the use of the context and word morphology of the target word. Especially the high level learners of Ilokano were more successful in utilization of the support of the context and morphology of the unknown words. Mori and Nagy (1999) did a study with the aim of determining whether or not English speaking students learning Japanese were able to utilize information from word elements and contextual clues in the process of interpreting novel kanji compounds (words consisting of two or more Chinese characters) and the results showed that when the students were given both morphological and contextual clues, they were capable of combining these two knowledge sources efficiently. Another study (Mori, 2003) showed that the students’ guesses based on the combined sources (contextual support and semantic transparency) were much better than their guesses based on a single source.

Several other studies failed to find evidence for successful combination of knowledge sources (Wysocki and Jenkins 1987; Parel, 2004). Wysocki and Jenkins (1987) examined the children’s ability to apply morphological analysis to infer unknown words. However, they didn’t find evidence that the students combined morphological clues with contextual ones. The students’ scores on inferring morphologically transparent words did not differ between strong and weak contexts. Parel (2004) did a study focusing on the sensitivity to the word structure and

the ability to make morphological analysis with contextual guessing and based on the results, Parel (2004: 862) pointed out that if the learners had been able to combine the morphological complexity with the strength of context, their misinterpretation of the target words could have been avoided. The present study aims to investigate whether Turkish EFL learners use morphological clues in their lexical inferencing and whether they are able to integrate morphological complexity with contextual clues while guessing word meaning from context.

THE STUDY

Participants

The participants of the present study were university students attending intensive preessional English classes at a School of Foreign Languages in Turkey. The objective of the institution is to provide the students with a general overall ability of English language. According to their scores in the placement tests administrated to them at the beginning of the academic year, they were placed to intermediate classes. 88 students served as the subjects of the study and their mother tongue was Turkish.

Materials

In order to attain the objective of the study, the researcher prepared and utilized a Vocabulary Guessing Test. The subjects were required to guess the meanings of the target words written in bold and underlined in single sentence contexts and then write the Turkish equivalents of the target words (cf. Appendix).

The target words were presented in single sentence contexts in which all the words apart from the target words were familiar to the subjects. The authenticity of the sentences was checked by two native speakers of English who were both university lecturers. The structures of the sentences were simple. Some sentences included coordinating conjunctions such as “and”, “so” and only two sentences included “because”, which is a subordinating conjunction. The subjects were familiar with these conjunctions and it was thought that they would not add any complication or difficulty to comprehension of the sentences. The sentences were divided into two different groups in terms of contextual richness. 16 of the sentences provided poor context for the subjects to guess the meaning of target words. These sentences included a single clue to reflect the meanings of the target words. The other 16 sentences supplied rich context, i.e., these sentences contained two or more contextual clues supporting the meanings of the target words. The following items from the test illustrate the difference between the two types of contextual support:

*The **allies** are at war.* (Poor context)

*The table was very heavy, so we had to **drag** it along the floor.* (Rich context)

In the Vocabulary Guessing Test, 32 target words were tested. The words whose frequency was in the 3000 or beyond were selected so as to minimize the possibility of the subjects’ familiarity with the target words. In addition, their teachers were asked if the students had learned the target words before and also the words were checked for not being in their course books. They were selected from four main word categories, namely, nouns, verbs, adjectives and adverbs. The target words were also categorized in terms of their morphological structure as simple and complex words.

Simple words: The total number of the simple words was 16. Eight of them were presented in poor contexts and the others were in rich contexts. None of the simple words in the test took derivational suffixes except adverbs. The adverbs taking “-ly” were used in the test since “-ly” was considered to be the suffix which indicated the word class of adverbs.

Complex words: In the present study, the prefixes “re-, mis-, in-, dis-, im-, un-, pre-, ir-” were taken into consideration and while selecting target complex words, one of the criteria was that the subjects’ familiarity with the stems of the words. The test included 16 morphologically complex words, eight of which were tested in the sentences with poor context and eight of which were presented in the sentences providing rich context.

Table 1: Design of the Vocabulary Guessing Test

Morphological Complexity	Context		Total
	Poor	Rich	
Simple	8	8	16
Complex	8	8	16
Total	16	16	32

Procedure and Scoring

The Vocabulary Guessing Test was administered to the participants during their usual course hours. The instructions were given in both English and Turkish. They were given in English since they were exposed to English instructions in their lessons all the time and they were given in Turkish so that the subjects could understand the instructions correctly. The average time spent for the test was 30 minutes. To determine the degree to which learners were successful in guessing word meaning, a 3-point scale was used. For each item in the Vocabulary Guessing Test, different points were assigned for correct, partially correct (acceptable) and incorrect responses. Two points were given for the exact translation equivalent of the target words. When the subjects gave the near synonym of the word or a related word, this answer deserved one point. Finally, incorrect guessing which has no relation with the meaning of the target word was scored as zero. The maximum total score each subject could get for the Vocabulary Guessing Test was 64.

RESULTS

Morphological Complexity and Guessing

In analysis the percentage of responses in each category was computed by taking the ratio of the actual frequency of answers in a given category to the maximum possible frequency. Table 2 shows the scores of the morphologically simple and complex words in the Vocabulary Guessing Test. The simple words were guessed correctly at 28.62 % of the time. As for the morphologically complex words, they were guessed correctly at 42.75% of the time.

Table 2: Simple and Complex Word Scores

	Correct	Partially correct	Incorrect
Simple Words	403 28.62%	123 8.74%	882 62.64
Complex Words	602 42.75%	241 17.12%	565 40.13%

Figure 1 displays the combined scores of correct and partially correct guessing of the morphologically simple and complex words. As it is seen visually in Figure 1, complex words were guessed more successfully than simple words by the subjects. The difference between the percentages of the scores of these two different types of words is 22.51%. This difference is significant at .05 level [$\chi^2 (1, n= 88) = 8.078, p< .05$].

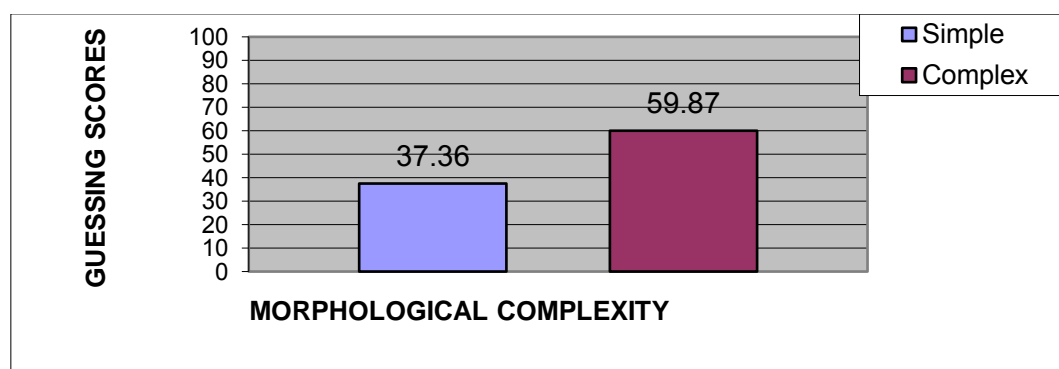


Figure 1: Simple and Complex Word Scores

Context and Morphological Complexity

The Turkish equivalents of the morphologically complex words in poor context were given correctly at 42.33% of the time, whereas the morphologically simple target words were guessed at 14.92% (Table 3). As for the guessing scores in rich context, the percentage of the correct answers for simple words is 47.16% and it is 38.35% for complex words.

Table 3: *Guessing Scores of Simple and Complex Words in Poor and Rich Contexts*

	Correct		Partially correct		Incorrect	
	Simple	Complex	Simple	Complex	Simple	Complex
Poor Context	105 14.92%	298 42.33%	90 12.78%	33 4.69%	509 72.30%	373 52.98%
Rich Context	332 47.16%	270 38.35%	78 11.08%	163 23.15%	294 41.76%	271 38.50%

The combined scores of simple and complex words in poor context and rich context can be seen visually in Figure 2. The subjects were able to guess the complex words in poor context providing insufficient contextual clues more correctly (47.02%) than the morphologically simple ones in poor context (27.5%). The difference between the guessing scores of simple and complex words gets smaller in rich context and this difference is non-significant [$\chi^2(1, n=88) = 0.667, p < .05$].

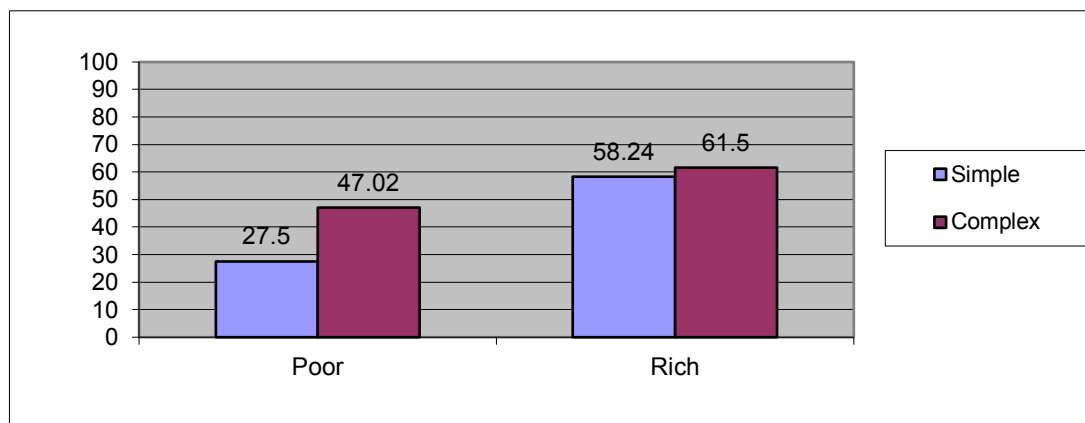


Figure 2: Guessing Scores of Simple and Complex Words in Poor and Rich Contexts

CONCLUSION

The present study set out to explore the effect of morphological complexity on guessing word meaning and whether the integration of contextual and morphological clues leads to correct guessing. As expected, the findings of this study showed that morphologically complex words were guessed more successfully than simple words as a result of morphological analysis. There are some other studies in the literature examining the effect of morphological complexity on guessing word meaning from context and some of these studies have reached the results supporting the hypothesis that the knowledge of word roots and affixes may facilitate inferring the meanings of unfamiliar words in context (Soria, 2001; Nassaji, 2003). The research findings point to the importance of morphological analysis in lexical inferencing. It can be said that language learners apply the strategy of analysing the elements of unknown words in context. Besides, it could be considered that morphological complexity is a facilitative and powerful tool for language learners in the process of arriving at the meaning of unknown words as long as all the constituents in the words are known by language learners.

In the matter of the integration of contextual clues and morphological complexity, it was found that the subjects were more successful in guessing the meanings of the morphologically complex words than simple ones in poor context. However, there was hardly any difference between the guessing rates of simple and complex words in rich context.

As Mori and Nagy (1999) point out, when morphological clues and sufficient contextual clues are presented together in a context, language learners are expected to use this integrated information successfully in guessing process. In the present study, this was not achieved by the participants. There was no difference between the guessing rates of simple and complex words in rich context. Several explanations can be offered for the lack of significant difference in guessing scores between simple and complex words in rich contexts: It might be that

when language learners are exposed to more than one kind of information source, namely both morphological complexity and contextual clues, they are not able to utilize both of them in the same sentence or noticing and tackling of two sources may exceed their cognitive capacity, and so they prefer one of the sources. Alternatively, they may not seek morphological clues at all when contexts provide relatively rich information about the meaning of an unknown word or they may consider that contextual clues could enable them to generate at least partially correct guesses (contextually appropriate guesses). Yet another possibility is that learners might have considered context to be the more reliable knowledge source than morphological complexity due to the fact that language learners may be aware of deceptive morphological transparency of many words in English. For that reason, they might have avoided relying on morphological analysis for fear of inferring the meaning of the word incorrectly seeking help from the surrounding context.

In order to succeed in learning to read and comprehend contexts, guessing word meaning is one of the strategies that language learners use. For some language learners, guessing strategies may not arise naturally. For that reason, they may need to be taught how to use guessing strategies effectively. As the present study showed, dedicating some class time to raising students' awareness of morphological analysis while dealing with unknown words in context would be helpful. The knowledge of some basic rules of morphologically complex word structures and the meanings of the most frequent affixes and roots should be taught to language learners as well as the new words themselves (Parel, 2004). The morphologically complex words that language learners come across while reading different types of texts in a foreign language might be comprehensible to them if they know the meanings of the word root and its affixes.

The integration of information of word parts and rich context is another strategy that aids language learners in guessing word meaning better and more correctly since the effects of contextual and morphological clues are generally additive (Mori, 2002). White et al. (1989) and Nagy and Anderson (1984) point out that 20% affixed words are deceptively transparent. When the unknown word is a deceptively transparent word, language learners may not be able to reach its meaning by analyzing its morphological complexity only. In this case, they ought to try to search contextual clues and check their hypotheses on the meaning of the unknown word against the surrounding context so as to avoid incorrect guesses caused by deceptive transparency. Using these strategies effectively does not emerge by itself, either. Allocating significant portions of class time to instruction in teaching how to utilize morphological clues and check and verify their guesses against the existing contextual clues may enable students to increase chances of generating correct inferences (Kieffer and Lesaux, 2007). In this way students can establish a habit of utilizing guessing strategies effectively and become independent learners over time.

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APPENDIX (VOCABULARY GUESSING TEST)

NAME/SURNAME:

NUMBER:

CLASS:

PLEASE GIVE THE TURKISH EQUIVALENT OF THE WORDS UNDERLINED BELOW. TRY TO ANSWER ALL OF THEM. IF YOU DON’T KNOW THE MEANING OF THE WORD, TRY TO GUESS IT.

(AŞAĞIDA ALTI ÇİZİLİ OLAN KELİMELERİN TÜRKÇE KARŞILIĞINI VERİNİZ. HEPSİNİ CEVAPLANDIRINIZ. EĞER KELİMENİN ANLAMINI BİLMİYORSANIZ TAHMİN ETMEYE ÇALIŞINIZ.)

- 1-) You can’t park your car in this **lane**.
-
- 2-) This room was decorated **barely** because they didn’t have enough money to buy furniture.
-
- 3-) He wanted us to give a **returnable** deposit.
-
- 4-) ‘ The newspapers **misquoted** my speech,’ complained the president.
-
- 5-) My sweetheart and my father get on **splendidly**.
-
- 6-) One of the **inmates** escaped from prison last night.
-
- 7-) I’m thirsty. Do they sell **refreshments** after the first part of the play?
-
- 8-) Please **replace** the books on the shelves.
-
- 9-) He **shrugged** his shoulders.
-
- 10-) You mustn’t behave **disobediently** and you must pay attention to the rules at school.
-

- 11-) I gave a **precise** description of the thief, so the police were able to find him easily.
-
- 12-) The **impersonator** is imitating Süleyman Demirel now.
-
- 13-) The people listened to the dictator's speech **uncritically**.
-
- 14-) Sheila loves you very much. I'm sure she has upset you **unintentionally**.
-
- 15-) The man was face to face with the **undeniable** truth.
-
- 16-) They are both **keen** golfers, so they train every day.
-
- 17-) She **displayed** good behavior in the playground.
-
- 18-) Officers of the narcotics **squad** searched the club for drugs.
-
- 19-) The table was very heavy, so we had to **drag** it along the floor.
-
- 20-) The soldiers fought **mightily**.
-
- 21-) The **allies** are at war.
-
- 22-) He had an **intense** pain in his back.
-
- 23-) After our quarrel, I saw Mary at a party and she gave me an **insincere** smile.
-
- 24-) The company must **tackle** this financial problem.
-
- 25-) The baby isn't old enough to eat **solid** foods yet.
-
- 26-) The **bricks** for the building will be loaded on this lorry and taken to the building area.
-
- 27-) Third world countries are **exploited** by the richer nations.
-
- 28-) The teacher treats the students in her class **unfairly**.
-
- 29-) My son is in a playgroup for **preschoolers**.
-
- 30-) He never fully **regained** his health after the accident.
-
- 31-) Computer technology is changing **constantly** because new programs are being written every day.
-
- 32-) Pizza is my favourite food, so it is an **irresistible** taste for me.
-

Motivation of Gifted Pupils Towards Negative School Performance

Ilona KOČVAROVÁ

*Department of School Pedagogy
Faculty of Humanities
Tomas Bata University in Zlín
Czech Republic
kocvarova@fhs.utb.cz*

Eva MACHŮ

*Department of School Pedagogy
Faculty of Humanities
Tomas Bata University in Zlín
Czech Republic
machu@fhs.utb.cz*

Adéla VÁLKOVÁ

*Department of School Pedagogy
Faculty of Humanities
Tomas Bata University in Zlín
Czech Republic*

ABSTRACT

The article presents a research survey using the KLIT questionnaire (Climate of the school class). The research group is composed of gifted pupils (n = 208) from lower secondary education (ISCED2) in the Czech Republic. The analysis focuses on one of the areas of the questionnaire, Motivation to negative school performance. The construct validity of this dimension has been verified by exploratory factor analysis, overall results can be considered as reliable. The results show that 15 % of gifted pupils declare a high degree of negative motivation towards school performance. 69 % of gifted pupils agree with the claim that they could have better results at school, but they are hardly going to work regularly. The risk group is primarily pupils who are included in a special school for gifted pupils but who have special educational needs at the same time.

THEORETICAL BACKGROUND

A child which starts school is obliged to conform to the processes of school, class, to his or her teacher, to communicate with classmates and to do school work. In the class, he or she is not an individuality, but cooperates in a fully-fledged way in the creation of class environment as a specific psycho-social environment. In this article, pupils' motives towards negative school performance is understood as one of the dimensions of the class environment. This socio-psychological phenomenon can be viewed from various perspectives, as well as the school environment as such, which is proved by the work of Grecmanová (2008), Čapek (2010), Mareš & Ježek (2012), Kantorová (2015) and other authors which focus on the issue in the specific Czech context. In this article, our conception is based on Lašek (2001), who views the class environments in the context of negative school motivation and self-promotion, besides other things. These are topics which we consider central in the context of research focused on specific group of gifted pupils, in our case so-called underachievers.

Firstly, we think it is necessary to define our conception of giftedness because it creates foundations for other theoretical backgrounds upon which we build our research. The giftedness is an individual's ability in a selected area valued by the socio-cultural environment, which is more developed in terms of both quantity and quality compared with his or her peers (Heward, 2013). In our view, a gifted pupil is a pupil who successfully passed complex diagnostics of intellectual talents at the pedagogical-psychological counselling centre.

Gifted pupils show typical features. T. L Cross (2011) divides these features to endogenous features and their exogenous conditions. Endogenous characteristics are related to the personality of a gifted pupil which includes, for example, asynchronous personality development (disconnectedness between the level of intelligence of an individual and aspects such as motoric and verbal development), perfectionism, multipotenciality, avoiding taking risks, emotional sensibility, intensity and profoundness of experience. Among exogenous conditions of personality development are influences related to culture and its standards, to family, school and peer environment. Also, cognitive features such as high intelligence, rich vocabulary, great memory, etc. impact co-creation of school environment (Davis, Rimm & Siegel 2011).

So, this group is very rich in terms of varieties of types of the gifted included. In its scope, we also encounter a group of gifted pupils called underachievers. The underachievers are gifted individuals who demonstrate

exceptionality in tests of intelligence, but whose performance is under the level of their potential (Clark, 2014). Montgomery (2009) divides the causes for underachievement into internal and external. Internal causes include various diseases, specific learning disabilities, problems with personality or another handicap. As far as internal causes, the study of Kuracki, Dłużniewska & Kosewska (2016) showed positive correlation between creative attitudes and dyslexia. External causes that we are interested in, in relation to our article, include in particular conflict of values and lack of support to develop one's talent. Clark (2014) works with external causes of unsuitable pedagogic approaches which motivates the pupil to underachievement. It is putting emphasis on performance and knowledge, using routine tasks, unfair communication from the teacher and placing high or unrealistic demands.

In relation to this, Montgomery (2009) points out that another cause of underachievement, which is labelling and mentions so-called career gifted, who are children who were identified as gifted at young age, became satisfied with this label and avoid any effort on a long-term basis. They usually state that the tasks are uninteresting and too easy for them. The consequences of such approach are remarkable gaps in knowledge, whose level is gradually lowering under the average level of a given class.

Gifted children might lean towards negative school performance because of the effort to become fully-fledged part of the class and do not protrude from the average level. Gifted students have often reported feeling different from peers (Blaas, 2014), particularly in terms of their seriousness about learning and work habits (Cross & col., 2015). Classmates might approach gifted pupils differently after discovering their giftedness. Then, gifted pupils might deny their academic abilities or disparage them intentionally in order to increase their chances to socialize with their peers. If the gifted will hide their talents only because they want to be accepted by their peers, they cannot develop their potential to the fullest. (Cross & col., 2015) According to Blaas (2014), there also are positive correlations between exclusion of a child from the class and school underachievement.

In the scope of underachievers, there is a specific group of gifted girls. Kerr (2000) attributes this phenomena to differences in expectations and attitudes towards the girls and the boys from their families, school and society. In the upbringing in the family, more passivity, submission and avoidance of taking risks is expected from the girls. Similarly, at school, the boys, who get the teacher's attention more easily and thus, are encouraged more, tend to get more attention.

As the research suggests (Senior, 2014), gifted pupils will demonstrate, as a consequence of social experience mentioned above, such as fears and phobias, fears associated with school in particular, for example fear of failure, of expressing one's own actual abilities, fear of taking risks and making decisions, and fear of not being accepted by one's peers. Such social experiences might affect a pupil's self-concept. Conviction of one's own self-conception is one of significant predictors of academic success and thus demonstration of giftedness (Cross & col., 2015). Underachievement is caused by low level of self-concept, which consequently causes academic failure.

In our research, we set a goal to find out what is gifted children's opinion on statements concerned with negative school performance and to find links between gender, age, type of school and existence of specific education need of a gifted individual.

DESIGN OF THE RESEARCH

For the research, we applied KLIT questionnaire which is used to diagnose the climate in education institution class in the Czech environment (Lašek©, Lašek, 2001). It is designed for the level of secondary education in within the scope of its creation, it was tested on more than 3,500 pupils. The questionnaire is composed of 27 items and it is divided into 3 factors: Supportive climate of the class, Motivation to negative school performance and Assertiveness. In this text, we focus on the analysis of the second mentioned factor.

We managed to involve 208 ISCED2 pupils (in 6th to 9th year of elementary school in the Czech educational system) with diagnosed giftedness in this research. There were 75 girls (36%) and 133 boys (64%) in the age from 10 to 16, with the average age being 13. The research sample covers school years as follows: 6th year is represented by 58 pupils (28%), 7th by 58 pupils (28%), 8th by 45 pupils (22%) and 9th by 47 pupils (22%). 161 pupils (77%) is enrolled on an institution which specializes on gifted pupils (8-year grammar school, lyceum or elementary school specialized in education of gifted pupils) and 47 pupils (23%) is enrolled to traditional elementary school. In spite of the inclusive tendencies of the Czech education system, which are legalized as well, the diagnosed pupils are educated in a segregated way at specialized education institutions. Within the scope of research sample, there were 50 pupils (24%) who stated that (besides to giftedness) they were

diagnosed to have one or more special learning needs, in which we generally include, for the purposes of this text, learning disorders, behaviour disorders, long-term illness, other special needs or their combinations.

Given the fact that this is an available selection of respondents, we work with the results on descriptive and explorative level only and they cannot be considered to be general. However, they indicate links which can be used in further researches or in education of gifted pupils in practice.

RESULTS OF THE ANALYSIS

The analysis is focused on the results of the pupils in the field of Motivation to negative school performance which is one of three dimensions of the questionnaire. The structure of nine items falling under this field was subjected to exploratory factor analysis (extraction method: Principal Component Analysis; rotation method: Varimax with Kaiser normalization; rotation converged in 3 iterations; number of components based on eigenvalue; KMO = 0,778; stat. signif. Bartlett's test of sphericity; MSA of all items \geq 0,723). Its results are shown in the table below.

Table 1: Rotated component matrix of Motivation to negative school performance

Items	Components	
	1	2
I14. When I face a task at school, I tend to be scared, I do not dare to do it.	0.723	
I22. I tend to be scared of various obstacles, I hesitate; it is better to avoid failure.	0.696	
I17. Usually, I rather avoid complicated, not easily solvable situations.	0.646	
I24. I know that I tend to cope with situations at school badly, that is why I prefer to be "invisible" at school.	0.634	
I5. It is best not to draw attention to yourself at school, to be rather average.	0.566	
I8. During examinations, I want to pass, I do not care much about the mark.		0.722
I2. I could have better grades at school, but I hardly force myself to work on regular basis.		0.686
I11. The excellent results are not much of a use later in life.		0.664
I20. I often feel like I know less than the others.	0.387	0.560
Total variance explained	26 %	21 %
Cumulative variance explained	26 %	47 %
Cronbach's alpha of all items	0.728	

Note: Factor loadings under 0,3 are not displayed in the table.

The structure of the investigated factor can be generally considered reliable. On the basis of our data, it can be internally divided into 2 components, with item number 20 under component 2 being ambiguous in their context. The first extracted component gathers items focused on fear of failure in particular, the second gathers items focused in particular on underestimating of school result of pupils.

In spite of the fact that factor analysis offers to keep 2 groups of items, we will focus on individual items and overall results altogether in our analysis, in order to compare the results with standards which were set by the author of the questionnaire.

The respondents could choose the answers from the scale of four levels (I strongly agree, I agree, I disagree, I strongly disagree). The table below represents proportion of agreement, the sum of answers of agreement and strong agreement, expressed in percentage with individual items. The results are in ascending order, according to the strength of agreement.

Table 2: Positive answers on individual items in the questionnaire

Items	n	%
I14. When I face a task at school, I tend to be scared, I do not dare to do it.	41	20 %
I8. During examinations, I want to pass, I do not care much about the mark.	52	25 %
I24. I know that I tend to cope with situations at school badly, that is why I prefer to be "invisible" at school.	58	28 %
I20. I often feel like I know less than the others.	76	37 %
I17. Usually, I rather avoid complicated, not easily solvable situations.	86	41 %
I11. The excellent results are not much of a use later in life.	90	43 %
I5. It is best not to draw attention to yourself at school, to be rather average.	99	48 %
I22. I tend to be scared of various obstacles, I hesitate; it is better to avoid failure.	115	55 %
I2. I could have better grades at school, but I hardly force myself to work on regular basis.	144	69 %

As we can see, more than one third of gifted pupils agrees with the majority of given statements, more than half of positive answers are found in the case of fears of various obstacles and failure. More than two thirds of gifted children agree with the statement that they could have better results at school, but they hardly manage to work on the regular basis.

According to the authors of the questionnaire, we can create a summary index on the basis of answers from the questionnaire (values 1 to 4), which can reach up to scores of 9 to 36 points with 9 items. The pupils from our sample got 15 – 35 points, with 22 in average. When we compare the results with the norms created by the authors of the questionnaire, we will get the following result.

Table 3: The comparison of the results with the norms

Summary index	Interpretation	Occurrence of the pupils according to results (n, %)	
9 - 20	Low occurrence	79	38 %
21 - 25	Normal occurrence	98	47 %
26 - 36	High occurrence	31	15 %
Total		208	100 %

As far as the results outside the norm are concerned, we can see rather low occurrence of negative school motivation in gifted pupils, which can be regarded as a positive finding in the context of school class. But, on the basis of the results, we can also identify small, but not insignificant group of pupils which show high occurrence of the investigated phenomena. On the basis of accessible data about the pupils we gathered during the research, it was possible to compare results of selected group of pupils which is summed up in the following table.

Table 4: The occurrence of negative motivation to school performance in selected groups of pupils

Compared groups		Low occurrence Negative motivation		Normal occurrence of negative motivation		High occurrence of negative motivation	
		n	%	n	%	n	%
Gender	Girls	27	36%	39	52 %	9	12 %
	Boys	67	50 %	48	36 %	18	14 %
Year	6	28	48 %	27	47 %	3	5 %
	7	26	45 %	22	38 %	10	17 %
	8	20	44 %	17	38 %	8	18 %
	9	20	43 %	21	45 %	6	13 %
Education institution	Specialized education institution	68	42 %	68	42 %	25	16 %
	Traditional education institution	26	55 %	19	40 %	2	4 %
Special learning needs	Pupils without special learning needs	76	48 %	65	41 %	17	11 %
	Pupils with special learning needs	18	36 %	22	44 %	10	20 %

When we focus on high occurrence only there is not much difference in terms of gender. So, we cannot agree with Kerr (2000) that the girls stated or showed underachievement. We rather detect negative school performance in higher years of school, especially at institutions specialized in education of gifted pupils (here we can see the most remarkable difference). Because of this, we can judge that children from specialized institutions belong to so-called career gifted and they are subject to labelling (see Montgomery 2009). According to Orosová and Klimková (2016) the experiential education, education teaches through personal experience, positively influences the classroom climate. This means that there is a possibility of long-time experience of gifted pupil with a wrong pedagogical approach which leads him or her to underachievement. In addition, negative school performance is noticed in the group of pupils who state special needs (learning disorders, behavioral disorders, long-term illness, other problems or their combinations). According to Montgomery (2009), these are typical internal causes of underachievement.

On the contrary, if we focus on low occurrence of investigated phenomena, the interesting thing is that it concerns up to 50% of the boys. It is rather detected in lower years of school, in traditional education institutions and in pupils who do not state any special learning needs.

On the basis of our research, we can identify all four variables presented in Table 4 as having potentially factually low occurrence of the negative school motivation. In general, the results show that a group with inclination of negative school motivation is created in particular by pupils who are, on one hand put in an institution specialized in gifted pupils, but on the other hand, they demonstrate special needs altogether with giftedness. There are 43 (21%) of such pupils in our research sample. If we look at their results in individual items, we can see with which they agree the most, and thus they are problematic in terms of negative motivation.

Table 5: Percentage of positive answers in the group of pupils from specialized education institutions who demonstrate special learning needs

Items	n	%
I14. When I face a task at school, I tend to be scared, I do not dare to do it.	11	26 %
I8. During examinations, I want to pass, I do not care much about the mark.	15	35 %
I24. I know that I tend to cope with situations at school badly, that is why I prefer to be “invisible” at school.	18	42 %
I5. It is best not to draw attention to yourself at school, to be rather average.	20	47 %
I20. I often feel like I know less than the others.	21	49 %
I11. The excellent results are not much of a use later in life.	22	51 %
I22. I tend to be scared of various obstacles, I hesitate; it is better to avoid failure.	22	51 %
I17. Usually, I rather avoid complicated, not easily solvable situations.	25	58 %
I2. I could have better grades at school, but I hardly force myself to work on regular basis.	34	79 %

More than half of these pupils agrees with the item saying that the excellent school results are not important later in life. They state that they are scared of obstacles and try to void failure, problems and difficult tasks. What they agree the most with is that they may have had better results at school, but they cannot force themselves to work on the regular basis. Thus, in their positive answers, there are both items focused on fears of failure and items focused on underestimation of school results.

CONCLUSIONS

The article focused on the motivation of gifted pupils towards negative school performance. The negative school performance was defined in relation to class environment which is co-created by the performance. The article pointed out the variables which lead to lowering of a pupil's performance level. These are insufficient study habits, labelling of children in specialized classes of elementary schools and the existence of special learning needs together with giftedness. The practical part presented research which used KLIT questionnaire (Climate of a school class). The research sample was created by 208 pupils with diagnosed giftedness. The analysis was focused on one fields of the questionnaire - namely the Motivation to negative school performance. The results show that 15% of gifted pupils states high levels of negative motivation to school performance. A high-risk group are mainly such pupils who are, on one hand, put in an institution specialized in education of gifted pupils, but at the same time, they have special learning needs altogether with giftedness. These pupils state fears of failure and underestimation of school results as well. In the scope of pedagogical practice, it is important to emphasize that we cannot automatically consider gifted pupils to be internally positively motivated, heading towards success, and performance-oriented. Contrarily, it can happen that these pupils are overwhelmed by fears of their own failure at school, or that they are negatively motivated by the fact that they do not consider the school results to be important and they do not try hard enough in terms of school results. In terms of pedagogical research, this topic proves to be central and suitable to be extended and to be competed with more complex analyses based on, if possible, representative selection. However, such selection is difficult to realize within the group of gifted pupils in the Czech Republic, because of high number of researches by various scientists from various institutions, in which the target group is involved.

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Motivational Factors in Homework: Parent's Strategies

Barbora PETRŮ PUHROVÁ

*Faculty of Humanities, Department of School Education
Tomas Bata University in Zlín
Czech Republic
petru_puhrova@fhs.utb.cz*

Jana MAJERČÍKOVÁ

*Faculty of Humanities, Department of School Education
Tomas Bata University in Zlín
Czech Republic
majercikova@fhs.utb.cz*

ABSTRACT

The paper deals with the topic of home preparation for learning from the elementary school pupils' parent's point of view. The aim of the research was to find out the strategies that parents use to motivate a child to cope with homework without stress and negative emotions and whether motivational factors only targeted at homework or parent's involvement in homework is aimed to motivate the child to the future educational and life success. The results of semi-structured interviews with selected Czech parents show that parenting approach to home preparation is mainly linked to the set of rules for homework and the parents choose motivation strategies as action or reward, also use threats and negative emotions. At the same time, it is evident that the child's motivation to manage the home preparation is linked to their parent's responsibility and the ambition of the child's school success.

INTRODUCTION

The family is a system that is influenced by the individual context of different variations of the parent-child relationship with the unique lifestyle. Each family as a specific dynamism is given by a particular autonomy and individuality. Parents play different roles in child's education. Parent's motivation in home preparation, homework, and home learning as an integral part of family life with school aged children become an interesting topic for analysis the motivational strategies to child's processing and finishing these routine activities. It is obvious that homework matter in the everyday life of many schoolchildren and interferes with the emotional climate of many families (Safont-Mottay, Oubrayrie-Roussel, & Lescarret, in Deslandes, 2009, p. 95). In the context of motivation to school, learning cannot omit the concept of home preparation, including different types of homework, for instance, the written or project forms of home tasks. We understand home preparation as a form of learning and as a continuation of the child's schooling. This home preparation includes all the activities the pupil performs at home in order to be ready for schooling, that is, activities which have not been directly instructed by the teacher, but they will facilitate the pupil's school work (preparation and checking the supplements, revision, practice) (Jursová, 2011). Schools often consider homework to be self-evident, unconscious and admitting the possibility that this activity often causes problems in the home environment and often interfere in the family life. Therefore, we consider important to address this issue, especially in the field of child motivation to learn as a predictor of school success and learning achievement.

THE STUDY

Homework is a unique academic task administered at school and then conducted at home (Katz, Kaplan, & Buzukashvily, 2011). Homework assignments are influenced by different factors than any other in-school instructional strategy. Child's ability, motivation, and grade level may influence homework's effect. In addition, there is considerable variation in why, when, and how students complete assignments, as well as the home conditions in which the child works on their assignments. There is tremendous variety in its practices, in the type and amount of work assigned, where and when it is completed. Also the factor of the meanings of homework plays the important role (Corno, 1996; Corno & Xu, 2004; Kohn, 2007; Hutchison, 2011, 2012; Farrell & Danby, 2015), with or without parental involvement, and whether or not it is graded by teachers. All of these factors may be linked to the young pupil's attitudes to homework. Critics say it is questionable whether homework, done at the end of a long day when motivation and concentration are low, has any benefits at all (Coutts, 2004). The previous research was focused on the homework influence from the view of parental involvement (Desforjes & Abouchaar, 2003, Epstein, 2011), or the influence on an academic achievement at school was researched (e.g. Cooper, 1989; Walker, Hoover-Dempey, Whetsel, & Green, 2004; Robinson, and Patall, 2008; Dumont, 2011). Overall, assigning homework in early school years is beneficial more for valuable motivational skills it serves to foster in the long term grades (Bempechat, 2004). Some studies of motivational factors in homework focused on the impact on child's academic achievement and study goals (Bempechat, 2004;

Katz, Kaplan, & Buzukashvily, 2011). The parental involvement and quality of parental support affecting the students' emotions during homework were researched by Hoover-Dempsey, Battiato, Walker, Reed, DeJong, Jones (2001); Warton (2001). We focus on the parental strategies in homework with the accent on motivational strategies.

Parental involvement in homework

In the Czech educational environment, the parent's role in the home preparation and parent's involvement in homework is irreplaceable, especially at the beginning of school attendance. In first three school years, the pupils try to learn how to learn, they recognize the meaning of learning (Šulová, 2014). Parent-child interactions during homework are important for the range of attitudes, beliefs, knowledge, skills and behaviour that facilitate learning. Being motivated in the right way is the first step to achieve in homework (Walker, Hoover-Dempsey, Ice, & Whitaker, in Deslandes 2009). Parent's behaviour may be perceived as generally or less supportive of psychological needs. Therefore, parents' influence their children and children also influence their parents' behaviour and educational practices (Figueiredo & Valadão Dias, 2012). A central issue on parent's role in motivation is the individual parenting style and involvement in child's school achievement.

Motivation

In our own work, we have addressed the issue of parent's motivation in homework. Parent's beliefs and motivation to be involved in homework supports the positive atmosphere during homework. Homework has many various effects on student's learning, developing the study and work routines, building positive links between school and home. To improve the success rate of homework completion is necessary to consider that:

- parents have been given to appropriate skills to help support their child at home (Morgan, 2017)
- parents have got the strategies to motivate the child to complete the homework
- parents understand the importance of homework and have the aspirations to goal the child's learning achievement.

The long-term motivation plays a key role in child's lifelong learning, especially at the beginning of school attendance. It is crucial for both teachers and parents, precisely because they create situations in which the child overcomes the short-term motivation. Supporting the child in its achievements, interests and beliefs in the personality transforms this short-term motivation into long-term aspirations for learning a child. The role of parents in home preparation is not straightforward. Parents are responsible not only for the involvement in homework, they are above all the strong initiator that the child is able to deal with all the obstacles or shortcomings together (Franclová, 2013). Parents themselves may be concerned about the increasing amount of learning demands, new changes with graduating years of education and, in the case of failure, with other educational and learning problems. Therefore, parents are the actors in the transfer of his/her own aspirations and motivation for his/her child to achieve the best results not only at school.

The types of motivation

Motivational strategies are differentiated individually and qualitatively in each family. The problem seems to be the parent's negative attitude toward the education of the child and the need to participate in the child's home preparation. The child internalizes the climate of family coexistence, tries to cope with family demands, family morals, interests and goals. The child evaluates his/her speech, performance, and demands to the family in which he/she lives (Helus, 2015). Šulová (2014) puts stress on the positive attitudes to the importance of motivation in child's early school attendance. We recognize external positive motivation (praise, reward), external negative motivation (prohibition of popular activities, dangers, threats or limitations of the child's activity) with tendencies or intentions to get engaged in learning, also indoor motivation (the craving for cognition, after success, the need for social interaction).

Homework can be considered as a reference task for studying the process of volitional child's, the parent's and also the teacher's control (Oettingen, Schrage, & Gollwitzer, in Corno, & Anderman, 2016) and motivation as the energy to pursue the desired future, also the direction that helps to channel this energy. Parental autonomy support is one important avenue of promoting child's autonomous motivation and positive emotions surrounding homework, also a school (Froiland, 2013). The child's motivation should be based on his/her internal needs, not on the basis of incentives and coercion. Effective motivation is seen in a positive approach to learning, stimulating curiosity, desire for knowledge, reward, and relationship with a teacher, while negative motivators are punishments, prohibitions, pressure and conditioning (Šulová, 2014). Parents set rules of behaviour, negotiation, and interactivity during homework. It is the role that instructional parental behaviours play on child's developing motivation (Pasternak, 2014). The strong motive for learning is the sense of success and understanding the meaning of each task. Furthermore, the expectancy of success is considered as the determinant of motivation (Lazarides, Viljaranta, Aunola, Pesu, & Nurmi, 2016). The motivation of pupils is linked to their

emotions. If parents and teachers provide a pleasant atmosphere, peace, and well-being, this leads to an increase in motivation (Šulová, 2014). Only by a constructive attitude to homework can be set the child's positive position for learning, fulfil of consistency, conviction about the importance of studying. An affirmative approach to homework and home preparation certainly affects the family atmosphere eliminating negative moods, disputes, and problems between children and parents. Lokšová & Lokša (1999) describe the main features of the structure of motivation in accent on the monitored topic of the family and its influence on the learning aspirations of elementary school pupils as the activation and purposefulness of behaviour, or the effort to reach the goal, such as will, aspiration, success.

For the purpose of this qualitative research approach, we identified the parents who were considered active and involved in child's home preparation. In the study, the semi-structured interviews were conducted with primary children's parents. Participants consisted of 12 parents (11 female, 1 male) with no family-partners problems or other social or financial difficulties. All of the participant's children were well-being at school or with negligible problems at school. The practical advantage of using the semi-structured interviews is that parents could open the problems, their everyday experience, especially in connection with homework and home preparation for school. Also, the willingness and openness were the factors, which influenced the size of participant sample in a research. The research strategy has tended to focus on parent's motivational strategies in homework involvement rather than on analysing the family background. However, the homework activities were designed as a part of the interviews the questions were focused on the motivational strategies during home preparation.

The interviews with parents were conducted individually in different duration. In order to obtain a data sample, it was necessary to perform a warm-up cycle of questions to remove the initial participant's nervousness. Their openness to the issue is not a matter of course because in most cases the researcher with the participants had no closer relationship or earlier contact. Although a 12-parent sample may seem small, it is not easy to get a relevant picture of the parent's true opinion, attitude, and testimony. All of the participants were with a high or university degree, living in a marriage. Five participants had three children. Other parents had just two children, one of whom was a primary school pupil ranged in age from 7 to 12 years old.

The semi-structured interviews were used for the description parent's motivational strategies during child's homework. The main purpose was to find out and describe the answers to the research questions:

- Which strategies do the parents use to motivate the child do the homework?
- How do the parents describe the positive and negative strategies of motivation?
- What do the parents consider as the most problematic in child's home preparation/homework for school?

The ethical rules of this research have been preserved. Parents in the statements are introduced under the pseudonym letter. Interview questions were constructed so as not to promote preoccupation of a researcher. Through open questions parents fluently talked about their roles in the family environment, relationship with the child and strategies to meet the objectives of home preparation, targeted to homework done by children. Interviews were conducted during four months, each of the interviews spanned approximately 40 minutes in length. As usual in qualitative research, data analysis was an ongoing process throughout transcription, coding and writing processes (McKenna & Millen, 2013).

FINDINGS

In this paper, the results of semi-structured interviews with parents are presented. From the interview codes, we have conducted the categories, dividing into two poles - positive motivation strategies and negative motivation strategies. Firstly, in addition to the research aim, the results show that parents admit that they themselves had to think deeply about "the right strategy" to motivate the child to make the homework more effective. Mother I said: "... but on the other hand, now, say someone is motivated, some are not ... it is questionable what is good, whether to leave or help them ... also chaos is not quite good..."

Parents most often choose strategies in child's home preparation that gradually lead the child to independence from their assistance or help. Participants noted that their endeavour is to keep the child responsible for their own work. On the other hand, parents of children in grades 1 and 2 are convinced that their help with homework is necessary, it is necessary to show the children how to learn and in the course of time, they tend to manage the tasks separately. Mother A asserted: "It's easier for parents to do it and to lead it to independence, and then it's beautiful, but some child does not have the capability at that age, do it alone, but he has to practice it ... The independence is terribly difficult."

Negative motivation - conditional motivation

From the parents' answers follows that children's day is very busy and fulfil not only with school duties but also with after-school activities, music schools or sports activities. This lack of time causes defiance to do homework, children often have little leisure time to spare by themselves. Critics say it is questionable whether homework, done at the end of a long day when motivation and concentration are low, has any benefits at all (Coutts, 2004).

The parent's aspiration to make their children achieve good results at school is obvious. In agreement with (Pospíšilová, 2011), parents with a university degree, like most of our participants, engage in homework because they monitor the educational outcomes of their child and are able adequately to help the child to succeed at school.

Mother Z declared: "Yes, it's the negative motivation, yes, my husband tells her that if she does not get good results at school, we'll take her out of her school to the old one and it works."

Another important construct that has been related to people's emotions and sense of stress is the person's type of motivation for the task (Katz, Buzukashvili, & Feingold, 2012).

Bans, threats

The most common negative parenting motivation strategy has been banning the child from playing a mobile phone, a ban on using the internet or television. However, parents themselves admit that this strategy is not the right strategy, moreover, it is not even motivation. As one mother describes the problematic situation with homework: "...bans are even considered a stress factor in our family. It is the stress of to be banned from a mobile phone. When he brings a comma (typical Czech school punishment for forgotten homework). Means he forgot something. Well, we will disable the computer, the phone will be forbidden for a week. Yeah, he says, but I do not have anything at all, and then in the evening, I remembered now, ...but sometimes he does not remember and gets a comma." Another mother shared the similar negative experience with the conditionality of fulfilling homework by the sons' favorite activity or motivation to accomplish tasks by going for a visit to friends: "They (boys) have the motivation that if you do it, we will go (for a visit), but it does not work each day, then it is not a motivation."

Parental conflicts - Inconsistency of parental strategy

From the response of engaged mother Z, who consider homework as an important task to do every day and confirmed that motivation is the first step to success for her and her children in homework. This mother argued: "It's also the different strategies of parents, and we have a different opinion, sometimes it seems to me that we are only together for that task. My husband does not do anything with them, then he looks after one of the sons for a long time and gets angry at the moment, he screamed the last time everything shuddered, my son wept ..." We found that negative emotions are associated with different parents' approaches to home preparation. From the answers of a mother who is more involved in home preparation than her husband, she is not satisfied with the husband's approach to homework: "Something my husband wants him to do it and he does not know so much because he's not with them all the week, and he's sometimes bad for them, I say, he wants something, you push him for nothing, you leave him, you'll be mad, he'll be angry, you'll be angry. Yelling, waving him somehow, you make it in a wrong way. No, he just says, we need to do it now, it will be."

The child's anger

Mostly all of the participants admit, despite the motivation to do homework, their child gets angry from time to time. Mother L complained: "In home preparation - they have to learn, prepare in the 4th grade, sometimes they do it themselves, sometimes they have to be forced, and occasionally they have a ban (mobile, games, etc.), otherwise without problems. Rather, he leaks out of thoughts, and it takes longer, or it's because he does not want it, sometimes he gets angry, but his husband helps him, he's a little more petulant, but he's trying." Mother E pointed out: "Yeah, he's so angry at everything, we're not gonna come to do it anymore. He's probably such a bad period now." Another mother J added: "And when he can't do it, then he calls me, and I'm angry with him, not to scream at me."

Some parents admit that the days without homework tend to be quieter, without the sense of duty of the day. On the other hand, they recognize that it is right for children to get homework because they are confident in preparing for school. Homework leads children to independence and responsibility and their own work, which can bring habits to their future personal and professional lives. "Mostly it is set up that firstly do your duties and then fun": declared mother S.

Forcing- you have to!

Parent directive instruction (setting goals, giving help, structuring the learning process) without being controlling (criticizing, building up the pressure, making negative remarks) could have more complex effects on student's emotion during homework, depending on students motivation (Knollmann & Wild, 2007). Mother M often tells to her son: "Go - for the first time, the second, the third, the twelfth, and then the mother has a nap, and he's angrily going to do it." Setting the rules basically does not work, parents recede, children try to move borders - the rules are inoperative, and the cycle of problems is constantly being repeated. On the other hand, parents should give the child the opportunity for their own decisions - to generate their own strategies for solving challenges, discussing learning strategies, and avoid the failure (Pasternak, 2014).

Positive motivation

The properly, in time and without negative emotions finished homework is a reward also for the child, who has a leisure time that can be spent on his/her own. Similarly, it is an advantage for the parent who has the opportunity to do other household or their own hobbies. The father O explained the meaning of positive motivation to the homework in time: "Yeah, he can play on Xbox, it's the first one, yeah, you can, do our jobs first (smiling), the reward will be playing on the X-box or going for training or something. Or we change it."

Parent-child relationship

The relationship between parent and a child is connected with the parent's approach to be involved in child's homework. Gonida & Cortina (2014) named different types of parent's practices during homework. Similarly, with our results, the participants preferred the autonomy support and promotion of self-regulation, control, interference, cognitive engagement related to homework. Autonomy-supportive parents promote student motivational development in the form of mastery goals and skills resulting in better school achievement (Gonida & Cortina, 2014).

An interesting note is the parent's remark about the family model. The parent applies patterns of behaviour that she has experienced as a child, knowing that it will also work for her children. In our sample, half of the families were with three children. Naturally, time spent with children in homework has to be divided, the oldest children are already separate, helping younger children with simple homework, or accompanying siblings to school or to the leisure activities. Older siblings can also be motivated by the younger ones - they are an example, successful and have already gained experience that they can pass on to younger siblings. Mother N explained: "I painted it so like this, that the elder will do the job itself, and help the younger. And the youngest one will learn too, we have learned ourselves, I do not know, it was different for us, I expected it to be so."

Forcing the child's beliefs to do it!

The parents' effort to set the ideal conditions for homework is based on the motivation of the child. Excess of monitoring and controlling led children to more negative effects, on the other hand, how researched Katz, Buzukashvili, & Feingold (2012), the students' homework stress measure, as expected, correlated negatively with students' autonomous motivation and positively with students' controlled motivation. Mother N talked about the motivational strategy- to force the child, always to be ready for the praise and help the child as much as she is able to do: "I'm motivating them, yeah ... Always something else, but a reward - like a penny or a coin or something we're going to do, never, in any case, that never happened and there was never a need to reward. It's a compliment to us, you're really good, you are good. If there's something to look for, we do it together, we're looking for it together." Father's role in home preparation differs to the mother's role. Father are most often patient and open for the conversation, as confirmed mother N: "Well, my husband interprets them a lot, as if he talks to them like peers, so they look at him, he tells them, and knows so many things that even before bedtime they still ask, he explains. I have no patience. He does."

The power of school and teacher

Another factor that influences the motivation for learning is the school environment and the teachers' approach to child's ability and competence to succeed. Parents confirm that the great benefit of setting rules and motivational strategies is the quality of the teacher in dealing with the child and with parents. In particular, knowledge of the child, its strengths and strengths helps the child's effectiveness and endeavour to learn, get to know and thus easier to participate in school assignments. One positive experience mother H made note of related idea: "In that new school, the teacher motivates him, gives him additional tasks, he is more satisfied, he is a driving engine ... the teacher gives him more confidence, he wants more, so he can get more out of it, it's better than when someone tells him that he did this wrong."

CONCLUSIONS

The aim of the study was to describe the parent's motivational strategies in child's homework and home preparation. The concluded results shows the tab.1:

POSITIVE MOTIVATION	NEGATIVE MOTIVATION
Parent as a good example	Ban (mobile phone, television)
Praise, reward	The threat of moving to another school
Teacher's pattern	Putting pressure on a child

tab. 1 Strategies of positive and negative motivation

Due to the research methodology and the low number of participants it is not possible to generalize the results to a larger population sample. Moreover, the results are merely the specific views on selected issues with homework in ordinary Czech families. Although parenting is considered to be a matter of course, almost everyday routine, many stressful situations, disputes, or inconsistencies between parents and children arise during homework, requiring consistent and strategic motivation. Motivational factor, especially those positive, have an impact on the child's learning efforts to master homework without any precondition, prohibition, and disagreement with parents.

In agreement with Froiland (2013) parent's response in a positive way to the intervention, such as their children enjoying homework, becoming more over time, and initiating homework without a power struggle. On the other hand, children expect and need to know that their parents believe in their abilities, knowledge, foster and motivate them for the future educational aspiration and academic goals.

We also consider important to pay attention to the importance of parents and their motivational strategies for fulfilling home tasks by the child. Both by the parents' view and from the teacher's perspective, who subsequently teach children in schools, try to help their educational outcomes and communicate with the family as a source of information and partners with the common child's school goals.

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Multi-Dimensional Expansion of Algo-Rythmics

Erika OSZTIÁ

*Department of Mathematics and Informatics
Sapientia University
Romania
osztian@ms.sapientia.ro*

Zoltán KÁTAI

*Department of Mathematics and Informatics
Sapientia University
Romania
katai@ms.sapientia.ro*

Géza-Károly VEKOV

*Department of Mathematics and Informatics
Sapientia University
Romania
vgeza@ms.sapientia.ro*

ABSTRACT

In our paper we present the introduction of three new concepts in the AlgoRythmics project (<http://algo-rythmics.ms.sapientia.ro>). With the introduction of new theoretical, visual and cultural approaches we are increasing the impact of our method in the process of promoting algorithmic thinking. The theoretical element consists in expanding the knowledge base currently containing sorting algorithms with two searching algorithms. Visualization elements are upgraded in the dance performances, using not only linear array structures but also tree representations of arrays, e.g. heap-sorting algorithm of an array. The folk-dances used, which are specific to different Eastern European ethnical communities are extended with flamenco, which has its origins in Southern Spanish folk dance.

OVERVIEW OF THE ALGO-RYTHMICS PROJECT

Main Concepts

The reason behind starting the AlgoRythmics project was to build a multi-sensorial platform for promoting computational (CT) and algorithmic thinking (AT). We will quote from the article that presents the timeline of the project:

“In [...] we focused on how dance can be involved in informatics education (sorting algorithms). The method takes additional multi-sensory elements into the programming-education through arts (dance, music, rhythm, theatrical role-playing). Combining these art forms teachers could create a multi-sensory learning environment that involves almost all the senses: visual, auditory, kinaesthetic and tactile. We invited students who like dancing to collaborate on our project. Each played the roles of the numbers from a sequence to be sorted, each of them wearing the corresponding number on their clothes. The accompanying music pieces were composed on the basis of Michael Flatley’s music. Consulting with the eurhythmics teacher of the faculty we chose real dance-steps for comparing and swapping operations. Once these dance-performances were videotaped we added further graphical elements to the records in order to emphasize that the dancer-numbers are stored in an array, and to highlight the dancer-pair in the focus [...]”. “In [...] we particularly focused on multicultural content integration in informatics education, through art-based pedagogical tools. We initiated collaboration with a professional art institution, and utilised Romanian, Hungarian, German and Gipsy folk-dance choreographies (to illustrate the cultural diversity in Transylvania, Romania) in order to illustrate different sorting algorithms. The fruits of this collaboration are art-science productions that equally promote multiculturalism and informatics education. In order to test the potential that “algorithmic dances” have for promoting intercultural informatics education, we posted them on the YouTube website. Users’ reactions confirmed our expectations. (<http://www.youtube.com/algorythmics>)” “In [...] we presented experimental results revealing that properly calibrated learning tools can effectively promote the algorithmic thinking of both science-oriented and humanities-oriented students. The e-learning environment we developed had been designed to introduce students to the mini-world of sorting algorithms (bubble-sort, insertion-sort, selection-sort, shell-sort, quick-sort and merge-sort). The software tool generates a five-phase learning experience: the algorithm is visualized by a videotaped “sequence of folk dancers” wearing the numbers to be sorted on their clothes (1); the algorithm is animated on a white-box array (storing the number-sequence) (2); followed student reconstructed (3) and orchestrated (4) animations; students are then invited to orchestrate the studied sorting algorithm on a black-box array (being informed about the results of the comparison operations) (5). The application provides an excellent opportunity for a gentle introduction to several algorithm related concepts

(best, worst and average case, algorithm complexity, etc).”(Katai, 2014b).

As an official acknowledgement the website of Informatics Europe states: “The evaluation committee praised the originality of the proposal by Zoltan Katai, Laszlo Toth and Alpar Karoly Adorjani: Multi-Sensory Informatics Education. Mixing algorithms learning with sensory experience is a very innovative teaching experiment. The key concept of this proposal is Computer Science education for all, using a creative approach. The committee was impressed and appreciated this approach of abstracting away almost all details that might hinder understanding the idea or principle of an algorithm or a paradigm. The enactments thus not only can be used flexibly in teaching environments irrespective of a particular programming- or spoken-language but can be used as a starting point for the teacher to drill down into more technical concepts. Another particularity of the project is its intercultural character – sorting algorithms illustrated by Central European folk dancing” (Informatics Europe, 2013). The project was awarded with the “2013 Best Practices in Education Award” (Informatics Europe, 2013).

Online Platform

The platform mentioned in the previous section is online, and can be accessed via <http://algo-rythmics.ms.sapientia.ro/>.

Measurements

The following measurements were made on the Youtube platform of the AlgoRythmics channel, taking every dance view in consideration. Since the beginning of the project the most successful algorithm visualizations are the quick sort algorithm (1,197,107 views) and the bubble-sort algorithm (1,244.693 views), but the overall view count is 4,269,180. After the initial period the monthly view count has been normalizing, (Figure 1) is showing that there is a relatively constant average view rate of the uploaded algorithms/dances around 8,117 views per month. The lowest values are every year in the summer (July, August), during holidays, and the highest values are located in the winter/spring exam sessions (November, May).

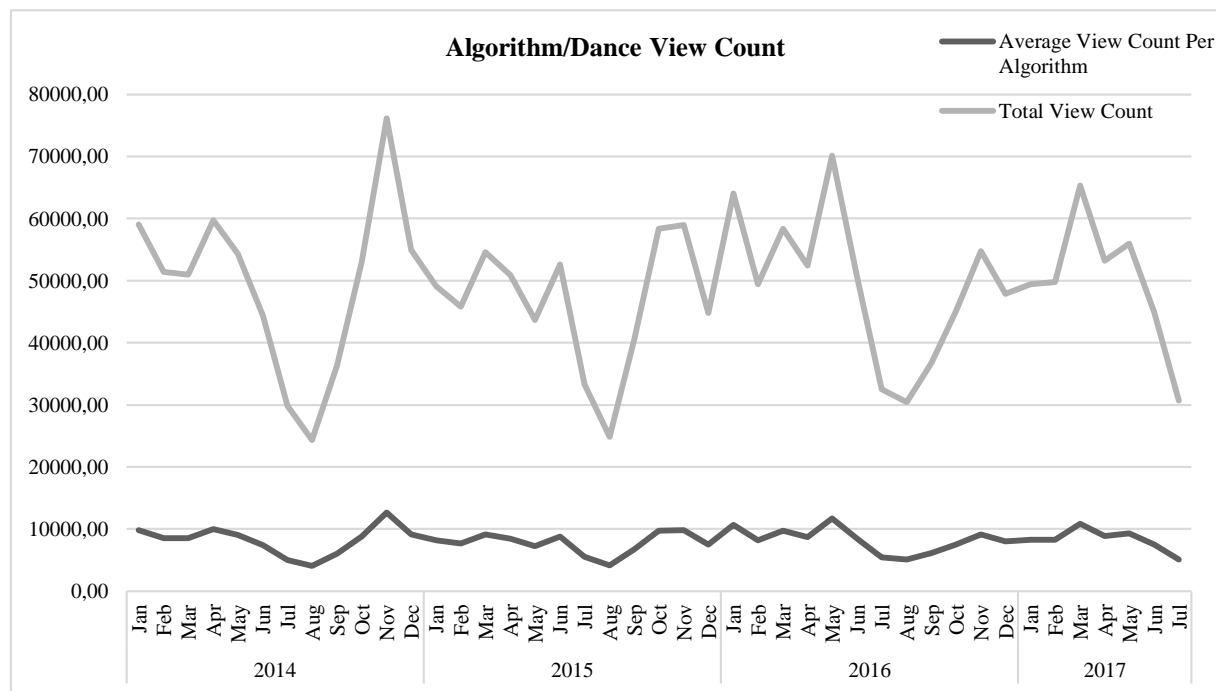


Figure 1. Algorithm/Dance View Count

Although it is constant, the overall view rate is in a slight descent, which can be explained with the age and style of the uploaded media, and the growing number of other aiding visualization materials present on the internet. The average view percentage of the uploaded media is shown in (Figure 2). We can see, that the average viewing time of the content is about 41.42%. Considering that every dance presented has an artistically executed closing part too (~19.36%/dance), the average viewing percentage of the actual algorithm is about 50.1%. We can observe, that the actual viewing time percentage is in descent.

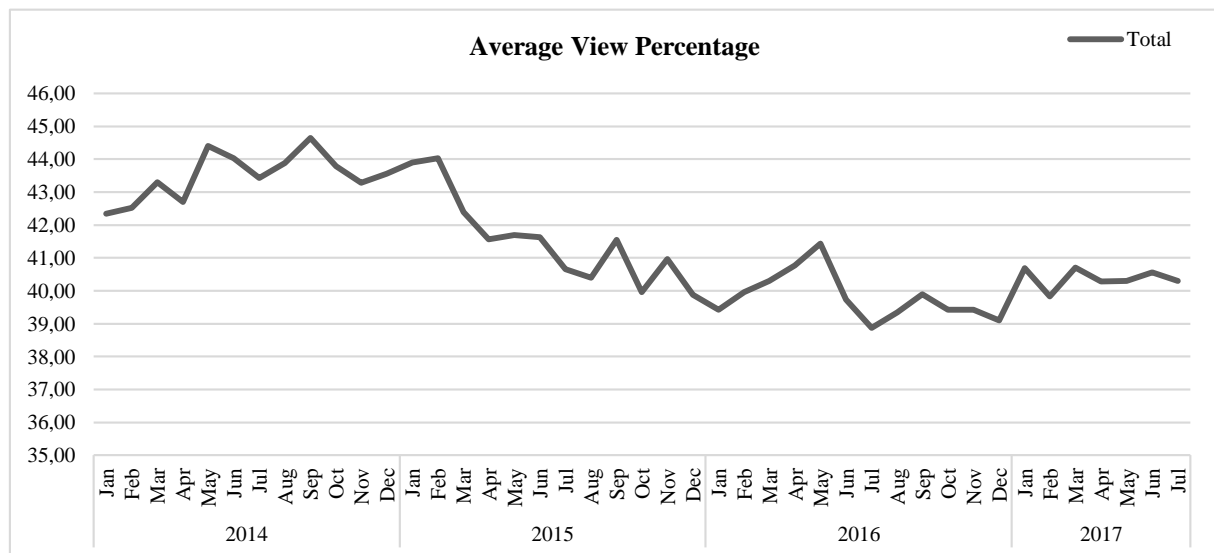


Figure 2. Average View Percentage

EXPANDING ALGO-RYTHMICS

Overviewing to this date the results and comments of the AlgoRythmics project we can see, that there is a sustained trend of using it. We had several feedbacks targeting the development of the specific view through art of AT. The success is visible on the graphs presented above.

Three dimensions have been identified by which the expansion took place. These are following the main concepts of the original idea: promoting AT with multi-sensorial and multi-cultural tools.

1D view to 2D view

When starting the project, four known $O(n^2)$ time complexity sorting algorithms were implemented: bubble sort, insert sort, select sort and shell sort. These have easily comprehensible linear visualizations. The change of the array containing the numbers is visible after each step and the sorting process is performed in a linear manner.

The quick sort and merge sort implementations are somewhat harder to visualize, and it needs more dance views, to find the correct algorithm. Even I Programmer experts claimed that the quicksort algorithm can't be done using folk dances, and even with modern dances it would be a challenge to solve the visualization (I Programmer, 2011). These two sorts in average case have $O(n \log n)$ time complexity, and are considered more optimal than the first four in case of sorting random data. The programming technique used for the quick- and merge sorting algorithms is the so called "divide and conquer": decompose the original array, sort the simpler series, and then combine back the results into a sorted array. The decomposition and the sub-problem solving suggest that these are linearly viewable, as a tree structure is built and traversed depth-first in the sorting process. Although this is true, the visualization of the algorithms is permissive, even if one might not see the solution tree, the method is perfectly understandable from the dance.

There are numerous algorithms, where the array is only the carrier of the series. In the solving process a complex structure is used, which must be seen and understood in order to understand the algorithm. Based on optimality and user requests, we chose the heap sort, which is sorting in $O(n \log n)$ time complexity. The data structure used is the heap, a nearly complete binary tree, where each internal node has a greater (max-heap) or smaller (min-heap) value than any of its children (Cormen, 2009). The array can be "transformed" into a binary tree using the formula: the first element of the array is the root, the child nodes of every internal node i are located (if they exist) in the array at the $[2i]$ and $[2i+1]$ positions. When programming this method, the translation of the array positions into binary tree nodes is straightforward with the given formula. But to present the algorithm for non-programmers one needs a more complex visualization. This suggested the idea of shifting the dances from forward facing view into an upper viewing angle (Figure 3, Figure 4).



Figure 3. Bubble sort



Figure 4. Heap sort

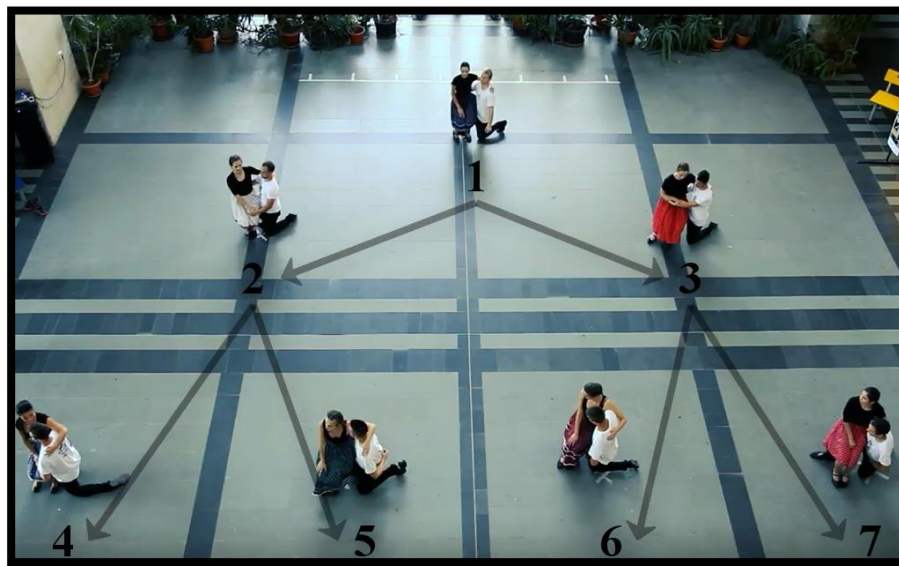


Figure 5. Heap sorting is complete, every couple is on its final place

The starting position of the dancers is in the top of the picture, they are representing the array storing the numbers. The initialization of the sorting is the direct transformation of the array into the heap, starting with couple (2) as the root of the tree, then every couple is dancing one after the other towards their place in the heap. Afterwards we set up the heap property for every node. This can be achieved by comparing the two child elements of the internal nodes between each other, choosing the greater/smaller one, and then comparing it with the parent, and switching them by need. From this moment on the sorting algorithm can be seen as it is: the root couple represents the largest element present in the tree (heap property), switch them with the last leaf of the tree, so they get to their final place, “take them out” of the active structure, restore the heap property of the remaining elements, and repeat these steps until the tree has only one element. After completing the algorithm, the dancers are in the correct order in the tree (Figure 5).

To restore the array, the couples will dance back into their corresponding place in the array.

The dance the couples are dancing is the “kalotaszegi” Hungarian folk dance from Transylvania, and, as an addition to the project this is the first algorithm performed with paired dancing.

The upper viewing angle allows the person watching this demonstration to follow the buildup and the change of

the tree, the comparisons, the switches, the cutback of the tree (couples kneeling down) as the numbers reach their final location and finally the restoration into the array form. In our opinion this sorting algorithm is much more understandable in this 2D view as it were with the previous visualization style.

Cultural expansion

Based on the large number of foreign views (other regions than Transylvania), we decided to internationalize the music and the choreography of the demonstrative dances. This way a new style was introduced, where algorithm visualizations make use of the rhythm and style of the well-known southern Spanish flamenco. It can be considered that there was a dual change as flamenco is not exactly a folk dance, and it is from a different region. As until now, the choreographies are performed by professional dancers.

Expanding algorithm knowledge base

As sorting algorithms are covered by the previous project components, the next expansion dimension is in the direction of another very commonly used and easily understandable algorithm family, the searching algorithms. We considered that as the sorting methods were built from easy to hard, the searching algorithms should follow the same pattern. In both of the visualizations numbers are not seen by the participants, which on one hand increases the credibility of the performance, on the other hand kindly forces the spectator to close on to the “blind computer”, i.e. not to skip steps in the algorithm, because of the obvious answer (Kátai, 2014a).

Linear or sequential searching is a commonly used method as the most straightforward way to find an element in an array for beginners. It is also used to teach loops, iterating over all elements of a series, exiting the loop on a given condition, in this case when the searched element is found or on reaching the end of the array. It's time complexity is $O(n)$. The performed dance, which illustrates the algorithm is flamenco, using primarily the specifically choreographed colorful and rich dancing style of each artist. The central figure is the dancer representing the number one is searching for, while the others are representing a number series to search. The choreography was designed so that every number has different figures to dance, but the identical ones. During each step the next number is matched (=) against the one searched. If the dancing style differs between the two artists, then it isn't a match. When the same dancing style is found the algorithm stops, while the number is identified in the series (Figure 6).



Figure 6. Linear search with flamenco

Binary searching, also known as the method with which one searches in a dictionary or in a phone book, is a widely used general searching algorithm known for finding an element of an ordered array. It consists of matching the searched element against the middle element of the series. If they are identical, it stops, else it shrinks the search space to the first or second half of the original array, based on the comparison made, and starts over. The dance

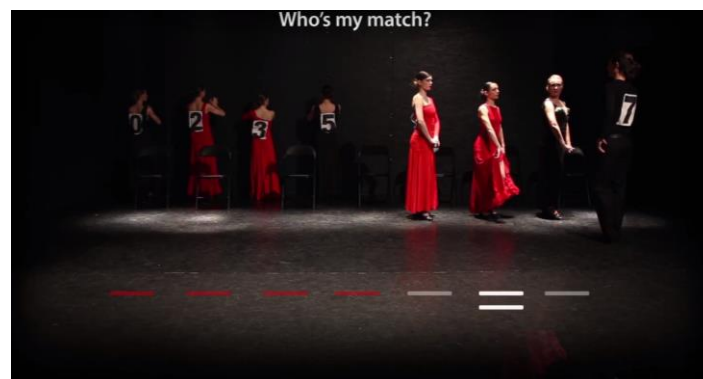


Figure 7. Binary search with flamenco

used to visualize the steps is also flamenco, like in the case of the linear search, but this time the matching criteria is given by the rich rhythm of the dance. The smaller the number, the slower the dance, and the bigger the number, the faster the moves of the dancer. In case of two identical numbers, the rhythm of the moves of the two artists are exactly the same, even if the moves differ. Like in the case of the linear search, the central figure represents the number one is searching for, and the ordered array is composed of other dancers. When the series is halved, only dancers from the active half of the remaining array are illuminated, illustrating, that searching space is reduced (Figure 7).

CONCLUSIONS

In this study we have presented a three-way expansion of the original AlgoRhythmics project.

Using the more intuitive 2D visualization in the case of the heap sort, we hope that it opens new directions of development. The measurements regarding its viewing and the feedback will be gathered and analyzed over time, but we are confident, that the illustration brings better understanding to the specified algorithm for those using this method on initiation in AT.

Implementing an algorithm with the special touch of flamenco represents a milestone in the project's lifecycle, in our point of view it brings new perspective to it. We are also researching the implementation using other various dance styles.

The knowledge base extension broadens the usability of our material. After understanding the different sorting algorithms, one can also try to familiarize with searching algorithms. In our opinion this was the next algorithm-family that needed to appear in this project.

The integration of these new materials in the AlgoRhythmics's home page is now a work in progress, as is the backtracking search algorithm's implementation.

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Multiple Drug Use in Elderly and Responsibilities of Nurses

Didem SARIMEHMET

*Vocational School of Health Sciences
Karadeniz Teknik University, Turkey
didemsarimehmet@ktu.edu.tr*

Sevilay HİNTİSTAN

*Health Sciences Faculty
Karadeniz Teknik University, Turkey
sevilayhindistan@gmail.com*

Nurhan GÜMRÜKÇÜOĞLU

*Vocational School of Health Sciences
Karadeniz Teknik University, Turkey
ngumrukcuoglu@ktu.edu.tr*

ABSTRACT

The ratio of the elderly population, as determined by the World Health Organization (WHO) "65 years and over", was raised in the total population in line with the factors such as the development of economic and socio-cultural conditions, the decrease of the birth rate and the utilization of modern medical facilities, and is still increasing day by day. Therefore, aging of the population is numerically and proportionally one of the most important demographic events in the 21st century.

As the organ functions decrease with aging, the number of chronic diseases start to increase. The increase of chronic diseases in the elderly also increases the need for health care services and the amount of drug use. Drug related side effects and intoxications are common in elderly people due to changes in metabolism and excretion caused by aging, changes in drug use, drug interactions, changes in pharmacokinetics and pharmacodynamics of drugs and cognitive problems such as dementia and comprehension. Multiple drug use and inappropriate usage habits of the elderly decrease the quality of life and increase the risk of drug related morbidity and mortality. Moreover, the use of more than one drug in elderly complicates the treatment, increases the cost, and poses a problem in terms of health-social security systems.

Physicians, nurses and all health professionals have responsibilities in the management of the disease, drug treatment and care of the elderly with chronic disease and multiple drug use. Nurses have important responsibilities and roles such as having knowledge about the pharmacodynamic and pharmacokinetic changes seen in the elderly, giving health education to the patient and the family in order to provide adaptation to drugs used by the elderly and making the necessary follow-up for drug related side effects. While giving care to the elderly individual, the physical, psychological and social changes that develop in the elderly should be taken into consideration; and it should be ensured that these changes are observed and that the elderly is in harmony with the new situation caused by these changes.

Key words: Elderly, Drug, Drug Use, Nursing

INTRODUCTION

Old age is a process that should be evaluated with its physical, psychological and social dimensions. While physiological dimension expresses the changes seen with age; psychological dimension refers to the individual's changes of compliance capacity in terms of perception, learning, psychomotor, problem solving and personality characteristics, as the age progresses. As for the social dimension, old age refers to behaviors expected from a certain age group in a society and the value that society gives to this class (Beğer & Yavuzer, 2012). The increase of the length of life expectancy and the decrease in the fertility rate has caused significant changes in the composition of population. The share of the elderly population, as determined by the World Health Organization (WHO) "65 years of age and over", constitutes 8.5% of the world's population and continues to increase rapidly [WHO], (2015). In Turkey, the elderly population is 6.495.239 according to 2015 data, and constitutes 8.2% of the total population. Turkey Statistical Institute estimates that the life expectancy in Turkey is 80.7 years for women and 75.3 years for men in 2015; and that this ratio will increase by 10.2% for men and women in 2023 [TUIK], (2016).

Many systems in the organism are being affected by aging; thereby cell, tissue, organ and system functions begin to slow down and deteriorate. Due to these changes, the body's resistance to diseases attenuate; and therefore the number of chronic diseases increases (Tiftik, Kayış, Inanır, 2012; Marengoni, Winblad, Karp, Fratiglioni, 2008; Pehlivan & Karadakovan, 2013). It is reported that 70-90% of the elderly population have one or more chronic diseases (Unsal, Demir, Ozkan and Aslan, 2011; Kısa, 2012).

The need for healthcare services and the use of multiple drugs are also increasing in line of the prevalence of chronic disease in the elderly. Although there is no consensus on the definition of "Polypharmacy", which is accounting for multiple drug use in the elderly; it refers the use of multiple drugs for multiple indications at the same time (Wyles & Rehman, 2005). However, there are many different definitions of polypharmacy in literature. These definitions include: (Veehof, Steward, Haaijer-Ruskamp, Jong 2000; Bjerrum, Sogaard, Hallas, Kragstrup, 1998; Linjakumpu et al., 2002; Assembly, 2005).

- combination of two or more drugs for at least 240 days,
- combination of two or more drugs,
- combination of four or more drugs, as stated by National Service Framework (NSF),
- combination of five or more drugs.

In elderly individuals, there are various changes affecting the pharmacokinetics and pharmacodynamics of drugs; and cognitive problems such as dementia and misunderstanding This causes deterioration in compliance to drug use in the elderly and increases the incidence of drug related side effects and intoxications. Drug related side effects in elderly are reported to be 3-7 times higher than in adolescents (Shi & Klotz 2011).

Nurses are the main source of information and contact for patients. The main responsibility of nurses in drug use is to have knowledge about pharmacodynamic and pharmacokinetic changes, and the effect of aging on the organism. The nurse should know the effects and side effects of the drug used by the elderly person, give health education to patient and family about the subject and make necessary follow-up. The nurse should monitor the elderly person about the drug related side effects, take into consideration that there is a change in response and in side effects of drugs in old age, and be aware of intoxication symptoms and drugs that cause intoxication in the elderly group (Unsal et al., 2011, Pehlivan & Karadakovan, 2013).

Multi-Drug Use in the Elderly

A drug is a chemical or herbal substance that is able to manage the disease by controlling the effect of the disease on the body, stopping the symptoms, relieving pain, or preventing the disease. Chronic diseases, which occur due to old age, are accompanied by long-term and multiple drug use (Kim, Shin Kim, Park, 2014). As elderly people are both old aged and have one or more chronic disease, their drug use ratio is increasing. In developed countries, it is reported that the drug use ratio increases with age; and elderly people use at least three drugs, while in developing countries 85-90% of elderly individuals using at least one drug daily (Veena, Padma, Devma, 2012). In a study conducted by Unsal and his colleagues, it was found that 81.7% of the elderly had at least one chronic disease; and that 75.9% of them were using prescribed drugs, 7.9% were not prescribed, 5.6% were using both prescribed and non-prescribed drugs, and 11.1% were not taking any drugs (Unsal et al, 2011). In a study with a mean age of 71.4, which was conducted in the US-Mexico border area, it was found that 72.4% of the elderly were using five or more drugs and that 46.2% of those were under risk of drug-drug interactions (Loya, González-Stuart, Rivera, 2008). In another study in USA, which enrolled 3005 people, Qato and their friends found that 29% of individuals aged 75-85 years were using at least five or more drugs; 81% of them have used at least one prescribed drug, and 46% of elderly people using prescribed drugs have also used non-prescribed drugs. (Qato et al, 2008).

Pharmacokinetic Factors Affecting Drug Pharmacology in Elderly

The path followed by a drug on the body consists of four steps; named as absorption, distribution, metabolism and excretion (Unsal et al., 2011; Erdinçler, 2010; Ozer et al., 2009).

Absorption: Alterations in the digestive system along with aging (decrease in gastric acid secretion and motility), concomitant diseases (motility change due to heart failure, prolongation of gastric emptying time due to diabetes), and concomitant use of drugs (antacids, proton pump inhibitors) affect drug absorption.

Distribution: As a result of changes in body composition (volume of body water is reduced by 15%, total fat percentage is increased by 30%), the distribution volume of water-soluble drugs decreases; whereas the distribution volume of fat-soluble drugs increases. The amount of albumin, an important plasma protein for the transportation of drugs, is reduced in the elderly due to chronic diseases, impaired liver function and malnutrition; so the amount of free forms of drugs are increased by 200-300%.

Metabolism: The liver is a system in which toxic substances and drugs in the organism are metabolized and rendered harmless, and the blood supply is high due to its vital functions. Along with age; the liver's mass, its blood supply and removal capacity of toxic substances is reduced. Because of the changes of body composition at older ages, the total amount of water in the organism decreases; while the amount of fat increases. While the distribution of water-soluble drugs in the elderly group is reduced due to changes in the amount of water and fat, the duration of action of fat-soluble drugs increases.

Excretion: Decrease in muscle mass along with aging reduces daily creatine production. Therefore, serum creatinine is not always a good indicator for evaluation of kidney function in old age. If creatinine is <30 ml/min in the elderly, the drug dose should be reduced by 50-60% or the dose interval should be increased by 2-3 fold.

Multidrug Related Side Effects in the Elderly

An unexpected and harmful effect that occurs when a drug is used at normal doses or for therapeutic purposes is referred as "drug related side effect" (Kim et al., 2014; Erdinçler, 2010; Unsal et al., 2011; Erdinçler, 2010; Ozer & Özdemir, 2010). Multidrug related side effects in the elderly are common; due to drug-drug interactions because of multiple drug use, changes in the pharmacokinetics and pharmacodynamics of the drugs and cognitive problems such as dementia and misunderstanding, and are two to three times more frequent than in adolescents (Unsal et al., 2011; Erdinçler, 2010; Ozer & Ozdemir, 2009). It is indicated that the free multimeric drug in the circulation is increased due to the prolongation of elimination half-life in old age, and that drug related side effects and toxicity occur more frequently. The synthesis of vitamin K-dependent clotting factors has decreased in the elderly; therefore, sensitivity to anticoagulant drugs increases and bleeding occurs (Erdinçler, 2010). The hospitalization rates due to multiple drug related side effects are also increased in the elderly (Kim et al., 2014). Multidrug related side effects in the ages cover a wide range from mild concentration failure to serious drug intoxications (Ozer & Özdemir, 2009; Kim et al.;2014, Erdinçler, 2010). The most common multidrug related side effects in the elderly are depression, confusion, restlessness, delirium, falling, memory loss, incontinence and arrhythmia. Central nervous system depressants, analgesics, antibiotics, anticoagulants and antihypertensive drugs are known to produce side effects most frequently (Ozer & Ozdemir, 2009; Erdinçler, 2010; Onar & Kapucu, 2010).

Compliance to Multidrug Treatment in the Elderly

Compliance to multidrug therapy is defined as "the degree to which an individual's behavior overlaps with medical recommendations". This definition covers not only pharmacological treatment compliance, but also compliance with other treatment-related factors (willingness to initiate treatment, adherence to treatment plan, adherence to treatment appointments, etc.). Compliance to treatment is considered to be a factor that affects prognosis and a decreases the cost of treatment. Correct application of multidrug therapy and compliance with medication are the criteria for success of medical treatment (Ahmad et al., 2014). Noncompliance with drug therapy in the elderly ranges from 21 to 55%. The reasons for discordance among the elderly in multidrug treatment are; factors such as excessive number of drugs, forgetting to take the drugs, not taking the drugs due to side effects and increased sensitivity to drugs. Noncompliance to drugs is more common in elderly people who take three or more drugs, use more than one physician's prescription, and live alone. Multiple drugs taken by the elderly could be used at very high/very low doses, at wrong times or could be completely forgotten. Complex treatment regimens, taking three or more drugs within a day, overdose of drugs, visional and auditional problems and especially regression in cognitive and sensory functions make it difficult to the elderly to adopt to treatment (Ozer & Ozdemir, 2009; Erdinçler, 2010; Ahmada et al, 2014 ; Onar & Kapucu, 2010). Correct application of multidrug therapy and compliance to treatment in the elderly is the basis for success of medical treatment (Ahmad A et al., 2014).

The role of the nurse in the use of multiple drugs for the elderly

Nurses are the main source of information and contacts, especially for elderly individuals. Having knowledge about the multiple drugs used by elderly people and teaching them how to use these drugs is a basic responsibility of the nursing in elderly care. The nurses who are able to recognize the elderly person and their environment have the opportunity to prevent mistakes made in using of multiple drugs in elderly individuals, to recognize these mistakes early and to take necessary precautions. Thus, problems related to misuse of drugs in elderly individuals can be reduced/prevented (Solmaz & Akın, 2009).

The nurse should know the effects and side effects of multiple drugs used by the elderly. The nurse should inform the elderly about the drug they are using and inform the elderly about their own health condition and the effects of the drug. The nurse is also responsible for the elderly to use their medication properly and correct their mistakes (difficulty/inability to remember when drugs will be taken and intentionally/ unintentionally misuse of drugs etc.) in drug use (Kaya, 2009; Ozer & Ozdemir, 2009).

An important factor to support treatment and care in the holistic approach to the elderly is the provision of the elderly to perform self-medication and care. For this reason, it is important to control nursing interventions to improve self-medication by defining the treatment and care needs of the elderly. Therefore, health education should be planned by the nurses to increase the elderlies compliance to drug use (Onar & Kapucu, 2010).

Nurses in multidrug use of the elderly should;

- provide simple, clear and precise information on the names, intended use and forms, doses, effects and side effects of drugs used by the elderly, by considering the individual characteristics of the elderly, verbally and in writing;
- convince the elderly individual of the benefits and the need of the drugs they use;

- teach the elderly individual the correct action principles in drug treatment; such as the right drug, right time, correct dose, correct path and correct affect;
- prepare a table for the elderly individual in which the name of the drug, the dose and timing are indicated;
- ensure that the drug and light source is at the appropriate distance from where the elderly sits/sleeps, by paying attention to the vision problems of the elderly who prepare their own drugs or living alone;
- provide a card with information on the names, doses and timing of the drugs used by the elderly person;
- inform the elderly person on keeping their drugs in the right place;
- inform the elderly person that they should not use drugs with the recommendation of their friend/relative and regularly evaluate the elderly's drug use;
- check the drug compliance of the elderly with certain intervals. (Unsal et al., 2011; Ozer & Ozdemir, 2009; Kaya, 2009; Onar & Kapucu, 2010; Solmaz & Akın, 2009).

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Museum-Based Education as A Part of School Education

Kinga Anna GAJDA

Institute of European Studies,

Jagiellonian University

POLAND

Kinga.gajda@uj.edu.pl

ABSTRACT

The aim of the paper is to present the results of the research project titled: Regional or trans-regional cultural education using the example of museums. In the frame of the project there were prepared: Qualitative and quantitative analysis of the level of schools' use of museum programs in the period 2010-2015; Qualitative and quantitative analysis of interprovincial co-operation between schools and cultural institutions; interviewed and questionnaires. That was a research materials. Informal education may include classes that use visual culture - museum lessons. The paper will examine what range of programs is offered schools by the museums. On the basis of the conducted analysis, the paper will verify what kind of education is museum-based education programs addressing the schools are directly coincided. The paper answers the question is the museum-based education the part of school education, the teaching parallel or a separate category of teaching.

Key words: Culture, Education, Museum,

INTRODUCTION

Museum education is accompanied by a change in the perception of the principles of education and, as many experts in the field of contemporary pedagogy say, the loss of monopoly of knowledge by schools. The school has ceased to be the only, and even the primary center of learning. The function of teaching is taken over by various cultural institutions - museums, art galleries, cinemas, theaters, cultural houses etc. According to the authors of the study titled, *Educational strategies implemented in science centers, experimental laboratories and interactive museums* conducted in 2007-2009 on behalf of the Ministry of Science and Higher Education, referring to the *OECD 2011 study*, the total number of school hours for pupils aged seven to fourteen in Poland is drastically smaller than in other European countries, giving rise to the need for additional didactic activities outside of school (Karwasz, Kruk, 2012). In addition, the school is treated as a base, providing a core curriculum, preparing for tests, but does not believe in its developmental function. The school is curriculum-oriented but does not shape. Grzegorz Karwasz and Jolanta Kruk also point to the lower level of teaching in Poland, which leads to teaching gaps. And emphasizing that "it is unrealistic that teaching gaps, not only in mathematical and natural subjects, be filled in by the school's own actions. They do not allow significant teaching loads resulting from the shortening of the teaching syllabus, the lability of the content of teaching in the context of constant program changes, the numerous organizational obligations that lie on the school and the requirements for the continuous training of the teaching staff. Help should be sought in complementary and supportive activities of non-school institutions." (Karwasz, Kruk, 2012, p. 32) In the Polish education system, as indicated by the numerous studies, the soft competences of the participants are not raised in the teaching process. Besides, as the authors of the *Ideas and realization of an interactive education* report continue, "diverse elements - the lack of compulsory pre-school education, the weakness of early school education and the progressive virtualization of teaching content - create a serious gap in proper intellectual and emotional development. Children and adolescents are beginning to lack practical experience in the process of gaining and consolidating knowledge." (Karwasz, Kruk, 2012, p. 42)

Moreover, the school is not an institution of social trust. On the contrary, its lack - parents are keen to control teachers, believe that they have the right to decide how to teach, negatively comment on any behavior of the teacher. They impose their way of thinking; expect that they will be treated as co-creators of everyday life, forgetting that they have neither the knowledge nor the skills. And that they do not defend the level of education, but instead, try to manipulate school life to be able to control their children more fully. Such behavior is also accompanied by the decline of the prestige of the role undertaken by the teacher. Parents allow themselves to evaluate teaching methods, the program, and the teachers with the pupils, without constructing a respectful attitude towards the teacher. Increasingly, school education is

considered compulsory, developmental, and raising competencies is described as extracurricular education, informal. A recommendation, that is not strictly about museum education, but certainly about education, is self-evident - parents should limit their ability to intervene in school life. They should not believe that they can control the school and feel that it is another area of their child's education. They should focus on raising a child at home. The responsibility for educating pupils from home to school and home-school or pseudo-educational institutions is not to serve either for the development of pupils or the level of their knowledge and the development of their competence. Another recommendation that is related to the above is the suggested change in the education system - not to introduce a new division of teaching but to change teaching system that is directed toward a test-based system, to teach understanding, interpreting, and sharing responsibility for the world. In modern education, it also places itself on self-education and is a trend worthy of imitation. It would only need to elevate the prestige of knowledge, show young people that knowledge is the key to self-realization. As Karwasz and Raven point out the problems of the contemporary cultural system in the world, which include lowering the role of formal teaching in favor of other channels of information: "The school therefore ceases to be the only source of knowledge, especially in the early stages of teaching. Sightseeing, nature, popular science provides very detailed knowledge even at preschool age. The teacher is increasingly struggling to attract new learners with new content and teaching methods. Hence, his authority is easily eroded, and cases of reprehensible behavior become more and more common at different stages of teaching. On the other hand, the interaction of children from birth with television and the virtual world of computer events result in a loss of sense of reality. Hence, it is difficult to achieve the expected teaching effectiveness by means of a traditional textbook, even richly illustrated and using multimedia. And they continue, "These diverse elements - the lack of compulsory pre-school education, the weakness of early school education, and the progressive virtualization of teaching content - create a serious gap in intellectual and emotional development. Children and adolescents are beginning to lack practical experience in the process of gaining and consolidating knowledge"(Karwasz, Kruk, 2012, p. 41-21).

METHODOLOGY

In the project there were used qualitative methods, which, according to Mieczyslaw Łobocki who deals with pedagogical methods - in contrast to quantitative methods – are characterized by the fact that they relate to the description and analysis of the studied phenomena without resorting to any means of measurement. There were organized study visits in order to perform queries and interviews with staff from internal department /division of education, managers, educators (some museums still do not have a department dealing with education), or museum management. In some cases, what took place was only an individual conversation with one person, sometimes a collective of several people from the department at the same time . As noted by Łobocki: "A considerable role in educational research meet (...) conversation and interview. Cognitive value of these methods is undoubtedly higher than (...) surveys and questionnaires. (...) Conversation and interview methods are more complex, also requiring - in addition to asking questions - a considerable personal commitment and sometimes subtle approach to the subjects." (Łobocki, 1978, p. 286) He further writes: "Conversation and interview as the research methods are not ways to communicate that take place every day (...). They represent respectively oriented process of interaction, relies on the free exchange of verbal expression between the person conducting the interview with the targeted subject, or informing about the targeted subject. " (Łobocki, 1978, p. 286) Observations made by the researcher became the keynote of this part of the study. The conversation was conducted in a transparent manner, and therefore informed the respondent of the primary aim to establish mutual contact. Their answers were subsequently recorded in an precise manner. During the preliminary interview, and then in-depth interview, or rather an in-depth conversation - and since then direct contact with the person who represents the focal point of the research was established, rather than, as in the case of establishing direct contact with people serve as intermediaries who only inform about the individuals about the research targets-, particular care was taken to ensure that all chat functions of the interview have been preserved. Therefore, attention was paid to compliance with regards to the exact statement uttered by the subject, ensuring that expression of what actually they wanted to convey (communication function) was preserved, while assuming the sincerity of expression (expressive function) and the cognitive value of the information received (function information). Then there were made CAWI survey among museum educators invited to the project. At the request of educators, it was decided to study on-line. Initially a paper survey was conducted, but educators in some centers did not agree to the fulfillment of such surveys. For them, anonymity was important. CAWI method. In some centers the questionnaires were filled individually,

others in groups, on the assumption that the answers of the employees of a particular department will be the same. Due to the difficulty in the verification process, employees, institutions which have completed the survey, and in order to reach the widest possible group of respondents and to acquire the opinion of many, educators from Museum Educators Forum were invited to cooperate, and subsequently published the survey on their fan asking for its fulfillment. This has increased the range of responses and the overall scale survey. As Loboeki noted that a survey are never an end in itself, but are subordinated to specific research targets. The surveys incorporated closed, open and semi-open questions, alternative, disjunctive and conjunctive questions, filtering and control. And as the last CAWI survey among teachers of the schools invited to the project. In some cases, teachers answered questions on-line, others asked to provide questionnaires to schools. They were filled during an official meeting of the school Council, followed by a member of the research team moved to the on-line surveys to facilitate the counting rates and plotting graphs. The teachers, similar to educators, requested anonymity.

INFORMAL EDUCATION

The above observations lead to the conclusion that teaching is more and more about informal education. Informal education and self-education often include museum education, but only in the case of education at museums in science centers, where education promotes activity, stimulates curiosity, and makes the audience critics and creators. The mission of the museum is increasingly defined as participation in the education process. Furthermore, many educators stress that museums are a great place to realize *lifelong learning*. It is education that speaks in a direct language and is accessible to everyone. It refers not only to dry facts, but speaks to the senses, puts on the development of imagination. The methods and effects of museum education are more like non-formal education. Non-formal education, however, is often described in opposition to formalism. Many educators believe that this is a completely different form of education than formal. Among other things, Alan Rogers (2004) writes that the terminological differences reflect structural differences in this case. Out-of-school education is perceived as a process of shaping attitudes, values, skills, and knowledge based on experience and the impact of the environment. Informal education has many functions ranging from recreation, development and education through socialization and cultural up to cognitive-intellectual. This education aims to help pupils cope with school failure and social exclusion, organize free time, improve their skills, but also help them transition from adolescence to adulthood. Despite its non-formal character, it is a professional job. However, it is important to emphasize that there are significant differences in out-of-school settings in European countries, according to René Clarijs (2001), the president of the European Association for Children and Youth and Researcher. In some countries, it has the same public and political status as formal education. According to some laws, it has the same powers as formal education. Different European countries have different visions of its role and significance. It also wears various names: leisure education, extracurricular, non-school, informal, extracurricular, unregistered, without certificates. However, the term of informal education is used in the Council of Europe and the European Union and is referred to as the leading way of learning in societies based on knowledge and information.

Informal education is traditionally understood as learning methods that exist outside the formal education system. It is often treated as an opportunity to compensate for inequalities in access to education, knowledge acquisition. It is perceived as complementary education, which uses various forms of transferring knowledge from the traditional message through self-learning models (individual and group) or education through the use of media to the attempt to create new didactic forms. Its key distinctions are the multidimensional nature of the interaction process, the attempt to meet the challenges of everyday life, the dialogue with man and his environment, the demise of the teacher-student relationship, the departure from *ex cathedra* lectures, the exchange of roles - mutual learning of pupils from teachers and teachers from pupils, and group work. The last element distinguishing it from formal education and the only drawback of this education is the lack of recognition of certificates. In return, quasi-diplomas and quasi-certificates are issued, which can in fact be sources of satisfaction only - and their role is basically finished and quasi-examinations are conducted. This education is based on active participation of students and teachers. Informal education therefore stands in opposition to formal education in its four main aspects.

Meanwhile, the situation of museums - the low number of visitors and the need to make statistics and demonstrate the right number of pupils - forces educators to reach for formal education. Museum education is often confused with school education. As museums observe, usually the educational activity of museums

is reduced to meeting the expectations of schools, it is part of specific forms of communication and is considered as an educational system (Karamanov , 2006). As pointed out by F. Weidacher (2005, p. 183), museum education is often confused with the educational medium that the school provides. Meanwhile, the museum is not able to carry out school functions as part of its activities. As Andrzej Rottermund (2011), notes, museums use a different style of teaching than the school uses.

This is a creative education that focuses on the direct contact with an exhibit and utilizes the imagination of the students. Developing new teaching methods based on artistic tools, which also serve to promote the idea of sustainable development. As Rottermund emphasizes, this education has increasing influence on the school - it helps to develop a new teaching system in schools and differently builds a relationship between students, pupils and teachers. In a different way, it also refers to time and place. Enables students to engage in educational activities. And the education itself is treated as a process of learning rather than as a realization of three "rules" - "memorize, pass, forget", which the test-based system of learning is based upon.

PARALLEL EDUCATION

Museum educators seek an exit of the unsettled situation of cooperation between the school and museums, the frequent treatment of these two centers as competitive rather than complementary in the new regulation and changing the form of cooperation with schools. In some museums, you can see the relationship between the educator and the teacher, but these relations rather resemble private, personal contact. The educator then informs the teacher, who willingly, often once a year visits the building, about the offer.

Museum educators mentions:

We try to establish contact with teachers. We take great care to nurture this relationship. We want the teachers to come back. Teachers, therefore, try to help, want and try to come back to the museum.

With schools we can work in a variety of ways. We can organize seminars for teachers. We can rent exhibitions to schools, encourage participation in competitions that we organize. The cooperation we have developed is a harmonious co-operation. It does not bring any problems. It is based on pseudo-private relationships. We have a mailing list of teachers who come back to us. We mutually like each other. We inform them about all events.

It would be cool if we (educators and teachers) could work together. It would be a golden middle. We could consult with our ideas. It is not about them creating a museum education program. It's our job. But it would be good to present them with ready-made suggestions. Teachers could relate to them. We could not jointly construct museum classes because of conflicting goals.

The cooperation between the museum and the school should not start and end in the museum. It is primarily an area where further development could take place, before and after, visiting the museum. There, partnership and cooperation with schools should be developed.

But this collaboration cannot be called institutionalized. Such, in museums in the Małopolskie and Silesian regions, practically does not exist. Hence one recommendation is to regulate these relationships. Establish a basis for institutional cooperation; a space for exchange of information, good practices. These may be conferences for educators and museums. Training is very important so that both can understand the nature of the work of the teacher or educator. Many of the problems both the educators and teachers have discussed during various conversations, stem from mutual ignorance of what the job looks like and the conditions of the other. Jolanta Skutnik calls this specific type of cooperation cultural cooperation, or partnership; a tool of cultural co-operation, which promotes the development of all participants, and therefore both pupils and teachers (Skutnik, 2011).

It seems that the key to creating the basis for cooperation is the combination of informal education, which is comprised of a museum class, with formal school education. This seems to be an important element of contemporary museum education. The combination of both is also a reference to the recommendations of the European Commission. Recent guidelines from the European Commission enthusiastically recommend

the combining of formal and informal education. As noted by Manuela du Bois-Reymond, from the Center for the Study of Youth in the study of the relationship between formal and informal education prepared at the request of the Secretary General of the Council of Europe. The aim was to further initiate a discussion within and between the European institutions dealing with the problems of education: "The concepts of learning and education, which once were not even subject to any discussion, in the last decade are becoming part of the increasingly hotter disputes, between educators and sociologists, as politicians and practitioners, both in the national context, as well as European" (Baumfield, Butterworth, 2007, p. 412). He goes on to further emphasize the importance of informal education in the emergence of the shadows, and its importance for the future of the young generation - before completely marginal - is now becoming the most important in the life of every human being. The European Commission's merger of formal and informal education, sees an opportunity to improve the quality of learning. Promote equality opportunities through the recognition of training and skills acquired through non-formal education and to determine how to accept the experience and Bodies gained in this way ". In order to paint a clear picture of what non-formal education at European level should be: in the sense of the process of learning outside The school curricula, leading to some form of recognized certificate" (du Bois-Reymond, 2005, p. 33).

As part of the "Europe 2020" strategy, informal education of young people is supported, by improving quality, recognizing its outcomes, and combining it with formal education. The White Paper also emphasizes the combination of formal, informal and incidental education and emphasizes its complementary nature. Informal education is well understood as education through practice, and is committed to the primary goal of shaping and developing interest and abilities of children and youth. Meanwhile, according to Zaid Al-Shammari and Thomas Yawkey (2011), who argue that the systematic teaching is the attitude and/or the results achieved within the framework of activities extended over the *longue durée* and divided into different levels of difficulty that lead to outstanding achievements, define formal learning as being "systematic teaching [that] is non-observable, internal, individual learning process that leads to the acquisition of new knowledge and new, creative activity and creative ways to solve problems" (p. 280). Increasingly, in the discourse on education, various statements appear by known academic reformers who believed that education is not only training in a traditional sense, but also a formation, or shaping of. And is this last opinion that brings informal and formal education closer together. As Harold J. Noah and Max A. Eckstein (2004) have noted, informal education can be also successfully used in formal education.

In combined education, both formal and informal education are incorporated. As Bois-Reymond writes, boundaries begin to blur between the time spent learning, working and relaxing. There are new concepts of science, combining science with work, theory and practice. There are significant changes in the relationships between students and teachers / trainers. These two become not so much lecturers as helpers and participants in the learning process. This new model of education favors more civil society building and the involvement of participants in the education process in acquiring knowledge. An important element of this education is commitment and active participation. Moreover, as the authors note Training Package issued by the Council of Europe: "Informal education should be an instrument of integration for all." (Guedens, 2000). According to Bois-Reymond, "The purpose of education is to educate in general: " The sense of informal education, by definition, also means discussing issues related to formal education. All instruments and methods used in informal education will have a long-term impact on formal education and vice versa. Educating the population of Europe requires active conquerors of knowledge who will build their own educational - professional CVs and participate in the life of the local community, the country and Europe "(du Bois-Reymond, 2005, p. 27).

CONCLUSIONS

Museum education, which in my opinion is an example of education combining informal teaching with formal education, is to spread knowledge. Aleks Karamanov (Karamanov, 2011) emphasizing the role of such education points to a number of its obligations. It is intended to motivate the student to personal development, to be a condition for the development of the capacity of thinking, intellectual ability and exploration. He also believes that this is a learning system based on problematic, heuristic and reflective technologies. It is therefore parallel education. Its space, which mentions Renata Pater, is "broadly area of informal education, cross the field of socio-educational activities and formal education system" (Pater, 2015, p. 21). Therefore, it is recommended to include cultural education, which disappears due to the fall of

humanitarian values and the depreciation of the humanities, into the school education program. Teachers should not have problems going out of school to pursue parallel education in a cultural institution; they should not seek excuses to be able to show a part of the culture to students in reference to the core curriculum, instead proving that the entrance to the museum is included in the curriculum and that the museum will serve as a venue where a course on a given subject will be implemented. They should have the obligation to leave at least once a semester to cultural institutions with pupils, pursuing cultural parallel education. It seems unacceptable that - unfortunately often enough - students admit that they have never been to a museum or theater. They did not know how to behave in the institutions of culture; they could not creatively relate to the contents conveyed there. Meanwhile, one of the aims of museum and cultural education is to prepare young people from participation in culture, appreciate a direct contact with art disciplines, and in the case of science centers and technical museums, learn how to interact with science and technology. Adopting art promotes social and moral development; activates dialogue of participants rather than a monologue, contributing to the perception process of art and the world. Karwasz and Raven in the museum pedagogy see a way to solve the above problems. They write: "Museum pedagogues have an important role to play in determining the educational value of an institution's resources and then transforming them into an exhibition to stimulate imagination, motivation, and launch a sequence of interactions to create the research field appropriate to the given exhibit " (Karwasz, Kruk, 2012, p. 12).

Privileging cultural education treated as a "learning culture, cultural heritage and as interiorization of content of aesthetic education to encompass the concept of education through art and art education" (Pater 2010:66), to enable its implementation initiates processes and activities aimed at developing the students. It is participatory education, which should not allow passive attitudes of the participant in the learning process, and in return should support his aspirations for self-realization, self-development, tolerance, respect and kindness towards others. Support the attitude of openness to the world and interest in heritage, history and their contemporary connotations. It supports human development, providing knowledge, but also the passing of values (Wysok, Stępnik, 2013).-In this way, education that focuses on important aspects of the twenty-first century education, namely: continuity, interactivity and multidimensionality. It is worth noting that the concept of education through art has a very long tradition in Polish pedagogy. Interestingly, most educators asked to point to the inspiration for pedagogical models and theories, if they mentioned anyone, it was John Dewey, Gorges Hein, Jean Piaget, and Montessori, they did not however refer to their theories. Thus, they pointed to concepts of pedagogy of culture, cultural heritage, American constructivist theories, theories of communication or cultural and artistic mediation, bypassing the Polish background of education through art.

The combination of formal and informal education requires the creation of a new definition of education. So the recommendation is the same: education should be treated as a whole. Do not divide it into levels that have mutually nothing in common. This postulate seems to be slowly realized. Ministerial projects are emerging that allow education as a continuous process of learning, shaping and exchanging good practice. The Ministry of Science and Higher Education and the National Center for Research and Development announce projects in which students work with students in the III and IV stages of education (to name the most important and most up-to-date: University of Young Inventors, Copernicus Pathways) and 2nd stage of education (Young University explorers). It would also create a large project grant for the implementation of parallel education and above all, enable cultural education program for schools, with the condition that specialists-educators should implement it outside the school building. Every class in humanistic and social subjects should go to theater, cinema or museum, and within science-based learning, excursions to research centers and museums of technology and science. Only the sanctioning of such exits will allow teachers to freely use parallel education. In addition, these outputs should be subsidized by the state. It is not uncommon, especially in small towns where, in order for a student to visit a cultural institution, they must travel to a nearby town, an excursion that many parents cannot afford. Many think that if they are obligated to finance a child's excursion to a larger city it is better, in addition to the touring of the old town, he or she would visit a McDonald's or a *Aquapark*, rather than a museum, which is deemed as boring. Such a position of parents is unfortunately very common. Teachers try to counter such beliefs, explaining what a modern narrative museum is and illustrating the many benefits a child can acquire while visiting a cultural institution. Taking into account that much remains to be done about public awareness (such attitudes derive from the privilege of economic sciences and the depreciation of the humanities), combining school education with parallelism and subsidizing trips seems to be a necessity. In addition, it is possible to revive

the education program through art, which has since been abandoned in Poland.

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National Cultural Identity in Teaching English to Kazakhstani Learners

Gulnara KASSYMOVA

*Suleyman Demirel University, Kaskelen, Kazakhstan,
guln-k@mail.ru*

ABSTRACT

It's quite evident, that nowadays English language receives the status of international, global language. Quite all countries all over the world stress the need to master this language as an opportunity to integrate into world economy, science, education and culture. The Republic of Kazakhstan is not an exception because of trilingual policy, where English language is included into all education programs from primary schools to higher educational institutions. This is the period of enculturation for young generation and according to some public opinions learners are unconsciously forced to master foreign language and culture, in this way they are put to acculturation in some degree without being aware properly of their national cultural identity. But as the contemporary methodology states the goal of foreign language teaching is to achieve the level of intercultural communicative competence, which means a reflective use of foreign language, based on a learner's ability to analyze a new language and cultural phenomena in comparison with their native one. Thus, the aim of this paper is to analyze the threats to national and cultural identification of students in higher education while learning English language. As an object of research we have chosen the students of linguistic department, those who are mostly forced to achieve foreign language proficiency and in this way are exposed to risk in losing their national cultural identity. In the research the curriculum, the educational materials (English language course books) were analyzed, questionnaire, interview were conducted.

Key words: national and cultural identity, language as means of national and cultural identification, enculturation, acculturation, intercultural communicative competence.

INTRODUCTION

Nowadays we actually face the globalization in all spheres of our life: policy, economy, and culture, reflected in the way of policy making, producing and consuming goods, sharing the same cultural values, and keeping the same life-style. The ability to integrate into global economy, global political system, global education and universal culture is possible to a shared linguistic code, English language, which receives the status of lingua franca (Crystal, 1997), international (Kumaravadivelu, 2008, 2012), global language (Block and Cameron 2002), world language (McCrum, 2010). The prevalence of English language all over the world as a language of education, as a means of professional development and international communication represent it as economic commodity (Heller, 1999) chosen by language learners and by institutions. But, the more globalization penetrates into national cultures the more actively people try to retain national cultural identity, its internal components as language, tradition, religion. Giddens (2000) was right when he asserted that globalization is indeed the reason for the revival of local cultural identities in different parts of the world. Each community strives to protect and preserve its own identity. Whenever there is a real or perceived threat to this identity, social unrest erupts.

But learning English does not mean only getting knowledge of foreign language and culture, and denial the native language, on the contrary, it helps to understand other cultures, compare with his own culture, and develop the skills of interaction with representatives belonging to other culture. According to contemporary methodology the goal of foreign language teaching is to achieve the level of intercultural communicative competence, which means a reflective use of foreign language, based on a learner's ability to analyze a new language and cultural phenomena in comparison with their native one. Intercultural communicative competence concerned with attitudes and values, knowledge, skills of interpreting and relating, skills of discovery and interaction, and critical cultural awareness (Byram, M. 1997).

Nowadays an intercultural communicative competence is defined by scholars as a capability, which allows a language personality to overcome the borders of his native culture and get a quality of cultures mediator without losing his native cultural identity. The more native language and culture proficient is a learner the more successful he will be in the process of developing his intercultural communicative competence while foreign language and culture acquisition.

That's why the question of national and cultural identification which means 'awareness of national and cultural specifics, relevance to a certain group of people' is a very topical issue in the context of globalization. So, there are contradictory opinions toward the impact of English language on national and cultural identity of peoples from other nationalities:

- Intensive spread of English in the social life of the country weakens national and cultural identity of English language learners;
- Learning and use of English as a foreign language may foster national and cultural identity on the base of ability to understand other cultures, to differentiate foreign culture from native culture.

That's why the aim of this paper is to consider whether the English language learning for a long period leads to weakening and enhancing of national and cultural identification by learners in the context of trilingual education in the Republic of Kazakhstan as a case study.

TRILINGUAL EDUCATION IN KAZAKHSTAN – PROS AND CONS

The cultural project "The Language Trinity" was initiated in Kazakhstan in 2007 by the president N. Nazarbayev in his address to Kazakhstani People "New Kazakhstan in a New World" (MES, 2007) according to which Kazakh language was defined as a state language; Russian language as the language of interethnic communication; and English, as a necessary condition for successful integration into global economy. Further this idea was developed in the State Program of Languages Functioning and Development of the Republic of Kazakhstan for 2011-2020 (MES, 2010). On the base of its main issues the State Compulsory Standard of Education (2012) has introduced teaching a foreign language (English) into all programs from kindergarten to higher educational institutions and since the 2013-2014 academic year English language has been taught in the first grade all over the country. Along with teaching English language as a discipline according to a Road Map of Trilingual Education in the Republic of Kazakhstan for 2015-2020 years (MES, 2015) it's going to start to teach some subjects as Biology, Chemistry, Physics and Computer science in English language in high school in the 2019-2020 year. The number of hours dedicated to English language learning and its duration within the system of education in Kazakhstan was significantly increased. But the introduction of trilingual education since the primary school caused a wide resonance from some scholars, writers, social leaders, and representatives of different social communities in the Republic of Kazakhstan (Mamashuly, 2016). It was claimed that it may lead to destroying the Kazakh nation. The primary education, to their mind, should be given in learners' native language (Kazakh/Russian), because this is the intensive period of enculturation for young generation, when they actively master native culture through native language, acquiring specific behavior patterns, learn about native cultural values, customs and traditions. But instead of it they are unconsciously forced to master foreign language and culture, in this way they are put to acculturation in some degree without being aware properly of their national cultural identity. These fears have a reasonable basis, because Kazakh language during Soviet Union period due to some historical, political and economic factors was underestimated, and Russian language dominated during 70 years and even now it continues to be the main means of communication in some regions of the Republic of Kazakhstan in all spheres of social life. Here, we agree with Suleimenova E. who stated: "In those conditions there were also shifts in relation between Kazakh and Russian languages when for a part of the population the ethnic, cultural and language identity has appeared formal and knowledge of a native language, passive; when the falling prestige of a native language has to a certain extent led to the falling prestige of the nation, its stories and culture; when part of Kazakh population began to use Russian for intra-ethnic communication; when the Kazakh language has been forced out of the sphere of public, official and business communication; when the principle of parity proclaimed by an official policy in practice has turned into a decrease of 'functional health' and 'communicative capacity' of the Kazakh language" (Suleimenova E., 2010, 387). The peculiarities of language environment and language functioning due to some historical, political and economic factors in the Republic of Kazakhstan were widely discussed by Kazakhstani scholars: Zharkynbekova Sh., Akynova D., Aimoldina A. (2013), Tamirgaliev, K., Dzhamaliev, G. & Abdrasheva, B. (2014), Syzdykbayeva, R. (2016).

Thus the status of Kazakh language as symbol of national and cultural identification within the trilingual education is a very disputable and topical issue nowadays, which made us to conduct the following small –scale research.

METHODOLOGY

This study, which looks at the effects of learning English within Kazakhstani trilingual education on national cultural identity from the point of undergraduate students, seeks to answer the following research questions:

- How the undergraduates understand the notion "national-cultural identity"?
- How do the undergraduates evaluate their awareness of native culture?
- How do the undergraduates evaluate their ability to be aware of foreign culture?
- How did English learning influence the enhancing or weakening national cultural identity?
- What was the main reason of weakening learners' national cultural identity during their study at higher educational institution?

PARTICIPIANTS

The research was conducted with 44 undergraduates of University named after Suleyman Demirel, bachelor program: "Foreign language: two foreign languages". Most of students were Kazakh by nationality; only 4 undergraduates were of other nationality: Turkish, Uighur, Russian, and 1 person from mixed-race family. The undergraduates were of two categories: 25 who graduated from secondary school with Kazakh language of instruction, and other 19 students – Russian language of instruction. The choice of these participants in our research was not accidentally, because the language of instruction: Kazakh or Russian in the secondary school and, the period of learning English may influence on the formation of learners' national cultural identity.

DATA COLLECTION AND ANALYSIS

Data were collected through qualitative study using questionnaire open-ended and multiple choice questions and interview. The paper-based questionnaires were given to undergraduates at the end of their study at the university, after theoretical course on the voluntary base and took about 20 minutes to complete. The questionnaires contained the information concerning the biographical data: the nationality, type of secondary school: Kazakh/Russian, the period of learning English as well as answers to four research questions. The data were analyzed qualitatively through thematic and content analysis.

FINDINGS

The goal and specifics of curriculum of bachelor program on specialty: “5B011900 - Foreign language: two foreign languages” defines the English as a language of instruction at this department—which means studying quite all disciplines in English, except Kazakh/Russian (8 credits), and other second foreign language chosen by students (French, Spanish, Chinese, Turkish, Korean) – 18 credits, in general - 26 credits out of 142 Kazakhstani credits. As a result - the students’ academic language is English and they are mostly forced to achieve English language proficiency and in this way they are exposed to risk in weakening their native language proficiency and national cultural identity.

That’s why; the first goal of open-ended question in the questionnaire was to reveal how students understand national cultural identity, which is very important for future teachers of foreign language as mediators of intercultural communication in the classrooms. The analysis of answers to this question revealed that the undergraduates (73%) are close to the meaning of this notion, and it’s shown by the following students’ comments:

- *National cultural identity it's your cultural background, belongings to definite culture, awareness of your own national culture, tolerance toward other cultures.*
- *Ability to speak your native language perfect and be aware of your customs, so you can explain anything, anywhere and anytime...*
- *National Cultural Identity is a part of personality, his ethnic origin, religion, belonging to social class and culture.*
- *National cultural identity it's the thing that differentiate you from other cultures and nationalities.*
- *National cultural identity means a personality with his customs, traditions, and beliefs.*

At the same time 27% of the undergraduates have some difficulty to answer this question; their answers were not concrete and full:

- *Culture, language, name, surname.*
- *It's a unique feature that only our nation has.*
- *It's your beliefs.*

After reflecting the understanding of national cultural identity, the undergraduates were asked to evaluate their self-awareness of native culture and then foreign culture by marking as “Very well”, “Good”, “Not so good”, “Badly”. The answers were divided into two groups, depending on the first language of undergraduates: Russian or Kazakh.

Table 1. Awareness of undergraduate students of native language and culture

Self-evaluation	Kazakh school	Russian school
Very well	56%	10 %
Good	36%	47 %
Not so good	8%	42%
Badly	-	3%

As it’s shown in the table, more than half of the students from Kazakh school (56%) evaluated their self-awareness of native culture as “Very well”, while only 10% of students from Russian school could do so, even they are all Kazakh by nationality. Unfortunately, 3% of undergraduates from Russian school are badly aware of Kazakh language and culture.

Table 2. Awareness of undergraduate students of foreign language and culture

Self-evaluation	Kazakh school	Russian school
Very well	12 %	5%
Good	56%	52%
Not so good	32%	42%
Badly	-	-

The results of undergraduate from Kazakh school were slightly better than the results from Russian school, only one general thing in both groups that quite the same number evaluated as “Not so good” awareness of foreign culture. This requires a special attention of instructors, who are mostly concentrated on foreign language phenomena, and less on foreign culture specifics.

Consequently, the undergraduates were asked the third question - How did the study at university influence the enhancing or weakening their national cultural identity? Here they were given some statements to choose:

- *I could understand more better the difference between foreign and native culture.*
- *I learnt more about foreign culture and could reflect about my native culture.*
- *I've begun to speak and think more in a foreign language and less in native language.*
- *I express more interest in acquiring foreign language and culture and less interest in the native culture and language.*
- *I've noticed more mistakes in my written and oral speech in native language.*

The graduates of secondary school with Kazakh language instruction marked mostly the first two statements: “*I could understand better the difference between foreign and native culture*”, “*I learnt more about foreign culture and could reflect about my native culture*”. At the same time there were students, who underlined more interest in acquiring foreign language and culture and less interest in the native culture and language, consequently, they noticed more mistakes in written and oral speech in native language. The same with the graduates from secondary school with Russian language instruction, but they marked that they've begun to speak and think more in a foreign language and less in native language.

And, the last research question was oriented to reveal the main reason of weakening national cultural identity? As a reason of less accuracy and fluency in their native language and cultural awareness graduates marked the following:

- *English as a language of instruction (65%);*
- *Absence of disciplines, oriented to improve their native language and culture (25%);*
- *Absence of personal motivation to improve native language and culture during their study at higher education (10%).*

CONCLUSION

So, in this small in scale research we attempted to analyze whether intensive learning English language in higher education in the Republic of Kazakhstan has threats to national and cultural identification of students. As it was shown, it may have more for the Kazakh students graduated from Russian secondary school, thus, who didn't have more native language and cultural environment for enculturation, and, who continued to study English without being involved in such environment while studying at university. Unfortunately, the specifics of study at this department are focused really more on foreign language and culture and less on native language and culture. There are no disciplines, except Kazakh language (6 credits), oriented to improve learners native language and culture. As a result, learners are not motivated to improve native language and culture during their study at higher education. This issue should be taken by curriculum and program designers, administration of the university in future. Those students, who are from Kazakh school, are in better position thanks to their language background, they could reflect about their native culture on the base of advancing their knowledge of foreign language and culture, this means that these undergraduate students have more potential for being a mediator of intercultural communication in the classroom, thus, are able to develop intercultural communicative competence by English language learners. And here we strongly agree with Smith (1985:6) who advocates that learning English is not aimed at changing one's identity. Student's ethnic, religious, and political backgrounds should remain the same. Students will certainly want to use English well and be acknowledged as doing so, but this does not require them to attempt a change in their identity. There is no need to become more American or British in order to use English well. One's morals or dedication to family traditions need not change at all.

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Need Assessment on Teaching and Learning About Water Resource Management and Water Disaster of Basic Education

Chunwadee CHUNRASAKSAKUN

chunwadee@gmail.com

Unchalee SANRATTANA

unesar@kku.ac.th

Faculty of Education

Khon Kaen University

Khon Kaen 40002

Thailand

unesar@kku.ac.th

ABSTRACT

This research aimed to examine the needs of teaching and learning about water resource management and water disaster in Thailand Basic Education. Specifically, researchers examined the current status, problems, and needs of teaching and learning related to water resource management and water disaster in order to develop a local curriculum framework. There were two groups of sample involved. The first group was selected using multi-stage random sampling technique, giving a total of 217 teachers and students while the second group was selected utilizing purposive sampling technique, consisted of 21 experts from various specializations such as water management specialists, local intellectual, and curriculum and instruction specialists. Research instruments were questionnaire, in-depth and focus group interviews protocols. Results revealed that the need level of teaching and learning about water resource management and water disaster was high. In addition, results showed that there are seven themes of learning identified as local curriculum content namely water, water resources, water resource management, natural challenges management using proactive approach, local wisdom on water resources management, definition of terms on water resource management, and related water disaster management. Implications of this research are students have to educate in managing their behavior to live sustainably.

Keywords: Need assessment; water disaster; water resource management

INTRODUCTION

Education in Thailand is mainly provided by the Thai government through the Ministry of Education from pre-school to senior high school. A free basic education of twelve years is guaranteed by the constitution, and a minimum of nine years' school attendance is mandatory. Formal education consists of at least twelve years of basic education, and higher education. Basic education is divided into six years of elementary education and six years of secondary education, the latter being further divided into three years of lower- and upper secondary levels. Kindergarten levels of pre-elementary education, also part of the basic education, span 2 to 3 years depending on the locale, and are variably provided. Non-formal education is also supported by the state. Independent schools contribute significantly to the general education infrastructure (Ministry of Education, 2008).

The education system in Thailand is based upon a 6-3-3 model which constitutes a 9-year compulsory education. The 6-3-3 model is 6 years of primary school education from Grade 1-6, 3 years of lower secondary education Grade 7-9 and 3 years of upper secondary education from Grade 10-12. The first 9 years (from Grade 1-9) are covered under the compulsory education act. Originally, primary schools are only conducting classes from Primary 1-6 or Grade 1 to Grade 6. However, actual scenario indicated that many students fail to complete their compulsory education until Secondary 3 or Grade 9, due to the accessibility of secondary schools in more rural settings, the government introduced an extended primary school model. Thus those primary schools which located in rural areas are allowed to conduct classes up to Secondary 3 or Grade 9. This is the effort of the government to ensure more students especially in rural areas have the opportunities to graduate with a primary school certificate (Ministry of Education, 2014).

The upper secondary curriculum has been divided into two basic tracks: general academic and vocational with approximately 57 per cent of students taking the academic track and 43 per cent the vocational. The curriculum of both lower and upper secondary includes four basic elements: Core subjects such as Thai, mathematics, science, and English which must be taken by all students; Prescribed elective subjects, which differ according to local conditions and needs (the special needs of schools in Islamic areas of the south); Free elective subjects depending on the interests of learners; and activities. With the onset of Asean Economic Community (AEC) 2015 and other perceived shortcomings in the education system, particularly in English education, there has been a proliferation of specialised schools in recent years. Within the last 15 years, a plethora of schools has emerged such as bilingual schools, international schools, English Program (EP) schools, mini-EP schools, and World-class schools.

Basic education in Thailand comprised of 8 core subjects namely Thai language, Health and Physical education, Mathematics, Art, Science, Career and Technology, Social Studies, and foreign languages. Additionally, local curriculum consists of local wisdom, locally relevant knowledge. However national curriculum for secondary education including promotion of 21st century skill, critical thinking, creative thinking, problem solving, encourage self-learning strategies, and encourage moral development (Siribodhi, 2014).

There are three level of evaluation and learning measurement like classroom level, educational constitution level, and national level. Key success factors are measured by continuity and sustained efforts, stakeholder participation and collaboration, support mechanisms, learner centre approach, curriculum development, professionalization of educators, quality assurance of educational institutions, and use of ICT in education (Siribodhi, 2014).

Education reform principle in Thailand comprised of education builds the nations, empowers the individuals, and generate employment. The main aim of Thailand education reformation is to provide equal access to life-long learning and training, enabling citizens to acquire knowledge as asset to generate income. Besides, it is also focusing on integration of all aspects of the quality life which including comprehensive and balance of human development. Finally, development knowledge-based society which leads to knowledge-based economy is highly emphasized.

There are four aspects of the reformation namely learning reform, teacher reform, education quality assurance, and reorganizing of administration system. Learning reform is related to promote learner-centred model, emphasis on active learning, emphasis on the utilization of local wisdom and knowledge, and emphasis on a holistic approach. Meanwhile teacher reform covers promote national, master, and lead teachers, approach system of teacher licenses, and promote innovative teacher-learning, with emphasis of site-based training.

According to Belgrade Charter -1975 the goal of education is to develop a world population aware of, and concern about the environment such as water source and its associated problems which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively towards solutions of current problems and the prevention of new ones. The Charter has suggested the six objectives for teaching environmental education (Parisamvad, 2014).

- Awareness: to create an overall understanding of the impact and effects of behaviours and life styles on both local and national environments and on short term and long term.
- Knowledge: to help individuals and social groups to acquire basic understanding of the total environment and its associated problems.
- Attitude: to help individual and social groups to acquire social values, strong feelings of concern for the environments and motivation to actively participate in its protection and improvement.
- Skill: to help individuals and social groups to acquire the knowledge and skills of solving environmental problems.
- Evaluation ability: to help individual and social groups to evaluate environmental measures and educational programs in term of ecological, political, economical, social, aesthetic, educational factor.
- Participation: to help individual and social groups to develop a sense of responsibility and energy. Regarding environmental problems like water source and water disaster to insure appropriate action for solving the problems.

PROBLEM STATEMENTS

However, Thailand is facing water pollution as the most critical environmental problem. Despite the annual southwest monsoon, Thailand is subject to drought, particularly in the northeastern region. The major disasters over the past three years (2011-2013) provided stark reminders of natural disaster risks that would affect human well-being and future development. The trend of increasing exposure and greater losses associated with disaster demands a better understanding of their complex nature and common causes, namely hazards, exposure, vulnerability, and resulting risk. Those occurred disasters had led to loss of life and economic damage in Thailand (ADPC's news, 2014).

According to Pongsasanongkul (2004), one of the serious environmental problems occurred in Thailand was water pollution and water resource management. Pongsasanongkul further explained that Thai people still at a low level of knowledge related to the value of water resources. Owing to the National Economic and Social Development Plan has been implemented for more than 55 years, caused the serious water pollution problems happened particularly in the industrial economic development areas. As a result, environmental education regarding water resource management and water disaster courses are timely to organize in Thailand. It is an effort to teach how natural environments function, and particularly, how human beings can manage behaviour and ecosystems to live sustainably. This often implies that education within the school system, from primary to post-secondary to educate the learners to be knowledgeable of the water source and water disaster and its associated problems, aware of the solutions to these problems, and motivated to solve them (Tan & Pedretti, 2010).

Thailand's dramatic economic growth is the major source to cause the water pollution, soil erosion, water scarcity, and other environmental problems. According to the World Bank Team (2001), Thai government had called for declaration on the environmental protection as a top priority. Based on the report of a 2004 indicator in Environmental Monitor (2006) indicated that the cost of air and water pollution in Thailand has increased from 1.6 to 2.6 per cent per annum. This is further supported by Runsuk (2011). Runsuk mentioned that Thai government is running out of strategy to solve the water pollution even though the water pollution issue was getting serious due to the industrial waste water and solid waste dumping. This type of contaminated water can cause health problem like diarrhea which has caused 2.2 million deaths each year worldwide according to a World Health Organization report.

Education is a powerful tool in the socio-economic transformation of a society, community, and nation (Parisamvad, 2014). Since the rapid degradation of environmental quality at grass root level needs to control immediately, all these are only possible through teaching water source and water disaster knowledge to develop learners' abilities to manage the problems. Teacher being the agent of social change, play an active role in shaping the attitudes of learners to promote desire to save the environment. Apart from teachers should tell learners the fundamental duties of Thai citizen with regard to water source and water disaster, Thailand's government has to take actions to protect and improve the natural environment including lakes and rivers. Teaching methods used by teachers in a formal system of education integrate water source and water disaster component with the education are role play, discovery method, observation method, dramatization, story telling, games and puzzles, project method, educational visit, and excursion up to secondary stage of education, seminar, symposia, project, group discussion, action research.

RESEARCH AIMS

The main aim of this study was to examine the needs of teaching and learning about water resource management and water disaster in Thailand Basic Education. Specifically, researchers sought to:

- a. Examine the current status, problems, and needs of teaching and learning related to water resource management and water disaster from teachers and learners' perspectives.
- b. Create a local curriculum framework.
- c. Compare the efficiency of created local curriculum framework between teachers who are using created curriculum framework and teachers who are using conventional curriculum framework.
- d. Compare learners' achievement between the experimental group and control group for three different school sizes namely large, medium, and small.

METHOD

A mixed-mode method comprised of philosophical assumptions that steer the way of data collection and analysis as well as the combination of qualitative and quantitative means in two phases in the research process was employed. The research process covered the continuing, planning, searching, discovering, reflection, synthesis, revision, and learning procedure. As a method, it emphasizes on collecting, analyzing, and combining both quantitative and qualitative data in a single study. The essential principle of using mixed-mode method is the use of quantitative and qualitative methods in combination provides a better understanding of research problems than either method alone.

Researchers of this study follow the research and development research procedure relying on participatory action research which consisted of the following phases:

Phase 1: Drafting a local curriculum framework in enhancing learners' understanding on water resource management and water disaster

The curriculum in this study was created based on the four core components of quality curriculum, namely context, content, teaching and facilitating, and process. Context component consisted of materials, learning environment, routines, and schedules. Content component included what learner know, understand and are able to do. Teaching and facilitating component covered teacher's role, relationship and intentional teaching. The final component was process which including how learners learn.

In order to create a local curriculum framework, two methods of data collection were utilized in the first phase. A survey design was employed to 217 school directors and teachers to investigate teachers and learners' problems and needs regarding water resource management and water disaster during the teaching and learning process. A total of 12 professional scientists who are specializing in the area of water resource management and water disaster and nine teacher educators who are the experts in the field of curriculum and instruction were involved in a focus group discussion. All the informants were selected using purposive sampling technique. They were led through an open discussion by a skilled moderator. All these informants have sufficient knowledge and expertise to generate rich input to develop the local curriculum framework to assist teachers to manage their teaching by integrated the knowledge of water resource management and water disaster.

The created local curriculum framework include a written philosophy statement. This philosophy statement describe the curriculum's educational beliefs and practices, including how curriculum practices align with quality standards. The statement also highlights the curriculum's unique characteristics. Together, the philosophy statement and curriculum framework serve as important resources for teachers as they communicate with learners and also as they design their classroom level curriculum. The created local curriculum framework helps teachers deliver consistent educational services. The instruments used in Phase 1 were questionnaire, semi-structured interview protocol, and a conservational guidebook for reporting data and records..

Phase 2: A trying-out of the created local curriculum framework

The created local curriculum framework was tried out in the normal classroom as a mean to test for its relevance. The try-out procedure was carried out to five groups of secondary education teachers who were teaching these four subjects science, social sciences, religious, and cultures to Grade 9 students under the administration of Khon Kaen Primary Educational Service Area 4 and Secondary Educational Service Area 25.

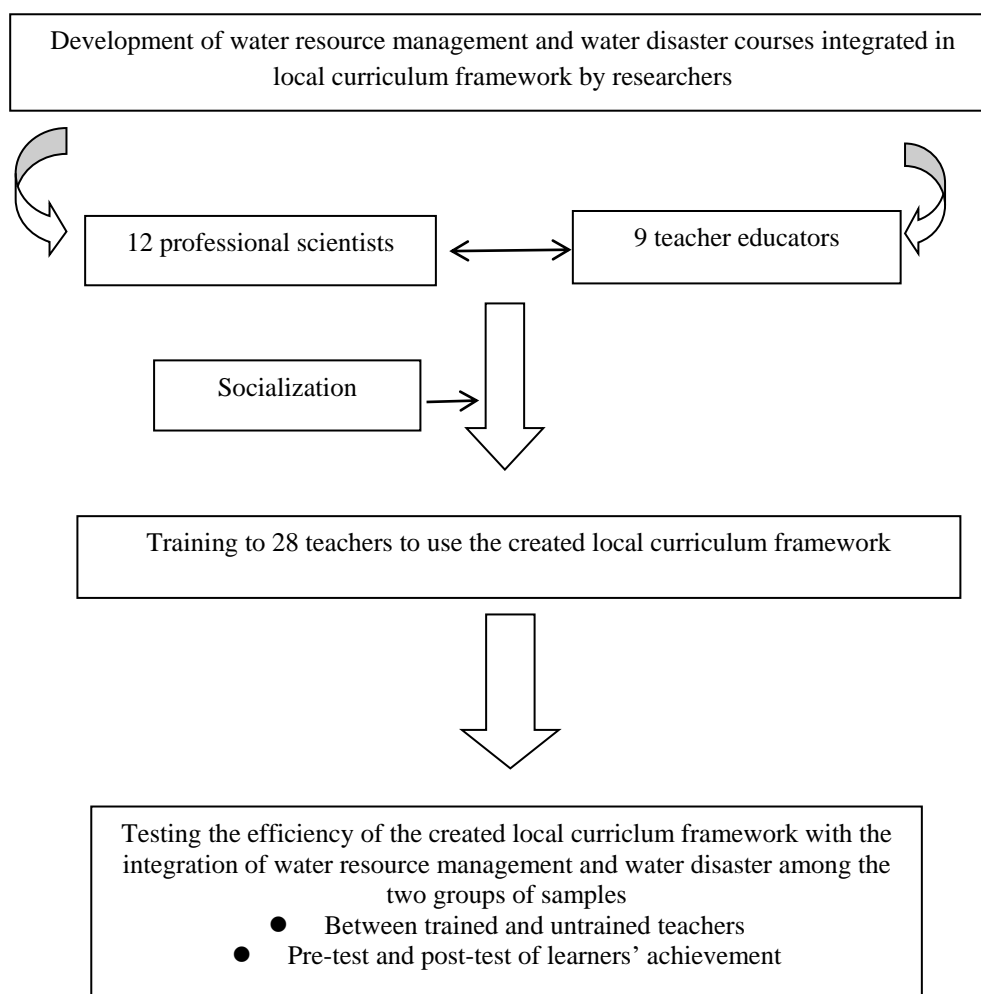


Figure 1. Conceptual framework

Phase 3: Investigation on the efficiency of the created local curriculum framework

There were two groups of sample involved to examine the efficiency of the created local curriculum framework. The first group was selected using multi-stage random sampling technique, giving a total of 56 teachers. They were equally distributed into experimental and control groups. The second group was 79 Grade 9 learners who were distributed into three classes. The pretest-posttest design was employed to measure learners' achievements before and after the treatment. An assumption is made that differences between pretest and posttest are due to the treatment. Quantitative data from Phase 3 was analyzed by descriptive statistic using the mean score and standard deviation and inferential statistic using paired t-test and One-way ANOVA. Paired t-test was identified to be suitable for this study because all the participants were matched pairs and it was considered as a case-control group. One-way ANOVA was used to examine the differences between the three groups of learner from different school sizes. Figure 1 above shows the developmental process of the local curriculum framework.

RESULTS

Results are presented according to the aim as mentioned above. The results demonstrate in three parts and organized according to quantitative and qualitative methods. The initial results highlight the current status, problems, and needs of teaching and learning related to water resource management and water disaster from the teachers and learners' perspectives. This is followed by development of integrating water resource management and water disaster courses in the local curriculum framework process derived from 12 professional scientists and nine teacher educators from the area of curriculum and instruction through focus group discussions. The results

were reported from the feedback of the 21 informants through their ratings. Finally, the efficiency of the created local curriculum framework was evaluated from the two groups of sample namely teachers and learners.

The current status, problems, and needs of teaching and learning related to water resource management and water disaster

Results of the study showed that teachers and learners perceived all the four scales of created local curriculum framework namely school personnel, learning activities with teachers, innovations and learning sources, and assessment and evaluation were at moderate levels. According to teachers' perspective, they indicated that there are too few problems created in the local curriculum framework. However, learners were satisfied with the learning methodologies, instructional technique, teaching and learning process in the created local curriculum framework.

The created local curriculum framework is required participation in sequence steps onto introduction, recapitulation of learning purpose, the seven lesson plans such as water resource, water basin resource, water resource management, natural disaster management and its approach, strategy, and policy, local folk wisdom of water management, specified keywords of water resource and natural disaster management learning groups. The initial finding revealed that quality of learners' outcomes from using the created local curriculum framework of the water resource and natural disaster management has to be transferred to the basic education commission successfully.

On the other hand, the purpose of the teacher training curriculum training is planned to develop the knowledge and ability of teachers to plan a learning unit on the water resource and natural disaster management. Researchers utilized an experimental practice and plan theory training over the three days training sessions. Training instruments were composed of training curriculum documents including a guide book, a trainee document, learning unit sampling, pre- and post-assessing tests, teachers' satisfaction questionnaire, and the quality of learning units' assessments. Results from teachers' perceptions revealed that all the index of item-objective congruence values (IOC) are acceptable. The details of result showed that the guidelines of the created local curriculum framework and IOC of 1.00 and appropriately average values of 1.00 and the quality assessment of learning unit indicating IOC of 0.96, and teacher's achievement throughout the pre- and post-assessment with an IOC of 0.97.

These results implied that the problems of all the four respective scales namely school personnel, learning activities with teachers, innovations and learning sources, and assessment and evaluation have reached the degree of efficiency. Specifically, learning activities and teaching problem scale showed that teachers need to teach at the alternative or high level of water resource and water disaster courses. In other word, teachers have to utilize the high level of format, technique or methodology in order to satisfy their learning unit group. Besides, the created local curriculum framework also includes an introduction, learners' goals for their development, the seven-learning sub-content categories such as water resources, water basin sources, natural disaster administration and its approach or strategy, local folk wisdom in water management, and key words for water and disaster management sub-contents. The important factors of the created local curriculum framework of water resource and disaster content were used for educational institutions.

The created local curriculum framework training is planned to develop learners' knowledge content and abilities through learning units. Researchers utilized the experimental workshop and training contents for learners through the three days' workshop training. The topics that cover in the workshop are training instruments, training texts, training guidebook, training trainee document, learning unit samples, pre- and post- assessment tests, questionnaire about teachers' satisfaction, and questionnaire about the quality of the curriculum unit. The results showed that the created local curriculum framework conformed to the professional guideline of this curriculum, whereby the IOC was 1.00, appropriately average value was 1.00; quality assessment of learning unit with the IOC as 0.96; teacher's achievement throughout pre- and post- assessment with the IOC value as 0.97, and questionnaire about teachers' satisfaction with IOC value as 0.94.

Investigation on the efficiency of the created local curriculum framework

After the 28 teachers were trained using the created local curriculum framework, they were evaluated based on their abilities to teach water resource management and water disaster courses. Result showed that more than 70 percent of the 28 trained teachers are able to build the learning unit of the water source and natural disaster courses. Out of the 28 trained teachers, five and 23 teachers rated the created local curriculum framework as very high and high quality respectively. In addition, the overall perceptions on their satisfactions indicated as high level too.

In addition, results showed that the learning outcomes and achievements of learners in term of their learning using the learning units of water source and natural disaster content are improved. There was a significant difference between the experimental group and control group at the significant level as 0.01. However, there was no significant difference between the three groups of learners from three different school sizes.

DISCUSSION

Results indicate that teachers and students agreed of problems and needs for developing the created local curriculum framework in accordance with their points of view especially in administering the teaching and learning activities with the intervening informative of students' learning on water source and natural disaster learning units. Teachers have to use the innovations or learning medias and learning source to teach and students outcomes have to be emphasized through their assessments. On top of that, teachers' abilities in their teaching management were reflected from the data of personnel, teaching and learning activities, learning source, assessment and evaluation, and teachers' problems and needs.

Results showed that learners have improved on their knowledge and abilities to manage water resource and water disaster. This enables them to have self-development, educate community, family, and local to be use of the water resource management and water disaster knowledge in their lives forever. As a result, Thai's government should introduce water resource management and water disaster content into the basic curriculum at the lower secondary of basic education. This is because Thailand is located at monsoon continent and is likely to face with continuing floods and water disaster almost every year. The most recent serious flood was occurred in the year 2011.

According to the comments given by the professional scientists and teacher educators, revealed that there are a few areas need to improve. For example, the uprightness and accuracy crisis, learners' abilities in learning crisis, importance content and concerning about crisis (Utthanan, 2009). This created local curriculum framework is the first curriculum framework that satisfy the basic education learners from Grade 1 to 12. It is found to be suitable to apply and develop teaching and learning management that covering contexts, problems of students' needs, communities, and local wisdom. This result was found to be in line with Padsin's (2008) study. Padsin studied on the development of a learning unit on Lam Pao Flood Plain Environment school group.

This research has two major contributions. The first contribution is to build the capacity of Thai communities to address and solve problems related to water source and water disaster. The second contribution is to change the teaching and learning process in order to build a generation of community members aware of environmental issues. This research utilizes water source and water disaster awareness as an entry point for a new way of teaching and learning that enables learners to 'construct their own knowledge'. Anticipated outcomes cover new teaching strategies, renewed focus on curriculum concepts, an increase in teachers' comfort levels within the communities, improved learners attitudes about learning, and increased willingness by the local wisdoms to share information and ideas. Ultimately, the researchers expected to create a new school-community partnerships focused on sustainable water resource management.

CONCLUSION

Tackling the serious water disaster risks, at national or local levels of Thailand, systematic approaches would be geared towards a large-scale implementation, with the kind of commitment and sustained actions described in the created local curriculum framework. These requires management by the Ministry of Education, national

society, commitment, political will, and a long-term perspective. This created local curriculum framework will serve to help those planning focused public awareness and public-education efforts for disaster risk reduction.

The created local curriculum framework synthesizes the range of approaches taken across the teaching and learning movement, to provide an overview of what works and what does not, backed up by research evidence where possible. This will help the Ministry of Education to make an informed choice about the most appropriate approaches, and to draw on existing resources wherever possible, to create a system that is more efficient and effective. Besides, it set out approaches and tools for public awareness and public education in disaster risk reduction which are widely in use by national societies. Education is the sharpest weapon because it pulls together a range of research on risk communications and public education for behaviour change, and practitioners' own discoveries in applying these.

The future steps should focus on four key approaches such as campaigns, participatory learning, informal education, and formal school-based interventions. It should consider the following tools for implementing these approaches including publications, curricula, modules, and presentations, e-learning, audio and video materials, web pages and activities, and social media and telecommunications. It then explains how to ensure that these tools are high quality, focusing on powerful images and well-crafted messages that are engaging, proven, adapted, and localized. It also highlights the principles needed to apply these effectively. This is to ensure legitimacy and credibility, consistency and standard messaging, scalability, and sustainability.

The future of the water source and water disaster research looks promising. After disseminating of research results, researchers hope that Ministry of Education, Thailand will expand the results to neighboring schools. The main principles will be incorporated into the next five-year education plan, thus expanding them to other parts of Thailand. In this way the research will have a real impact on the future of the Thai education system.

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Needs Assessment on Knowledge Regarding The Use of ICT Network of the Community Members For Self-Development

Intira ROBROO

Department of educational Innovation and technology

Faculty of Education

Suan Sunandha Rajabhat University

Thailand

intira.ro@ssru.ac.th

ABSTRACT

The purposes of this study were 1) to assess needs in knowledge regarding the use of ICT networks of community members for self-development, 2) to prioritize needs in knowledge regarding the use of ICT network of the community for self-development, and 3) to compare the difference of needs in knowledge regarding the use of ICT networks of the community members when classified by economic and social status. The sample used in this study was 100 people in Phadaeng municipality, Chartrakarn district, Phitsanulok province who were pleased to give in-depth data. The research found when determined needs in using ICT networks of the community members for self-development with $PNI_{modified}$ that the overall picture of needs for using ICT network of the community members was low ($PNI_{modified} = 0.29$). When prioritizing needs of using with $PNI_{modified}$, it was found that knowledge with the highest index were animation and website development ($PNI_{modified} = 0.58$). The second was the use of statistical and research software packages ($PNI_{modified} = 0.55$), while the third was picture software applications ($PNI_{modified} = 0.52$). When classified the difference of needs with $PNI_{modified}$ by economic and social status, it was found that the group with the monthly income over 50001 baht had the highest needs ($PNI_{modified} = 0.56$). The needs in knowledge about the use of statistical and research software package was the highest ($PNI_{modified} = 0.91$). Suggestions: There should be further study to research and develop guidelines for dissemination of knowledge in using ICT networks to community. Ans there should be further study to manage training for using ICT networks in community nationwide.

Key words: Assessment, ICT, Self-development

INTRODUCTION

Learning process of local people is the important factor to strengthen community as learning process improves critical thinking, problem-solving, decision-making and knowledge transferring skills. The information search ability and analysis ability are vital for life-long learners (Candy, Crebert, and O' Leary, 1994). This type of learning encourages learners to continue searching for knowledge with goal-oriented purpose. Self-motivation learning will lead to better use of knowledge than transmitting knowledge from teachers (Knowles, 1975). Knowles proposes humanistic learning theory which emphasizes self-directed learning. Human beings grow up with the self-directed ability and problem-centered learning. He believes that people want to search for their own needs and learn from their own experience. The intrinsic motivation that leads human beings to learn includes self-esteem, enthusiasm, the wish for success and the satisfaction of success. Knowles (1975) proposes andragogy for adult learners with the belief that learners will learn best when they can manipulate the methods and techniques of learning by themselves (Knowles, 1975).

Needs assessment refers to a process to prioritize the needs of the target group from the most important to the least important factors in order to determine the developmental procedure. It includes the study of actual state and alternatives for the target state. The result of the needs assessment reflects the needs for development which is important for the actual developmental planning (Suwimon Wongwanich, 2012). Therefore, the researcher is interested in studying the needs assessment on knowledge regarding the use of ICT network of the community members for self-development based on the concept that the needs for learning is relevant to society change. As information communication technology is the basic media for learning among community members, knowledge regarding the use of ICT network is the basic tool for them to access the knowledge according to their needs.

OBJECTIVES

2.1 To assess the needs on knowledge regarding the use of ICT network of the community members for self-development

2.2 To prioritize the needs on knowledge regarding the use of ICT network of the community members for self-development

2.3 To compare the needs on knowledge regarding the use of ICT network of the community members for self-development based on their economic and social status

HYPOTHESIS

Needs on knowledge regarding the use of ICT network of the community members for self-development are at the high level.

INSTRUMENT AND RESEARCH METHODOLOGY

1. Population and sample

The population and sample used in this study was 100 people in Phadaeng municipality, Charttrakarn district, Pihitsanulok province.

2. Instrument of the study

The instrument used in this study was a needs assessment form on knowledge regarding the use of ICT network of the community members for self-development

3. Data collection

The researcher collected the data from 100 people in Phadaeng municipality, Charttrakarn district, Pihitsanulok province who were the sample of the study during January 15-31, 2016. After getting enough forms, the needs assessment was first analyzed according to the data from the first part of the needs assessment form. Percentage was used for the basic information of the informants. For the second part of the needs assessment form, mean, standard deviation and Modified Priority Needs Index ($PNI_{modified}$) were used for data analysis.

FINDINGS

It was found that among the 100 informants, 71 percent were female and 29 percent were male. Most of them (89 percent) were government officials. The rest were students (8 percent) and employees from private sector (3 percent). 90 percent of them work about learning management. Their monthly income was varied: 10,001-30,000 baht (49 percent), 30,001-50,000 baht (25 percent), less than 10,000 baht (17 percent), and more than 50,000 baht (9 percent). Most of them (57 percent) accessed ICT every day, and 46 percent of them spent 1-3 hours daily on ICT. 74 percent of them used smart phones to access ICT. 26 percent of the informants accessed ICT from desk-top computers. The result of needs assessment on the use of ICT network of community members for self-development by was low ($PNI_{modified} = 0.29$). When considered in detail, it was found that the needs for animation and website development was the highest ($PNI_{modified} = 0.58$), followed by the use of statistical and research software packages ($PNI_{modified} = 0.55$), the picture software applications ($PNI_{modified} = 0.52$), the use of multimedia ($PNI_{modified} = 0.48$), the application development on Smartphone ($PNI_{modified} = 0.28$), the data storage ($PNI_{modified} = 0.13$), and the use of Microsoft Office and documents ($PNI_{modified} = 0.07$) respectively. The unnecessary knowledge for community members encompassed the search for knowledge for self-development and network communication ($PNI_{modified} = -0.02$) and the use of Google Applications ($PNI_{modified} = -0.01$) respectively. The results of prioritizing the needs by $PNI_{modified}$ were as follows.

Table 1: The result of prioritizing the needs by $PNI_{modified}$ categorized by groups

No.	Needs	$PNI_{modified}$
1	Animation development	0.58
2	Website development	0.58
3	The use of statistical and research software packages	0.55
4	The picture software applications	0.52
5	The use of multimedia	0.48
6	The application development on Smartphone	0.28
7	The data storage	0.13
8	The use of Microsoft Office and documents	0.07
9	The search for knowledge for self-development	0.02
10	The use of Google Applications	(0.01)
11	The communication through ICT networking	(0.02)

From Table 1, the highest needs for knowledge regarding the use of ICT network of the community members for self-development were animation and website development ($PNI_{modified} = 0.58$), followed by the use of statistical and research software packages ($PNI_{modified} = 0.55$), the picture software applications ($PNI_{modified} = 0.52$), the use of

multimedia ($PNI_{modified}=0.48$), the application development on Smartphone ($PNI_{modified}=0.28$), the data storage ($PNI_{modified}=0.13$), the use of Microsoft Office and documents ($PNI_{modified}=0.07$), the search for knowledge for self-development ($PNI_{modified}=0.02$), the use of Google Applications ($PNI_{modified}=-0.01$), the communication through ICT networking ($PNI_{modified}=-0.02$) respectively. And when considered needs assessment on the use of ICT network of the community members for self-development by topics of needs, the overall picture can be shown below.

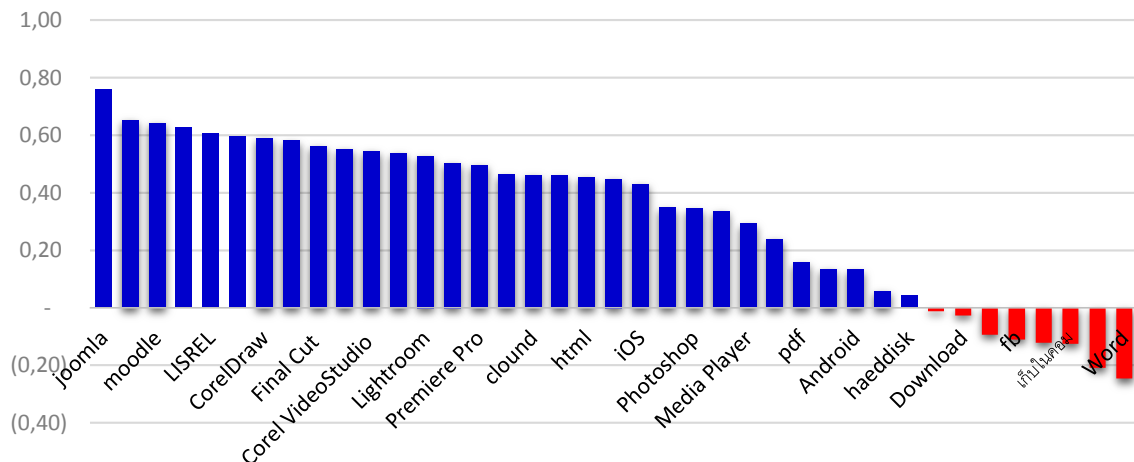


Figure 1. Needs assessment on knowledge regarding the use of ICT network of the community members for self-development

Figure 1 shows that the community members need the knowledge on Joomla website development the most ($PNI_{modified}=0.76$), followed by those with the needs more than 0.5, for instance, Moodle ($PNI_{modified}=0.64$), Maya ($PNI_{modified}=0.63$), LISREL MODEL ($PNI_{modified}=0.61$), CorelDRAW and AutoCAD ($PNI_{modified}=0.59$), BMDP-PC ($PNI_{modified}=0.58$), Final Cut ($PNI_{modified}=0.56$), STATPACK and Corel VideoStudio ($PNI_{modified}=0.55$), Illustrator ($PNI_{modified}=0.54$), Lightroom ($PNI_{modified}=0.53$), Sony Vegas and Premiere Pro ($PNI_{modified}=0.50$) respectively.

Table 2: Needs categorized by the groups of monthly income

Needs	PNI _{modified} categorized by the groups of monthly income (baht)			
	Less than 10,000	10,001-30,000	30,001-50,000	From 50,001 or higher
The search for information for self-development	0.17	0.12	0.19	0.20
The data storage	0.21	0.29	0.32	0.26
The communication through ICT networking	0.22	0.16	0.27	0.34
Website development	0.57	0.64	0.74	0.77
The application development on Smartphone	0.40	0.42	0.55	0.40
the use of Google Applications	0.30	0.27	0.21	0.50
the use of Microsoft Office and documents	0.28	0.34	0.33	0.51
the picture software applications	0.35	0.56	0.49	0.71
Animation development	0.39	0.67	0.54	0.88
the use of multimedia	0.47	0.49	0.45	0.72
the use of statistical and research software packages	0.36	0.62	0.49	0.91
Average	0.34	0.42	0.42	0.56

From Table 2, the highest need for knowledge regarding the use of ICT network of the community members for self-development categorized by the groups of monthly income was from the group whose monthly income was from 50,001 baht or higher ($PNI_{modified}=0.56$), followed by those whose monthly income was between 10,001-30,000 baht and 30,001-50,000 baht ($PNI_{modified}=0.42$), and those whose monthly income was less than 10,000 baht respectively. When considered the knowledge needs regarding the use of ICT network of the community members for self-development categorized by the groups of monthly income, it was found that those whose

monthly income was less than 10,000 baht need the knowledge on website development the most ($PNI_{\text{modified}} = 0.57$). The group of community members whose monthly income was between 10,001-30,000 baht needed the knowledge on the animation development the most ($PNI_{\text{modified}} = 0.67$). The group of community members whose monthly income was between 30,001-50,000 baht needed the knowledge on website development the most ($PNI_{\text{modified}} = 0.74$). The group of community members whose monthly income was from 50,001 baht or higher need the knowledge on website development the most ($PNI_{\text{modified}} = 0.91$).

CONCLUSION

The basic information of the informants who answered the needs assessment form on the knowledge regarding the use of ICT network of community members for self-development was as follows. Among the 100 informants, 71 percent were female and 29 percent were male. Most of them (89 percent) were government officials. The rest were students (8 percent) and employees from private sector (3 percent). 90 percent of them work about learning management. Their monthly income was varied: 10,001-30,000 baht (49 percent), 30,001-50,000 baht (25 percent), less than 10,000 baht (17 percent), and more than 50,000 baht (9 percent). Most of them (57 percent) accessed ICT every day, and 46 percent of them spent 1-3 hours daily on ICT. 74 percent of them used smart phones to access ICT. 12 percent of the informants accessed ICT from desk-top computers.

The result of needs assessment on the use of ICT network of community members for self-development by was low ($PNI_{\text{modified}} = 0.29$). When considered in detail, it was found that the needs for animation and website development was the highest ($PNI_{\text{modified}} = 0.58$), followed by the use of statistical and research software packages ($PNI_{\text{modified}} = 0.55$), the picture software applications ($PNI_{\text{modified}} = 0.52$), the use of multimedia ($PNI_{\text{modified}} = 0.48$), the application development on Smartphone ($PNI_{\text{modified}} = 0.28$), the data storage ($PNI_{\text{modified}} = 0.13$), and the use of Microsoft Office and documents ($PNI_{\text{modified}} = 0.07$) respectively. The unnecessary knowledge for community members encompassed the search for knowledge for self-development and network communication ($PNI_{\text{modified}} = -0.02$) and the use of Google Applications ($PNI_{\text{modified}} = -0.01$) respectively.

The results of prioritizing the needs by PNI_{modified} were as follows. The highest needs for knowledge regarding the use of ICT network of the community members for self-development were animation and website development ($PNI_{\text{modified}} = 0.58$), followed by the use of statistical and research software packages ($PNI_{\text{modified}} = 0.55$), the picture software applications ($PNI_{\text{modified}} = 0.52$), the use of multimedia ($PNI_{\text{modified}} = 0.48$), the application development on Smartphone ($PNI_{\text{modified}} = 0.28$), the data storage ($PNI_{\text{modified}} = 0.13$), the use of Microsoft Office and documents ($PNI_{\text{modified}} = 0.07$), the search for knowledge for self-development ($PNI_{\text{modified}} = 0.02$), the use of Google Applications ($PNI_{\text{modified}} = -0.01$), The communication through ICT networking ($PNI_{\text{modified}} = -0.02$) respectively. The result of the needs assessment on the use of ICT network of the community members for self-development by topics of needs, the overall picture revealed that the community members need the knowledge on Joomla website development the most ($PNI_{\text{modified}} = 0.76$), followed by those with the needs more than 0.5, for instance, Moodle ($PNI_{\text{modified}} = 0.64$), Maya ($PNI_{\text{modified}} = 0.63$), LISREL MODEL ($PNI_{\text{modified}} = 0.61$), CorelDRAW and AutoCAD ($PNI_{\text{modified}} = 0.59$), BMDP-PC ($PNI_{\text{modified}} = 0.58$), Final Cut ($PNI_{\text{modified}} = 0.56$), STATPACK and Corel VideoStudio ($PNI_{\text{modified}} = 0.55$), Illustrator ($PNI_{\text{modified}} = 0.54$), Lightroom ($PNI_{\text{modified}} = 0.53$), Sony Vegas and Premiere Pro ($PNI_{\text{modified}} = 0.50$) respectively.

The result of the difference of needs analyzed by PNI_{modified} and categorized by economic and social status was as follows. The highest need for knowledge regarding the use of ICT network of the community members for self-development categorized by the groups of monthly income was from the group whose monthly income was from 50,001 baht or higher ($PNI_{\text{modified}} = 0.56$), followed by those whose monthly income was between 10,001-30,000 baht and 30,001-50,000 baht ($PNI_{\text{modified}} = 0.42$), and those whose monthly income was less than 10,000 baht respectively. When considered the knowledge needs regarding the use of ICT network of the community members for self-development categorized by the groups of monthly income, it was found that those whose monthly income was less than 10,000 baht need the knowledge on website development the most ($PNI_{\text{modified}} = 0.57$). The group of community members whose monthly income was between 10,001-30,000 baht needed the knowledge on the animation development the most ($PNI_{\text{modified}} = 0.67$). The group of community members whose monthly income was between 30,001-50,000 baht needed the knowledge on website development the most ($PNI_{\text{modified}} = 0.74$). The group of community members whose monthly income was from 50,001 baht or higher need the knowledge on website development the most ($PNI_{\text{modified}} = 0.91$).

DISCUSSION

From the research result, the overall picture of needs for using ICT network of the community members for self-development was low ($PNI_{\text{modified}} = 0.29$) which was not compliance with the research hypothesis that expected

the needs in knowledge regarding the use of ICT network of community members for self-development at the high level. This might be because at the present time, the knowledge regarding the use of ICT network is widely spread among people. Communicating with others, searching for information, and exchanging knowledge can be done freely. For instance, online communication in Thai society has been changed the use of ICT network at the high level, especially, the use of online social network. This is compliance with the study of needs assessment on online society network in teaching and learning for undergraduates which reveals that the undergraduates of universities in the jurisdiction of Ministry of Education are members of online social network 100 percent (Chawin Chukusol, 2013). This reflects the importance of needs on knowledge regarding the use of ICT network that is compliance with the theory of andragogy for adult learners with the belief that learners will learn best when they can manipulate the methods and techniques of learning by themselves (Knowles, 1975) with the advanced technology that leads to ability to access information. Therefore, the community members need knowledge on ICT network and the ability to access information through the advanced technology like smartphone. Smartphone is a portable device (defined as Personal Digital Assistant: PDA) which is very convenient to use. Around 74 percent of people are using smartphone to access varieties of information. As smartphone is used as personal device, it derives from the intrinsic motivation e.g. self-esteem, curiosity, the wish for success and the satisfaction of that success. This leads to the result that needs in knowledge on information search for self-development appears negative ($PNI_{modified} = -0.02$). When considered the prioritizing of importance of needs categorized by groups which found that the highest index of needs goes to animation and website development ($PNI_{modified}=0.58$). When considered by economic and social status, the informants whose monthly income was between 30,001-50,000 baht need the knowledge on website development the most ($PNI_{modified}=0.74$), followed by the use of statistical and research software packages ($PNI_{modified}=0.55$) and the picture software applications ($PNI_{modified}=0.52$). These programs are complicated in use, but essential for the actual practice of working people, therefore, it is challenging and still of the high level needs. Recommendations are (1) Should be further study to research and develop guidelines for dissemination of knowledge in using ICT networks to community. (2) Should be further study to manage training for using ICT networks in community nationwide.

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Negative Effects of Barriers to Seeking Psychological Help and Their Association With Depression, Anxiety, Stress, and Self-Efficacy Among College Students

Nursel TOPKAYA

Faculty of Education

Ondokuz Mayıs University

Turkey

nursel.topkaya@omu.edu.tr

Ertuğrul ŞAHİN

Faculty of Education

Amasya University

Turkey

ertugrulsahn@gmail.com

Yaşar BARUT

Faculty of Education

Ondokuz Mayıs University

Turkey

ybarut@omu.edu.tr

ABSTRACT

Research has consistently shown that barriers to seeking psychological help are multidimensional and negatively associated with formal help-seeking. However, studies examining the negative effects of barriers to seeking psychological help among diverse samples are scarce. Thus, the purpose of this study is to examine the negative effects of barriers to seeking psychological help among Turkish college students, in particular investigating the association between such barriers and depression, anxiety, stress, and self-efficacy. Participants included 529 college students ($M=21.48$, 63% female) recruited from various faculties in a university in the Central Black Sea Region of Turkey. They completed the Depression Anxiety Stress Scale-21, the General Self-Efficacy Scale, the Barriers to Seeking Psychological Help Scale, and a personal information form. One-way multivariate analyses of variance (MANOVA) and hierarchical multiple regression analyses were performed. One-way ANOVA results showed that students who had previously sought psychological help had significantly higher depression, anxiety, and stress scores than other students and male participants had higher general self-efficacy scores than female participants. Hierarchical multiple regression analyses also revealed that the dimensions of barriers to seeking psychological help were positively correlated with depression, anxiety, and stress and negatively correlated with general self-efficacy after controlling for gender and previous help-seeking experience. Reducing barriers related to seeking formal psychological help may help to foster psychological well-being among Turkish college students.

Keywords: Barriers to seeking psychological help, depression, anxiety, stress, self-efficacy, college students, Turkey.

INTRODUCTION

Research has shown that college students face various mental health problems that may require receiving psychological help (Kessler et al., 2005). Studies investigating help-seeking behaviors among various age groups have also suggested that young people between 18 and 24 years old are less likely to seek psychological help compared to middle aged adults, and generally, the ratio of psychological help seeking was lower among young people, especially in college aged students (Bijl & Ravelli, 2000; Reavley, Cvetkovski, Jorm, & Lubman, 2010; Ryan, Shochet, & Stallman, 2010). These findings indicate that college students may avoid using psychological help services due to certain perceived barriers towards receiving psychological help. Barriers related to seeking psychological help are defined as a general unwillingness to receive psychological help or factors hindering an individual's actual psychological help-seeking behavior (Kuhl, Jarkon-Horlick, & Morrissey, 1997).

A study conducted with 4,027 participants aged between 19 and 64 years old to determine the barriers to seeking psychological help reported that 37% of males and 27% of females had experienced such barriers (Andersson, Moore, Hensing, Krantz, & Staland-Nyman, 2014). Another study conducted on women with antenatal depression stated that 52.9% of the participants, who had no previous psychological help experience, reported at least five significant barriers that prevented them from receiving any psychological help (Fonseca, Gorayeb, & Canavarro, 2015). Similarly, research conducted on college students emphasized that the students perceived various barriers and, therefore, avoided receiving psychological help (Vanheusden et al., 2008). The developmental period of college students involves significant changes, including starting college life by leaving home, job and occupation selection, academic problems, romantic and emotional issues, etc., which leave college students at risk for mental

health problems, such as depression, anxiety, and stress (Blanco et al., 2008). Additionally, anxiety disorders, mood disorders, substance abuse, and non-emotional psychosis often start in adolescence or young adulthood corresponding to the college education years (Kessler et al., 2007). Therefore, it is important to investigate correlates of barriers to receiving psychological help among college students.

Factors affecting receiving psychological help could be explained under behavioral theoretical models with three factors, namely predisposing factors, enabling factors, and perceived need. Predisposing factors are demographical variables and pre-existing factors that contribute to the possibility of receiving psychological help. Enabler factors, which include income, social security, family support, and social resources, could either strengthen or lessen the likelihood of receiving psychological help. Perceived need factors include perceived and actual needs related to using mental health services for psychological stress and psychological diagnosis (Zinzow et al., 2013).

Previous research has shown that there are various barriers related to receiving psychological help among college students. These barriers include, but are not limited to, stigmatization related to receiving psychological help (Shkcmibi, Melonashi, & Fanaj, 2015; Vogel, Wade, & Hackler, 2007), negative attitude towards receiving psychological help (Vanheusden et al., 2008), inability to notice the need for receiving psychological help (Andersson et al., 2013), the individual's belief that he/she can overcome his/her problems without any professional help (Jennings et al., 2015), difficulties related to self-disclosure, anxiety towards the benefits of seeking help from a mental health professional, distrust of the mental health professional (Calloway, Kelly, & Ward-Smith, 2012), and a lack of knowledge about mental health services (Kim, Saw, & Zane, 2015). In addition to the previous research mentioned above, Topkaya, Şahin, and Meydan (2017) found five salient barriers among college students related to receiving psychological help, namely fear of being stigmatized by society, trust in the mental health professional, difficulties in self-disclosure, perceived devaluation, and lack of knowledge.

Self-efficacy could be regarded as one of the barriers to receiving psychological help, as it relates to the beliefs and expectations that some behaviors are necessary to achieve certain outcomes (Bandura, 1997). Self-efficacy determines the tenacity and durability of an individual towards such barriers as well as the effort to overcome them (Bronstein, 2014). Therefore, individuals with higher self-efficacy are more likely to work harder when struggling with various barriers. A study comparing people with high and low self-efficacy found that people with low self-efficacy are more likely to experience mental health problems compared to people with high self-efficacy (Andersson et al., 2014).

Psychological distress is defined as a mental state characterised by anxiety and/or depressive symptoms (Sun et al., 2016). Mental health problems are becoming a significant problem worldwide. According to the predictions of the World Health Organization (WHO), by 2020, depression will become the second most common disease that causes disability in humans (WHO, 2001). Similarly, anxiety and stress are among the most significant psychological problems experienced by many college students (Blanco et al., 2008; Reavley, Cvetkovski, Jorm, & Lubman, 2010). Research has shown that psychological problems, such as depression, anxiety, and stress, lower quality of life and affect socio-economic wellbeing, education, and opportunities for employment (Lund et al., 2010). Therefore, it is important to determine whether there is a significant relationship between the relevant psychological problems and barriers to receiving psychological help. On the other hand, general self-efficacy could be individually significant both in terms of the likelihood of receiving psychological help and for emotional health as self-efficacy requires power and motivation to act, even when the individual experiences psychological problems and disorders (Andersson et al., 2014). Additionally, it is evident that in order to acquire a more comprehensive understanding of why most college students with mental health difficulties prefer not to seek psychological help, prior research has investigated the association between factors regarded as potentially important barriers and help seeking, but there is limited knowledge about whether there is a relationship between self-efficacy and barriers to receiving psychological help. Thus, the objective of this study is to investigate the relationship between barriers to receiving psychological help and self-efficacy, depression, anxiety, and stress levels among college students.

METHOD

Research Design

This correlation study investigated the relationship between the barriers to receiving psychological help and self-efficacy, depression, anxiety, and stress (Barker, Pistrang, & Elliott, 2016).

Participants

Data were initially collected from 567 college students in the different faculties and departments of a university located in the Central Black Sea Region of Turkey. However, participants with any missing data from the socio-demographic variables, except the age variable ($n=12$); participants who did not answer 20% or more on any scale items ($n=18$); and eight multivariate outliers were excluded from the dataset, resulting in a remainder of 529 participants. College students in this study were selected using convenience sampling. There were 332 (62.8%) female and 197 (37.2%) male college students who participated. The students who reported their age ($n=373$) showed that the ages ranged between 18 and 52, with an average age of 21.48 ($S.D.=3.43$). There were 152 students in freshman year, 97 (18.3%) in sophomore year, 157 (29.7%) in junior year, and 123 (23.3%) in senior

year. Most of the students had not received any previous psychological help (81.5%, $n=431$). The students who received previous psychological help rated the help-seeking experience as *It was not helpful at all* (23.5%, $n=23$), *It was helpful a bit* (40.8%, $n=40$), *It was helpful significantly* (29.5%, $n=29$), and *It was extremely helpful* (6.1%, $n=6$).

Scales

Personal Information Form (PIF): A PIF was used to collect information about the students' sociodemographic characteristics. Specifically, they responded to questions about their faculty, department, gender, age, grade level, and whether they had received any psychological help before.

Depression Anxiety Stress Scale-21 (DASS-21): To measure the depression, anxiety, and stress levels of the college students, the DASS developed by Lovibond and Lovibond (1995) was used in this study. The DASS consists of a long form with 42 items and a short form with 21 items. The DASS-42 translation, validity, and reliability study was conducted on the Turkish language version by Bilgel and Bayram (2010). The DASS-21 used in this study derived items from the DASS-42 (Bilgel & Bayram, 2010). The DASS-21 consists of three subscales: depression, anxiety, and stress. Each subscale is comprised of seven items. The validity and reliability of this scale for Turkish college students was determined by the first and second researchers as part of an ongoing research project and will be reported in another study. However, the initial findings of DASS-21 regarding Turkish college students showed that the Turkish form of DASS-21 has a similar factor structure to that in the original form and the reliability of the scale was adequate. More information about the validity and reliability of Turkish DASS-21 can be obtained by request from the first and second researcher. On the scale, participants rated how much each item applied to them in the past week on a 4-point Likert scale, ranging from 1 (Never) to 4 (Almost Always). Possible scores ranged between 0 and 21 for the depression, anxiety, and stress scales. Each subscale's items were summed separately. Higher scores indicated a higher level of depression, anxiety, and stress for each dimension, respectively. Sample items from the depression, anxiety, and stress subscale include "I felt down and blue," "I experienced trembling (e.g., in the hands)," "I tended to over-react to situations."

General Self-Efficacy Scale (GSES): To determine the self-efficacy level of the college students, the GSES developed by Schwarzer and Jerusalem (1995) was used. The GSES measures participants' competence when struggling with new and difficult tasks in different settings. It was originally developed in Germany after twenty years of work and translated into more than 30 languages. The Turkish translation was undertaken by Yeşilay, Jerusalem, and Schwarzer (2017) as part of an international study. The validity and reliability of the GSES was also investigated by İlhan (2005), who found that GSES responses consists of a unidimensional factor structure similar to the original factor structure, and total variance explained by the GSES was 44%. The GSES item factor loadings also ranged between .42 and .75. Additionally, the Cronbach alpha (α) internal consistency coefficient reported by İlhan (2005) was .76. This scale consists of ten items, each item rated on a 4-point Likert type scale ranging from *Not at all true* (1) to *Exactly true* (4). Responses to GSES items were summed to yield a total score that ranged between 10 and 40. Higher scores indicate greater self-efficacy. The internal consistency coefficient (α) of the scale scores calculated in this study was .88. An example item from the scale is "I can solve most problems if I invest the necessary effort."

Barriers to Seeking Psychological Help Scale (BSPHS): The barriers to seeking psychological help perceived by the students were measured with the BSPHS developed by Topkaya et al. (2017). This scale consists of five subscales, namely fear of being stigmatized by society, trust in the mental health professional, difficulties in self-disclosure, perceived devaluation, and lack of knowledge (Topkaya et al., 2017). The validity and reliability for the BSPHS were investigated on college students. Exploratory factor analysis results suggested that the BSPHS had a five-factor structure that explained 66.55% of the total scale variance, and this factor structure was cross-validated with confirmatory factor analysis in a different sample (χ^2/df : 1.269, (CFI), Root Mean Square Error of Approximation (RMSEA): .035, Comparative Fit Index (CFI): .972, Tucker-Lewis Index (TLI): .964, Standardized Root Mean Square Residual (SRMR): .053). Test-retest reliability of this scale across three weeks ranged between .56 (perceived depreciation) and .71 (difficulty of self-disclosure). The internal consistency of the scale for this study was found to be as follows: .79 for the fear of being stigmatized by society (4 items), .78 for trust in the mental health professional (4 items), .74 for difficulties in self-disclosure (3 items), .72 for perceived devaluation (3 items), and .45 for lack of knowledge (3 items). Although the Cronbach alpha internal consistency coefficient for the lack of knowledge subscale was lower, this coefficient was similar to the Cronbach alpha value in Topkaya et al. (2017) (Study 2). Additionally, according to Briggs and Cheek (1986), when the items were limited in a scale, such as the lack of knowledge subscale, the average interitem correlation values of the items should be considered rather than the internal consistency of the scale, and this value should be between .2 and .4. In this study, the average interitem correlation for the lack of knowledge subscale was .22, suggesting that the subscale is adequate for conducting statistical analyses.

Procedure

The data for this study were collected from April 2017 to June 2017. The questionnaires, including the PIF, DASS-21, GSES, and BSPHS, were distributed to students during their regular class hours. The students were

informed about the study's purpose, that participation in the study was voluntary, the answers would remain anonymous, and the participants could withdraw from the study without any consequences. Informed consent was obtained from all participants; no student refused to participate. Students completed the questionnaire in approximately thirty minutes.

Statistical Analysis

All statistical analyses were performed using the SPSS 23 program. Before the analyses, the accuracy of the data, missing values, outliers, and assumptions of statistical analysis were checked. First, missing values in the dataset were examined; the missing values on the item level were from 0.0% to 1.1%. Inspection of missing values suggested that they generally occurred in DASS-21 at the end of the scale. This could be related to low concentration levels or tiredness among the participants. In order to handle missing data, we used the expectation maximization (EM) missing data estimation algorithm, a widely recommended approach to estimate missing data in counseling literature as operationalized in SPSS 23. There was no univariate outlier in the dataset. However, eight multivariate outliers were detected using Mahabolinis distances, as suggested by Tabachnick and Fidell (2012), and excluded from dataset. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, homogeneity of variance and covariance matrices, linearity, multicollinearity, and homoscedasticity in appropriate analyses (Ho, 2013; Tabachnick & Fidell, 2012). One-way multivariate analysis of variance (MANOVA) was used to examine differences in depression, anxiety, stress, and general self-efficacy scores with respect to gender and previous help-seeking experience, respectively. Hierarchical Multiple Regression Analysis was used to examine the ability of barriers to seeking psychological help to predict levels of depression, anxiety, stress, and self-efficacy, respectively, after controlling for gender and previous help-seeking experience. The level of statistical significance was set at $p < .05$ in all statistical analyses.

RESULTS

Table 1 reports depression, anxiety, stress scale means, and standard deviations with respect to gender and previous help-seeking experience.

Table 1 Descriptive Statistics

Variable	Depression		Anxiety		Stress		Self-efficacy	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Gender								
Female	5.99	4.57	5.27	3.88	7.51 _a	3.78	26.20 _b	5.57
Male	5.77	4.21	4.85	3.75	6.83 _b	3.89	28.80 _a	5.89
Previous Help-Seeking								
Yes	7.11 _a	4.45	6.49 _a	3.96	8.32 _a	4.02	26.82	6.74
No	5.64 _b	4.39	4.80 _b	3.74	7.01 _b	3.75	27.25	5.60

Note. Each number with a subscript in the means indicates a group difference: $a > b$. There was no difference in the other groups.

A series of MANOVAs was conducted to examine possible mean differences between depression, anxiety, stress, and general self-efficacy scores with respect to the sex of participants and previous help-seeking experience. One-way MANOVA results showed that the multivariate main effects of sex (Wilk's Lambda=.94, $F(4, 524)=7.92$, $p < .001$, partial $\eta^2=.057$) and previous help-seeking experience were significant (Wilk's Lambda=.97, $F(4, 524)=4.05$, $p=.003$, partial $\eta^2=.030$). A series of one-way ANOVAs was performed as a follow-up test to the MANOVA for sex and previous help-seeking experience independent variables. One-way ANOVAs showed that the main effects of depression ($F(1, 527)=.31$, $p=.575$, partial $\eta^2=.001$) and anxiety ($F(1, 527)=1.48$, $p=.225$, partial $\eta^2=.003$) were not significant based on sex. However, stress ($F(1, 527)=3.99$, $p=.046$, partial $\eta^2=.008$) and general self-efficacy scores ($F(1, 527)=25.72$, $p < .001$, partial $\eta^2=.047$) were significantly different. As seen in Table 1, female students had much higher stress scores than male students, and male students had higher general self-efficacy scores than female students. Regarding previous help-seeking experience, one-way ANOVAs showed that depression ($F(1, 527)=8.91$, $p=.003$, partial $\eta^2=.017$), anxiety ($F(1, 527)=15.99$, $p < .001$, partial $\eta^2=.029$), and stress ($F(1, 527)=9.52$, $p=.003$, partial $\eta^2=.018$) scores were significantly different. However, no significant differences were found for general self-efficacy scores ($F(1, 527)=.42$, $p=.517$, partial $\eta^2=.001$). As seen in Table 1, students who previously sought psychological help had significantly higher depression, anxiety, and stress scores than other students.

A series of hierarchical multiple regressions were calculated to assess the ability of barriers to seeking psychological help to predict levels of depression, anxiety, stress, and general self-efficacy, respectively, after controlling for the influence of sex and previous help-seeking experience. Hierarchical multiple regression

analysis results are presented in Table 2 for depression scores, Table 3 for anxiety scores, Table 4 for stress scores, and Table 5 for general self-efficacy scores. Participants' sex and previous help-seeking experience were entered into Step 1 in all analyses.

As seen in Table 2, sex and previous help-seeking experience explained 2% of the variance in depression scores. After entry of the barriers to seeking psychological help subscales in Step 2, the total variance explained by the model was 12% ($F(7, 521)=9.74, p < .001$). Barriers to seeking psychological help subscales explained an additional 10% of the variance in depression scores, after controlling for sex and previous help-seeking experience ($\Delta R^2=.10, \Delta F(5, 521)=11.61, p < .001$). In the final model, previous help-seeking experience ($\beta=-.16, t=-3.75, p < .001$), difficulties in self-disclosure ($\beta=.11, t=2.20, p < .05$), perceived devaluation ($\beta=.15, t=2.20, p < .05$), and lack of knowledge ($\beta=.11, t=2.07, p < .05$) were statistically significant. Students with high scores in difficulties in self-disclosure, perceived devaluation, and lack of knowledge were more likely to experience depressive symptoms after controlling for sex and previous help-seeking experience.

Table 2 Hierarchical multiple regression analysis results for depression

Variable	Step 1					Step 2				
	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Constant	8.90	1.07		8.34	.001	4.81	1.16		4.14	.001
Sex	-.23	.94	-.03	-.58	.562	-.39	.39	-.04	-1.00	.316
Prev. help-seeking	-1.47	.49	-.13	-2.99	.003	-1.78	.48	-.16	-3.75	.001
Fear of being stig.						-0.48	.08	-.04	-.62	.533
Trust in the mental health						.08	.07	.06	1.13	.258
Self-disclosure						.17	.08	.11	2.20	.028
Perceived devaluation						.27	.11	.15	2.55	.011
Lack of knowledge						.21	.10	.11	2.07	.039
R^2		.02					.12			
Adj R^2		.01					.10			
<i>SE</i>		4.40					4.20			
$F(df_n, df_d)$		2,526					7,521			

Note. *p* values between .011 and .039 were significant at $p < .05$; $p=.003$ value was significant at $p < .01$; $p=.001$ values were significant at $p < .001$.

Table 3 Hierarchical multiple regression analysis results for anxiety

Variable	Step 1					Step 2				
	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Constant	8.77	.92		9.58	.001	6.23	1.01		6.18	.001
Sex	-.43	.34	-.05	-1.25	.211	-.70	.34	-.09	-2.06	.040
Prev. help-seeking	-1.70	.42	-.17	-4.01	.001	-2.01	.41	-.20	-4.86	.001
Fear of being stig.						.10	.07	.08	1.49	.136
Trust in the mental health						.00	.06	.00	.01	.992
Self-disclosure						.03	.07	.02	.34	.735
Perceived devaluation						.24	.09	.15	2.59	.010
Lack of knowledge						.15	.09	.09	1.69	.091
R^2		.03					.11			
Adj R^2		.03					.10			
<i>SE</i>		3.78					3.64			
$F(df_n, df_d)$		2,526					7,521			

Note. $p=.040$ value was significant at $p < .05$; $p=.010$ value was significant at $p < .01^{**}$; $p=.001$ values were significant at $p < .001$.

As seen in Table 3, sex and previous help-seeking experience explained 3% of the variance in anxiety scores. After entry of the barriers to seeking psychological help subscales in Step 2, the total variance explained by the model was 11% ($F(7, 521)=9.11, p < .001$). Barriers to seeking psychological help subscales explained an additional 8% of the variance in anxiety scores, after controlling for sex and previous help-seeking experience ($\Delta R^2=.08, \Delta F(5, 521)=8.97, p < .001$). In the final model, sex ($\beta=-.09, t=-2.06, p < .05$), previous help-seeking experience ($\beta=-.20,$

$t=-2.06, p<.05$), and perceived devaluation ($\beta=.15, t=2.59, p<.05$) were statistically significant. Although the gender variable was not significant in Step 1, it was significant in the final model, indicating that gender may moderate the relationship between anxiety and some dimensions of barriers to seeking psychological help. Moreover, students who had high scores in perceived devaluation were more likely to experience symptoms of anxiety after controlling for sex and previous help-seeking experience.

Table 4 Hierarchical multiple regression analysis results for stress

Variable	Step 1					Step 2				
	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Constant	10.59	.92		11.55	.001	7.45	1.01		7.39	.001
Sex	-.69	.34	-.09	-2.03	.043	-.82	.34	-.10	-2.43	.015
Prev. help-seeking	-1.32	.42	-.13	-3.10	.002	-1.50	.41	-.15	-3.64	.001
Fear of being stig.						-.08	.07	-.07	-1.26	.209
Trust in the mental health						.10	.06	.10	1.72	.086
Self-disclosure						.03	.07	.03	.49	.627
Perceived devaluation						.27	.09	.17	2.90	.004
Lack of knowledge						.20	.09	.12	2.32	.021
R^2		.03					.11			
Adj R^2		.02					.10			
<i>SE</i>		3.79					3.64			
$F(df_n, df_d)$		2,526					7,521			

Note. *p* values from .015 to .043 were significant at $p<.05^*$; *p* values from .002 to .004 were significant at $p<.01$; $p=.001$ values were significant at $p<.001$.

As seen in Table 4, sex and previous help-seeking experience explained 3% of the variance in stress scores entered in Step 1. After entry of the barriers to seeking psychological help subscales in Step 2, the total variance explained by the model was 11% ($F(7, 521)=9.15, p<.001$). Barriers to seeking psychological help subscales explained an additional 8% of the variance in anxiety scores, after controlling for sex and previous help-seeking experience ($\Delta R^2=.08, \Delta F(5, 521)=9.84, p<.001$). In the final model, sex ($\beta=-.10, t=-2.43, p<.05$), previous help-seeking experience ($\beta=-.20, t=-3.64, p<.001$), perceived devaluation ($\beta=.17, t=2.59, p<.05$), and lack of knowledge ($\beta=.12, t=2.32, p<.05$) were statistically significant. In other words, participants who had high scores in perceived devaluation and lack of knowledge were more likely to experience stress symptoms after controlling for sex and previous help-seeking experience.

Table 5 Hierarchical multiple regression analysis results for general self-efficacy

Variable	Step 1					Step 2				
	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Constant	22.81	1.38		16.55	.001	25.20	1.57		16.09	.001
Sex	2.60	.51	.22	5.07	.001	2.50	.52	.21	4.77	.001
Prev. help-seeking	.44	.64	.03	.69	.491	.58	.64	.04	.90	.367
Fear of being stig.						.04	.10	.02	.39	.695
Trust in the mental health						-.06	.09	-.04	-.66	.509
Self-disclosure						-.21	.11	-.10	-1.97	.049
Perceived devaluation						-.17	.14	-.07	-1.20	.229
Lack of knowledge						.09	.13	.04	.67	.502
R^2		.05					.07			
Adj R^2		.04					.06			
<i>SE</i>		5.69					5.65			
$F(df_n, df_d)$		2,526					7,521			

Note. $p=.040$ value was significant at $p<.05$; $p=.010$ value was significant at $p<.01^{**}$; $p=.001$ values were significant at $p<.001$.

Finally, as seen in Table 5, sex and previous help-seeking experience explained 5% of the variance in general self-efficacy scores entered in Step 1. After entry of the barriers to seeking psychological help subscales in Step 2, the total variance explained by the model was 7% ($F(7, 521)=5.56, p<.001$). Barriers to seeking psychological

help subscales explained an additional 2% of the variance in general self-efficacy scores, after controlling for sex and previous help-seeking experience ($\Delta R^2=.02$, $\Delta F(5, 521)=2.48$, $p<.05$). In the final model, sex ($\beta=.21$, $t=4.77$, $p<.001$) and difficulties in self-disclosure ($\beta=-.10$, $t=-1.97$, $p<.05$) were statistically significant. In other words, participants with high scores in difficulties in self-disclosure were more likely to have low self-efficacy after controlling for sex and previous help-seeking experience.

DISCUSSION

The relationship between barriers to seeking psychological help and depression, anxiety, stress, and general self-efficacy in college students was investigated in this study. The results of the present study suggested that female students experienced higher level of stress compared to male students, and male students had higher self-efficacy levels than females. The results of this study were in line with previous non-Western studies showing that self-efficacy levels of male students were generally higher than those of female students (Al Khatib, 2012). Additionally, we found that students who had received previous psychological help had higher depression, anxiety, and stress levels than those who had not received help. However, this result contradicts previous studies showing that receiving counseling and psychological help has numerous benefits for academic, emotional, and psychological problems (Eisenberg, Golberstein, & Gollust, 2007). One of the possible explanations for this result may be that students in this sample generally rated usefulness of help-seeking experience as low. Thus, help-seeking experience may not be enough to reduce their psychological symptoms. An alternative explanation may be that although we collected information about help-seeking experience, we did not collect information about when and how long it lasted. Thus, the effectiveness of help-seeking experience may diminish and psychological symptoms intensify over time. The validity of these explanations can be tested in future investigations.

When we controlled for gender and previous psychological help-seeking experience, we found that students with difficulties in self-disclosure, a high level of perceived devaluation, and a high level of lack of knowledge were more likely to exhibit depressive symptoms. The results of this study support and extend those of previous studies in clinical populations showing that some perceived barriers are common both in individuals diagnosed with mental diseases and healthy individuals. For example, in a study with individuals diagnosed with depression, Andersson et al. (2013) found that stigmatisation and perceived devaluation, lack of knowledge regarding mental illnesses and treatment possibilities, and financial problems were among the most significant barriers in depressed individuals. Fonseca et al.'s (2015) study examining the barriers to receiving psychological help among women with antenatal depression found that barriers related to lack of knowledge were more significant than others.

Study results regarding the anxiety scores also showed that although gender was not a significant predictor of anxiety scores in the first stage of the analysis, it was a significant predictor in the final model. Accordingly, it could be inferred that gender could be a moderator variable in the relationship between anxiety and barriers to receiving psychological help. Additionally, students with high perceived devaluation are more likely to show symptoms of anxiety. Logan, Steel, and Hunt (2016) stated that engagement with mental health professionals directly affects anxiety, as individuals with higher anxiety levels preferred lower levels of interaction in help-seeking processes.

When we controlled for gender and previous psychological help experience, we also found that students with a high level of perceived devaluation and a high level of lack of knowledge were more likely to experience stress symptoms. Such findings are in line with previous research showing that perception of different types of barriers related to psychological help could lead to different types of stress. For example, Calloway et al. (2012) revealed that perception of various barriers to receiving psychological help, such as depreciation and lack of knowledge, may lead to physical and academic stress among college students.

After reviewing the results related to depression, anxiety, and stress scores together, one obvious finding was that perceived devaluation was positively correlated with three different types of negative effects. According to the Modified Labelling Theory (Link, Cullen, Struening, Shrout, & Dohrenwend, 1989), perceived devaluation includes beliefs about the degree to which individuals with mental illness will be reduced in value. An individual who has officially been labelled as having a psychological illness will perceive how others treat those with such diagnoses, leading to higher levels of stress, anxiety, and depression. According to this theory, individuals also internalize society's perception of mentally ill individuals, which tends to label them as dangerous, inadequate, and unpredictable. If individuals internalize these stereotypes, they will believe that if people knew their diagnosis, they would lose their reputation and be subject to discrimination and devaluation. Thus, individuals tend to adopt coping strategies to hide mental illness and withdraw to avoid the negative consequences of the illness and stigmatisation. Thus, it is obvious that perceived devaluation is a barrier to receiving psychological help; therefore, the possibility of experiencing depression, anxiety, and stress symptoms was higher for individuals with perceived devaluation.

Lastly, when we controlled for gender and previous help-seeking experience, the results of the study showed that students who had difficulty in self-disclosure were more likely to have low self-efficacy levels. This was consistent with previous literature suggesting that individuals with higher self-efficacy levels were more likely to show

higher self-disclosure behaviors, as well as be more open to expressing ideas and emotions (Kumar & Lal, 2006). Vogel, Wade, and Hackler (2007) suggested that individuals who experienced stigmatization due to receiving psychological help reflected such stigmatization behaviors back on themselves, and as a result of this stigmatization process, the individuals experienced low self-esteem and self-efficacy. It is well known that perceived self-efficacy plays a protective role in mental health (Bandura, 2012), but this may only be the case in self-disclosing individuals.

Consequently, this study suggests that barriers to receiving psychological help play an important role in depression, anxiety, stress, and general self-efficacy in college students. Reducing barriers related to seeking formal psychological aid may help to foster psychological well-being among Turkish college students. Informing students and society about possible barriers related to seeking psychological help may also help to alleviate the detrimental effects of not seeking such assistance. University counseling centers and institutions should carry out advertising campaigns aimed at increasing students' knowledge concerning the process of seeking psychological help and to ensure that students are aware of the unreasonable stigmas surrounding such aid in order to reduce the barriers related to seeking psychological help.

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New Approach to Entrepreneurship Education in Primary Schools: The BGENTL

Teresa PAIVA

UDI-Research Unit for Inland Development

Polytechnic of Guarda - Portugal

tpaiva@ipg.pt

Pedro TADEU

UDI-Research Unit for Inland Development

Polytechnic of Guarda - Portugal

ptadeu@ipg.pt

ABSTRACT

The European Union is promoting for more than 3 decades the entrepreneurship education in Europe, for all levels of education. One of the main goals is to strengthen the perspective of lifelong learning of the entrepreneurship education. So, the majority of the European countries are in a process of educational reform and are embedding this type of educational offering. Several methodologies are put in practice with different impact on entrepreneurship competences development and focusing in diverse subareas (e.g. creativity or business) and are applied at different levels of education.

The primary level of education has specific characteristics and challenges, therefore different methodologies have to be applied. Early learning is always a motivation for acquiring behaviours and habits since learning modifies behaviour, cognitive, motor, sensory level, integrating changes in our values and attitudes. Mainly because most of the physical, emotional, psychosocial and cognitive changes occur during childhood and adolescence, projecting here, at this stage, the basis for a good self-esteem and self-confidence.

After an experience of implementing different methodologies and developing several projects, using games to promote learning is proven to achieve positive results in several areas of knowledge and behaviour. Therefore the proposal, here of a new methodology in entrepreneurship education for young children, the Board Game Entrepreneurship Learning (BGENTL) to promote entrepreneurship education to this student's target, based on the use of different board games is appealing. Each one of the games has a specific purpose to develop specific areas related and that integrate what is called an entrepreneurship behaviour. In this paper, we'll present the games and its several stages of this new methodology.

Keywords: entrepreneurship education; Berkeley Model of Entrepreneurship; game based learning

INTRODUCTION

It's now common sense in Europe that Entrepreneurship education is a crucial way to develop the mindsets of young children to become innovators and develop social and commercial ventures in the areas in which they live and work (European Commission, 2016). These skills, knowledge, and attitudes are central to develop an entrepreneurial culture, which is supported by the analysis of the Global Entrepreneurship Monitor (GEM) that shows a strong correlation between perceived entrepreneurial capabilities (skills) and the total early stage entrepreneurial activity (GEM, 2014). The current lack of comprehensive learning outcomes related to entrepreneurship education may be identified as one of the main limitations to the development of effective and high-quality entrepreneurship education (European Commission, 2016). Entrepreneurship education is most commonly taught in upper secondary education, through a variety of approaches, even though is increasingly recognised as a cross-curricular objective in primary education. So it's accepted, for several years now, that entrepreneurship can be taught (Kuratko, 2005), that it's a discipline, that can be learned (Drucker, 1999).

The development of entrepreneurial capabilities, like creativity and auto/self-confidence, could be acquired in earlier ages (pre-schools and primary schools) and is strongly connected to a period of changes in our values and attitudes in the mindset of children. Most of the physical, emotional, psychosocial and cognitive changes occur during this period, thus, the basis for a good auto/self-confidence and a positive attitude

could be launch here during this period. It's very important to start with projects that could connect children with this capabilities.

THEORY BACKGROUND

In research different methods of teaching entrepreneurship are pointed out, all of them with different capacities and more or less effective in the competencies development. What is sure is that any method applied is important to be able to create the entrepreneurial mindset in students and for that, an innovative changing in the content of the course as the process of learning in itself has to be also innovative (Shepard, 2004). The use and the potential of games, here, as a pedagogical tool is not well analysed and has a growing application (Verzat et al., 2009).

The Berkeley Method of Entrepreneurship (BMoE) is a holistic teaching and learning approach that has been tested in students of engineering to become more entrepreneurial and is based on the hypothesis that the mindset of an entrepreneur can be characterized by a set of behavioral patterns and that an inductive game-based teaching approach is a successful vehicle for introducing and re-enforcing these. (Sidhu, et al., 200X). Being an inductive method is organized around "learning" and not around "teaching" (not deductive method), so it stresses how the information, experiences, and knowledge is perceived by the student. In this way, the teacher in the classroom presents and exposes the examples and motivate the student to reflect around the examples, how the concept works and the students should demonstrate comprehension of the examples and reinventing it based on their own point of view. An example of an inductive learning approach is game-based learning, something that has received increased attention lately (Verzat et al., 2009).

In research, we may find works in several areas involving games-based learning (Games-in-Education, 2013). To develop more team and group skills, like games goal-oriented; social game environments; non-digital games that are easy to construct and play; games developed expressly for education; and commercial games. Or to stimulate experiences like role-playing and collaborative problem-solving.

With the BMoE (Sidhu, et al., 2014), the students are trained to frame problems and find ways to solve them and then reflect on what they've learned from the process, it's based on five assumptions:

1. You can learn it only while you are trying to do it;
2. Instructors host the environment for students to interact directly with the problem; Students make their own decisions and learn inductively;
3. Behavior training – through games and exercises;
4. De-emphasis of "grades" and refocus on "goals";
5. Leverage real-world competition.

This model incorporates three main elements; infrastructure, mindset, and tactics. The first and third element is common in different entrepreneurial courses but the mindset element, that concerns the student's behavior and attitude toward entrepreneurship are not found in the majority of the curriculums (Sidhu, et al., 2015). Here some the students are exposed to themes related to culture, social psychology, and mindset. The psychology of being an entrepreneur e.g. trusting, risk assessment, communication, overcoming social barriers, rejection therapy, fail training.

Since BMoE is based on the hypothesis that the mindset of an entrepreneur can be described as a list of behavioral patterns, and an inductive game based teaching approach is a successful vehicle to introduce and re-enforce behavioral patterns to students, the model present a set of 10 behavioral patterns and related them to a set of games to promote the develop and reinforce those patterns.

Figure 1 – 10 Behavioral patterns characterizing entrepreneurs

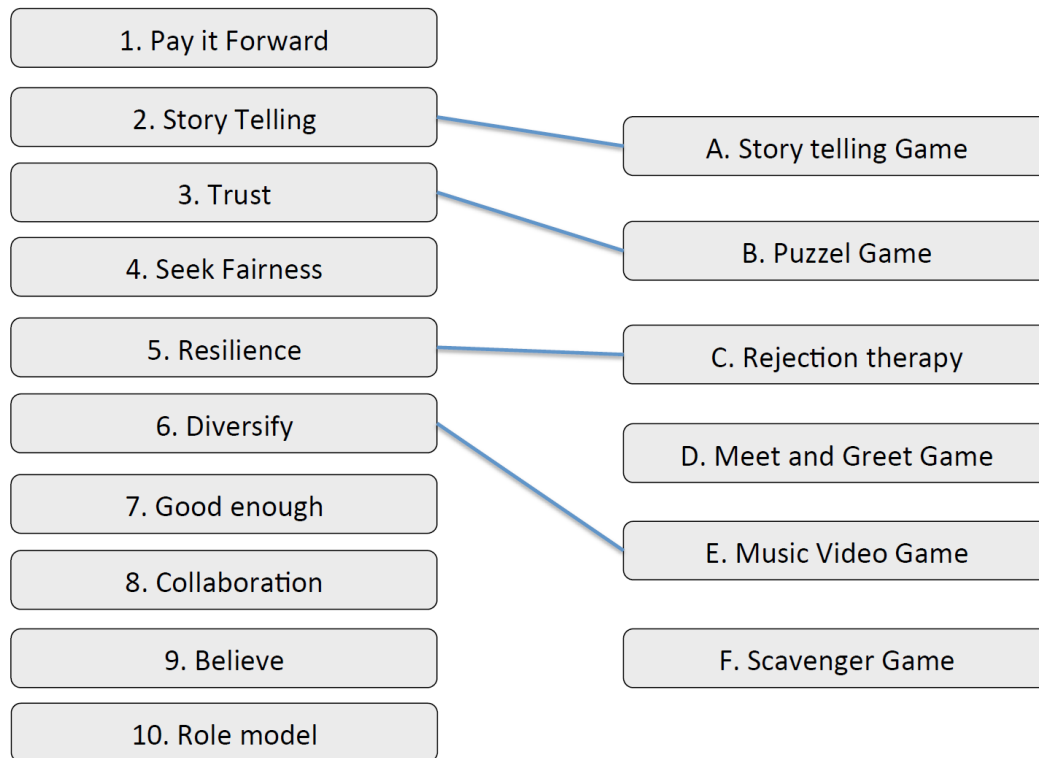
Set of behavioural entrepreneurial patterns	
1	Pay It Forward "Agree that you will get help from others, and pay it forward."
2	Story Telling "Realize a something new by induction, and then learn to communicate the story with a new language."
3	3 Friend or Foe "If you can't tell: Learn to trust others without expecting anything in return."
4	4 Seek Fairness "Make deals that seek fairness (in positive sum transactions), not advantage (in zero sum transactions)."
5	Plan to Fail "It is necessary to be Wrong sometimes. Plan to Experiment. Plan to Fail. (Fail Fast) Analyze, Adapt and repeat. The smarter you think you are, the harder this is going to be."
6	Diversify "Diversify your networks. Connect to people you would not normally, then go and listen. Open Up. And connect them to others."
7	Role Model "Be a role model for other entrepreneurs and innovators."
8	Believe "Believe that you can change the world."
9	Good Enough "Perfection is no good but good enough is perfect."
10	Collaboration "Individual vs team and competitors vs partners"

Fonte: Sidhu, I., Johnsson, C., Singer, K., & Suoranta, M. (2015). A Game-Based Method for Teaching Entrepreneurship. *Applied Innovation Review*, 1(1), 51-65.

As a game-based learning model, BMoE found different games to create the "artificial situation" in which players engage in an artificial conflict against one another or all together against other forces. Games are regulated by rules, which may take the form of procedures, controls, obstacles, or penalties (Verzat et al., 2009). Furthermore, four key components of games are; goals (preset objective, aligned with the teaching objective), rules (limitations on how to achieve the goals), challenges (possibly competition, use of skills, etc. to reinforce behavior), and interaction (a setting for players to interact and communicate and even enjoy the process).

The main objective of this model is to let the games invoke a certain behavior or attitude of the student. After the game, the students should reflect on his/her own behaviour and compare it with that of successful entrepreneurs. The result of the reflection should be a reinforcement of the student's characteristics in becoming, or not, more entrepreneurs.

Figure 2 – Examples of games to invoke specific behaviors



From: Johnsson, Charlotta (2017). A game-based and mindset focused approach for teaching and learning entrepreneurship. Communication presented in SPACE 2017 International Conference, 26-27 April, Oporto

BGENTL (Board Games)

Following the BMoE model, we have developed a specific model for primary school students in our district. The experience achieved with the two past editions of Produz@Ideia (Paiva and Tadeu 2015a) combined with the results from project LEGOMATKIND (project to develop Problem Solving skills in Pre-School <http://legomatkina.blogspot.pt/>) aloud the possibility of gathering an important background related to the use of board games at an earlier stage as an effective tool to develop specific capacities.

Improving students problem solving abilities since earlier ages is important in terms of their adaptation to the real life. While preparing programs, if problem solving takes part in all activities, children's abilities of analysis, synthesis, and multi- directional thinking will improve (Zembat and Unutkan, 2003). The BGENTL (Board Game Entrepreneurship Learning) model intends to use this powerful capacity of board games in such way that they will help to achived the following behaviours that we consider are the most important in earlier ages:

- Pay it forward (the interaction with other players could grant leverage since you payed that help);
- Story telling (being able to communicate ideas , it's one of the most important aspects of development in earlier ages);
- Resilience (don't be afraid of test your ideas and lose, the capacity of going forward and learn with mistakes);
- Collaboration (the success only comes from colaboration, life it's not spent in an island, team work and partnership play an important role);

To achieve an individual, or group, of behaviours, we present board games that could be use. The process of implementation inside the classroom could split the class in groups or use the total group, according to the board game to be play, the group, and the behaviour to experience.

Presenting the list with their specifications.

TIME'S UP KIDS

From the description in <https://boardgamegeek.com/boardgame/174219/times-kids>:

Time's Up! Kids features the familiar Time's Up! gameplay, with players giving clues as in charades in order to get their teammates to guess a word or phrase. What differs with Time's Up! Kids, however, is that the cards feature only images with no text! The game lasts two rounds with players using the same set of cards in both rounds. In the first round, players can describe the cards in order to give clues to teammates, while in the second round they can only mime clues. Whichever team scores the most points wins!

Figure 3 – TIME'S UP KIDS



From: (<https://boardgamegeek.com/image/2602571/times-kids>)

The purpose of using this board game is to take advantage of the characteristics of the game itself, the cards allow the change of the normal rules of the game. The elements present on it let to perform a story telling action by shuffling and distributing a group of 10 cards to 10 students from the classroom and ask them to construct a story. They should use the total number of cards to make an understandable story starting always from the previous colleague while repeting the story since the beginning, meaning concentration, attention and respect.

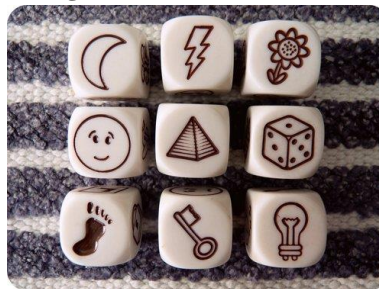
STORY CUBES

From the description in <https://boardgamegeek.com/boardgame/20545/rorys-story-cubes>:

Each jumbo 1" cube has 6 images or icons, with a total of 54 all-different hand-inlaid images that can be mixed in over 10 million ways. You roll all 9 cubes to generate 9 random images and then use these to invent a story that starts with "Once upon a time..." and uses all 9 elements as part of your narrative.

Full instructions include several other ways to use the cubes to solve problems, break up writer's block, enhance your imagination and heighten your ability to find unifying themes among the diverse images. Interpret or get at the meanings of your answers more quickly. It's fun, easy, and mind-stretching.

Figure 4 – STORY CUBES



From: (<https://boardgamegeek.com/image/3415309/rorys-story-cubes>)

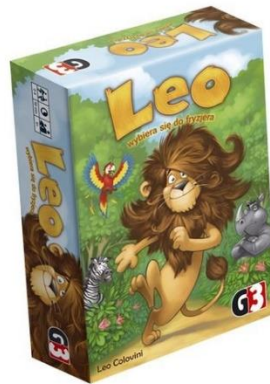
This is an excellent opportunity for students to develop the communication area, while they are constructing a story from the 9 images present in the cubes. The student needs to perform an analysis to the 9 cubes, look carefully and decided where to start the story. The reasoning behind this it's powerfull since students need to combine the ideas in a a way that make sense while there are under pressure from their colleagues that are also trying to develop paralell stories.

LEO

From the description in <https://boardgamegeek.com/boardgame/191538/leo>:

In Leo, players need to help Leo reach the barber shop before it closes for the day. To set up, place all of the animal tiles face down, shuffle them, then create a track that leads from Leo's bed to Bobo's Barber Shop. Set the clock to 8:00 a.m. Each player starts a number of cards in hand. On a turn, a player plays one card to move Leo ahead 1-4 spaces on the track, then reveals the animal tile on which Leo landed. If the tile is the same color as the card just played, the clock remains at the same time as it was at the start of the turn; if the tile has a different color, however, the clock moves ahead 1-5 hours depending on the animal depicted. Poor Leo! If the clock reaches 8:00 p.m. before Leo arrives at the barber shop, the round ends and Leo must return home in order to try again the next day. Turn all face-up tiles face down again. If the players manage to get Leo to the barber shop within five days to get him a trim, they win!

Figure 5 – LEO



From: (<https://boardgamegeek.com/image/2943814/leo>)

This is a cooperative board game that could be played in small group or allows to all the classroom participate in a turn to help the lion to reach the goal. It will allow to test ideas, to perform cooperation among students making them more resilience and learn from the mistakes. The success could arise from the mistakes.

CARCASSONNE JUNIOR

From the description in <https://boardgamegeek.com/boardgame/41010/my-first-carcassonne>:

On 14 July, the national holiday in France, the sheep, chickens and cows are set free in the town of Carcassonne. The children have great fun to catch the animals before dusk. The players in turn draw a landscape tile and place it; unlike in normal Carcassonne, they always match. Amongst other features, the tiles show children in the player colors on the roads. Whenever a road is finished, every player places one of his meeples on each appropriate picture. The first player who manages to place all of his meeples wins the game.

This board game allows to small groups of students test and analyse routes while finding the best places for the tiles in order to extend and close the paths for meeples distribution. Every turn it's need to analyse the terrain and check for the best solution in order to fit the goal of closing paths and making distribution.

BGENTL (Method)

The use of each board game is following the structure provided in the table 1.

Table 1 – Using Board Game

Week 1	Play Game with help of teacher (2h) Discussion and analyse in group (30 m)
Week 2	Play Game without help of teacher (2h) Teachers analyse the behavior of students and their actions interacting sometimes by making questions (during game) Discussion and analyse in group (30 m)
Week 3	Play Game without help of teacher (2h) Teachers analyse the behavior of students and their actions (during game) Discussion and analyse in group (30 m)

The structure will allow to reflect on the actions taken during the time spent on playing, while using the four games in the year.

In the end of each session, the investigator, that is present in the classroom will draw conclusions on the actions of the students with the help of the classroom teacher.

CONCLUSIONS

Since this is an exploratory project that will be apply, there isn't enough data to allow a direct reflection on the positive and negative aspects that arise from the model. But the experience gather from previous projects lead the investigators to design this structure embedded by the need of open new doors into the future of entrepreneurship in earlier stages like is stated in the Entrepreneurship 2020 Action Plan from European Commission (<http://ec.europa.eu/growth/smes/promoting-entrepreneurship/action-plan/>).

...we need more entrepreneurs. The Entrepreneurship 2020 Action Plan is the Commission's answer to challenges brought by the gravest economic crisis in the last 50 years. It is a blueprint for action to unleash Europe's entrepreneurial potential, remove existing obstacles and revolutionize the culture of entrepreneurship in the EU.

To achieve this goal, EU propose three major areas for immediate intervention, two of them are:

- *The Entrepreneurial Education;*
- *Reigniting the culture of entrepreneurship in Europe and nurturing the new generation of entrepreneurs.*

Our project stands in line with this two orientations and we truly believe in the need of plant the seeds of an entrepreneur culture very earlier.

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Yeni

Non-Profit Management Education in Kazakhstan

Bakhytnur OTARBAYEVA

Director of NGO Expert Center,

Almaty Management University,

Kazakhstan

bakhytnur.otarbayeva@almu.edu.kz

INTRODUCTION

In the formation of civil society, a significant role belongs to the non-governmental organizations (NGOs). NGOs in Kazakhstan constitute the country's non-profit sector and the most socially oriented segment of civil society in development. Led by a strong sense of mission and vision, nonprofit organizations play a critical role in the improvement and democratization of society. The official statistics show that there are 18 000 actually functioning NGOs covering different aspects of life in Kazakhstan. However, according to the CIVICUS report conducted by Makhmutova M. and Akhmetova A. in 2011, there are about 8 000 NGOs in Kazakhstan, out of which only 2 000 are active (Makhmutova and Akhmetova, 2011). These active NGO's are especially notable in the fields of education, health care, culture, human rights, environment, gender equality, and the protection of vulnerable social groups. However, the number of active and stable NGOs with a long lifespan and professional staff is rather small.

Nonprofit organizations in Kazakhstan face the problem of sustainability: to be able to sustain themselves over the long term, preserving their ability to fulfill their mission. Sustainability is especially difficult for newly emerging organizations, which do not receive appropriate trainings in areas such as strategic planning and fundraising. Some organizations have been established to take advantage of specific funding opportunities from state, therefore tend to be short term and grant - oriented character. A survey conducted by Civil Alliance of Kazakhstan in 2011 confirmed that a significant number of NGOs have a very short activity experience. From the more than 200 NGOs polled by the Civil Alliance of Kazakhstan, 48.7 percent had been operating for less than five years, a quarter had been working for six to nine years, and only 21.8 percent were established at the end of the 1990s. Moreover, some organizations are passive and exist only on paper (Kabdiyeva A., 2013).

The CSO Sustainability Index, which was developed by United States Agency for International Development, defines the level of development of non-profit sector at the base of a seven-point scale, with 1 representing the highest and 7 the lowest level of sustainability. These levels are clustered into three general stages: Sustainability Enhanced (1 to 3), Sustainability Evolving (3.1 to 5), and Sustainability Impeded (5.1 to 7). A trajectory of Kazakhstan's NGO sustainability from 1999 to 2018 is presented in Table 1 below. In 2015 and 2016, Kazakhstan was not studied by USAID. However, in 2014 the NGO sustainability index for the country was 4.1, indicating a medium level of development (USAID, 2016), which means that a serious work should be done to improve NGO's sustainability in Kazakhstan.

Table 1: Trajectory of Kazakhstan's NGO Sustainability Indicators.

1999	2000	2001	2002	2003	2004/ 2006	2007/ 2010	2011/ 2014	2015	2016
4,8	4,7	4,3	4,1	3,9	4,1	4,0	4,1	N/R	N/R

Source: adapted from USAID (2016).

https://www.usaid.gov/sites/default/files/documents/1866/CSOSI_Report_7-28-17.pdf

The aim of this paper is to discuss new challenges, new trends, new opportunities and perspectives in training for non-profits like as contribution of universities to sustainable development of civil society by providing non-profit management knowledge and skills to leaders of NGO in Kazakhstan. The paper seeks to answer the following questions:

- What kind of challenges do NGOs in Kazakhstan face?
- What are the challenges facing the leaders of NGOs?
- Do leaders of NGOs have enough knowledge and skills to meet these challenges?

- Where can NGO leaders acquire these skills?
- What form of education is most convenient for NGO leaders, considering the vast territory of the country and the cost of transportation?
- What is the role of partnership in empowering NGOs?

The material in this paper comes from case study and focus groups, as well as semi-structured interviews, conducted by the staff of NGO Expert Center in 2016-2017 years with the leaders of NGOs from social and human services, health care, community development, environment and education organizations, university faculty, and alumni of the MBA program “Management in the non-profit sector.” In addition, some information used in this paper was collected from secondary sources. The sources reviewed comprise reports published by international organizations about Kazakhstan, government documents and statistics, and published articles in academic journals.

Many NGO leaders in this study had previously gained practical experience in NGO management, but most of them did not have updated managerial knowledge and competence. When business companies appoint inadequately trained managers to positions of authority, it can be very costly to the bottom line. Poor management is a hidden cost for companies. Promoting managers who are not equipped with basic management and leadership skills can have negative consequences, like non-efficiency, high turnover rate and unhappy customers. Going beyond the basics of business, nonprofit leaders must be highly proficient in advocacy, fundraising, staff management, grant writing and board leadership. The poor management in the nonprofit sector could bring the poor-quality programs and services and as repercussions a loss of stakeholder’s credibility.

Today the non-profit leaders face challenges in highly competitive environment with the institutional development of their organizations, such as financial sustainability, sponsor-dependent habit, and absence of professionalism and loyalty of the staff, necessity to fulfil multi-functional roles. The CIVICUS report conducted by Makhmutova M. and Akhmetova A. (2011), revealed some challenges, such as continued donor dependency and lack of alternative funding options, severe human resource deficiencies, minimal use of strategic planning processes, and an overall sense of limited impact on society as a whole. A major challenge, as Kabdieva A. (2015) considers, is the lack of professional and skilled managers, qualified staff and volunteers. The level of salaries in the sector also does not allow receiving additional professional skills. The weak sustainability of human resources can be seen as the result of limited financial opportunities and resources, as well as short-term project-oriented activities (Makhmutova, Akhmetova, 2011).

One of the latest trends in the non-governmental sector of Kazakhstan is that the state is paying for the services rendered by NGOs because there are less and less grants from international organizations, and the state order comes to replace them. In Kazakhstan during the years of independence (1991 – 2017) the legislative framework for the activity of non-profit sector were laid down:

- A status law governing the basic organizational and legal NGO forms;
- A system of tax incentives and preferences for NGO activities;
- The law “On State Social Order” was accepted, amended and widely used in practice.

These in turn brought a following positive change in the development of non-profit sector:

- The ban on public financing was lifted out.
- Funds received by non-governmental organizations under contracts of the state social order are exempt from VAT and corporate income tax.

Non-governmental organizations in Kazakhstan have an opportunity to receive financial resources for the implementation of socially significant projects through social contracting with the government on national and local levels. Since the end of 2015, new forms of state support for non-governmental organizations in the form of grants and bonuses have been introduced. In 2016, eleven state grants were allocated for the implementation of social projects of NGOs. In 2016, a new institution the Civil Initiatives Support Center (CISC) was opened to fulfill Kazakhstan's development programs in accordance with the objectives set by the Head of State in the “Kazakhstan-2050” Strategy, which follows the universal standards of the UN and OECD in this regard. The focus of the CISC’s activity is the synergy of cooperation between the NGOs, business, government and the international community to improve the lives of people in need. According to the Chairman of the Board of the CISC, Nurlan Uteshev, the Center aims to create a basis for public confidence in the growth and major funders to their activities and to raise funds for grants from all possible sources: institutional (national and international),

corporate, government, from the patrons, as well as through charity events. (Civil Initiatives Support Center presented in Astana. Retrieved from www.strategy2050.kz).

However, despite these positive developments, the legislation under which NGOs operate in Kazakhstan remains mostly unfavorable. The functionally limited freedom of choice and action within the framework of the state social order has led to the fact that many NGOs have ceased to seek new forms and methods of work, to introduce innovative technologies. Several competitions for state grants were provided in 2017, which received a critical evaluation among the NGO community for distribution of grants only among a small number of “privileged” pro-governmental NGOs.

There is also a new trend in the non-profit sector development in Kazakhstan - a development of social entrepreneurship, which is an innovative activity, aimed at addressing the social problems on the terms of self-sufficiency and sustainability. Social entrepreneurship activity requires more business approach management, as far as it means independence from permanent external financing, innovativeness, i.e. the application of new approaches, and new ways of solving long-standing social problems. Social entrepreneurship requires an entrepreneurial approach from NGO leaders, i.e. the ability of a social entrepreneur to see empty market niches, find opportunities, accumulate resources, and develop new solutions that have a long-term positive impact on society as a whole.

The application of social entrepreneurial principles, including social enterprise activities, can improve the sustainability of the business model of nonprofits while bolstering management capacity and enhancing mission (Lyons, 2010). Social entrepreneurship is located at the intersection of non-profit activity and business, which requires more business skills and proficiency.

All of these challenges require that NGO leaders need to improve their management capacity, as well as to continually update and acquire new knowledge so that the activities of organizations can achieve mission and goals more effectively. The formation of NGO institutes to provide training in managerial, goal setting, fund raising and implementation skills is highly desirable in the NGO sector (Peterson, 2010). NGO leaders should obtain specialized professional knowledge and skills, because few of them have received systematic education in leadership and management. Nonprofit leaders should have more opportunity to improve their professional capacities to make an activity of their organizations more efficient and to increase their impact to their address groups and society. The participants of our focus groups pointed out that non-profit organizations in Kazakhstan face challenges in their institutional development, such as financial sustainability, cross-sector collaboration, lack of developed models of social entrepreneurship, lack of experience how to set up a partnerships with business companies, less opportunities for capacity building for rural NGOs. Many nonprofits simply do not have the business-specific organizational skills, managerial capacity, and appropriate approaches to succeed in social entrepreneurship. According to focus group participants’ opinions, a modern NGO leader should have both leadership skills and the broadest professional competencies that will allow effective management of the organization in accordance with current challenges. The leadership of a non-governmental organization today requires high professionalism in various related fields. This is the ability to build relationships of social partnership with the main stakeholders, this is the selection and training of employees who have the necessary competencies to work with the population as a whole and with the focus group of the organization, and this is modern knowledge in project management.

The official duties of an NGO leader (this may be the position of the chairman, the president, or the director of the organization) include not only the management of the organization, but also many other responsibilities that are important in developing and maintaining the sustainability of the organization, as well as in achieving the goals of the organization. It is important that the manager have a good general knowledge and skills in many different areas in order to be a successful and efficient manager. During discussions, NGO representatives expressed their opinions, that NGO leaders should have the ability to build relationships of social partnership with the main stakeholders of the organization, to select and train of employees, and to have a modern knowledge in organization and project management. University faculty in particular underlined the importance of following skills and competencies:

- Analysis of external and internal context
- Design of the mission and vision
- Communication and motivation
- Definition and promotion of the organization’s values and culture

- Strategic planning
- Decision-making
- Financial and budgetary management.

Participants of the focus groups agreed that the modern NGO leader should have both leadership skills and the broadest professional competencies that will allow effective management of the organization in accordance with current challenges.

The respond of NGOs representatives for the question about form of education, which is most convenient for NGO leaders, was a distance study. Distance learning has already become one of the most effective and promising forms of obtaining general, higher and additional education in the 21st century. In Kazakhstan, distance-learning forms are not used on a large scale, mainly because of the lack of wide development of new information and telecommunication technologies in nonprofit sector. Nevertheless, there are new trends in non-profit sector human resource empowerment, in form of distance teaching webinars. The NGO Expert Center and Public Foundation “KAMEDA” provides webinars on different issues to NGO’s employees and volunteers (www.ngoexpert.kz). Russian NGO development Centers provide webinars and NGOs from Kazakhstan could apply for participation too (<https://te-st.ru/2016/10/17/online-education-for-ngo/>).

Many of the largest international organizations such as UN agencies, OSCE, the World Bank, the United States Agency for International Development (USAID) and its subcontractors (Eurasia Foundation, Counterpart Consortium), Friedrich Ebert Foundation, and Soros Foundation made a significant financial contribution and provided different trainings among NGOs to make civil society in Kazakhstan more sustainable. According to Francis Amagoh and Aliya Kabdiyeva (2012), while international organizations have been providing training programs and technical assistance in such areas as planning and management, much of the training is based on Western standards, and in some cases is not relevant to local tradition and culture. Trainings, which have been provided by different organizations like Eurasia Foundation of Central Asia (EFCA), ARGO, the network of Civil Society Support Centers, Civic Alliance’s chapters, aimed at enhancing institutional capacities of NGOs and professionalism of their leaders, are usually limited in time and systemic approach.

That is why it is time for stakeholders, as the international organizations, government, business, and universities, interested in contribution in development of civil society in Kazakhstan, to apply to the experience of other countries, where universities are already making a significant contribution in capacity building of civil society. They supporting the sustainable development of NGOs by providing professional development trainings and non-profit management knowledge and skills to executive personal, staff and volunteers. Traditionally it is believed that the main purpose of universities is teaching and research, but the socio-economic realities of the 21st century, changes in politics, economics, and science have introduced a new trend in their activities: the emergence of a new, social function of universities. Moreover, here there is a specificity: in universities, there is the development of scientific knowledge, and, therefore, in many respects the basic tendencies of development of a society are defined. There are a tremendous number of colleges and universities in the western countries involved in the education of nonprofit managers. Only in USA 240 universities and colleges provide courses in nonprofit management education (Mirabella, Roseanne, 2007).

Between 2003 and 2016, Seven Civic National Forums took place in Kazakhstan, and the resolutions of each of them underlined the necessity of strengthening of professional skills of NGO leaders. This is a vital problem for the non-profit sector, which still has not found an appropriate solution. There was an attempt by the Civic Alliance of Kazakhstan to introduce such a program based on Academy of Public Administration in Astana, but this initiative was not successful. Factors, contributing to project failure: an inability to pay a tuition by non-profits employees because of their poor salaries and a lack of skills of the project initiator to set up a partnership to involve other partners who could support the socially significant idea.

As a response to this demand, in 2012 the NGO Expert Center of the School of Public Policy at Almaty Management University was opened to empower Kazakhstani NGOs to be stable and efficient. The NGO Expert Center developed a curriculum of MBA program in non-profit sector management based on the study and analysis of curricula of similar programs of western universities and Russia. Their findings were presented to its partners, particularly, to the Eurasian Foundation of Central Asia (EFCA) and Chevron Corporation in Kazakhstan. The idea was supported financially by Chevron in the frame of the project «An initiative of the capacity development of NGOs in Kazakhstan” and in 2015-2016 academic year the MBA "Management in the

Nonprofit Sector" was launched. Fourteen students were selected and received grants, which covered 50% of the tuitions, the last part of it students paid themselves.

The educational and professional backgrounds of students were diverse, but all had long record of accomplishment of working in non-profits. This program become possible due to the successful business-non-profit partnerships, which are considered one of the most effective ways of creating social change. The collaboration between the Expert Center at Almaty Management University and Chevron Corporation shows that there is great potential for education and training in such relationships between the business and NGO sector. Currently, despite such productive examples, this has not yet become a sustainable trend, because not so many universities in Kazakhstan engaged in civil and community service, which integrating social responsibility into their mission statements. ALMAU is the winner of the national contest "For contribution to the development of civil society in Kazakhstan" in a nomination "Best Enterprise". It is supposed to that, NGO empowerment project could be a model for other universities, which could collaborate with corporations, international organizations or government to maximize its impact on civil society.

In the year 2016, the next group, twenty-four NGO leaders from the city of Aktau, Mangystau region, received a chance to be students of this program. This also happened because of the university-state partnership. The Mangystau region's *akimat* (regional administration) covered the entire tuition cost for the students. The MBA "Management in the Nonprofit Sector" program is only one not only in Kazakhstan, but also in Central Asia, which focuses on the specific needs of NGO leaders. It is for those who currently work in non-profits, as well as for people who want to develop their experience in the NGO sector. This program provides students with the business approaches and skills they need to manage their non-profit organizations. Considering the vast size of the country territory and the expenses necessary for transportation, the program provides education in the distance-learning format. The degree program covers such important subjects as strategic management, marketing, NGO legal issues, social partnerships, social entrepreneurship, recruiting and managing volunteers, and financial management. Professors of High Business School from the university as well as top experts in the non-profit sector are invited to teach. The first ten NGO leaders graduated from the program in summer 2017. Now they are professional managers of NGOs, whose new knowledge and experience will bring positive changes in kazakhstani society. It is hoped, that the successful experience of the first MBA "Management in non-profit sector" will motivate other Kazakhstani universities to contribute to the development of civil society by introducing non-profit management education. To further our understanding, new research is needed on how to distinguish and evaluate the performance of nonprofit management academically trained professionals and other nonprofit professionals.

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Old Meets New: Collaborative Digital Storytelling for Effective L2 Reading Instruction

Meliha R. ŞİMŞEK

Department of Foreign Languages

University of Health Sciences

Turkey

malliday@gmail.com

ABSTRACT

The average reader in L1 and L2 does not merely engage in a simple, unidirectional decoding process of the printed word. In contrast, language users now have a habit of relating and reacting to what they have just read and seen on online platforms like their social networking and news websites, blogs, wikis, videos and other media. Therefore, the traditional L2 reading pedagogy, which mostly focuses on a uniform understanding of the text, expanding the learner's vocabulary repository, and contextualising the target grammar, cannot alone meet the needs and wants of this new generation of e-readers. On the other hand, digital storytelling can compensate for the variety, individuality, and interactivity a conventional reading class lacks by engaging learners in multimodal meaning-making with the help of technology. For this reason, the present study aims to demonstrate how digital storytelling can be used to develop a more collaborative, communicative, and creative study of difficult L2 texts by citing examples from actual classroom practices, where two groups of first-year students in an urban university of Turkey eventually produced their own alternative endings for a literary classic, and its contemporary adaptations after reading and watching the story during the course, Advanced Reading and Writing.

Keywords: Digital storytelling, reading education, reading pedagogy, collaborative learning.

INTRODUCTION

With the advent of digital technologies, communication has extended beyond the boundaries of time and space. Today, people can find, exchange, and modify information in a matter of seconds, and through multiple modes of expression. In our age of social media, no language user reads for reading's sake. The once-lonely activity of decoding the printed word is now geared towards interactive and collaborative meaning-making on online platforms. The traditional conception of literacy has also been transformed to embrace the ability to "interpret, use, and produce electronic, live, and paper texts [multimedia texts] that employ linguistic, visual, auditory, gestural, and spatial semiotic systems [in multiple modes] for [strategic] purposes in socially and culturally diverse contexts" (Anstey & Bull, 2006, p. 41). Being distinguished as *multiliterates*, this new generation of (e-)readers can fulfill all four roles of *text encoder and text decoder*, *text participant*, *text user*, and *text analyst* (Anstey & Bull, 2006; Wing-Jan, 2016). That is, they can use: (i) the conventions of written and visual language (e.g. grammar, images) to decipher texts, (ii) their understanding of text structure to effectively express meaning, (iii) their knowledge of text types to "select and use texts for their intended purposes", and also (iv) their understanding of textual constructedness to "produce texts with the user in mind" (Wing-Jan, 2016, pp. 10-11).

However, the traditional L2 reading class does not support the *Four Resources Model of Literacy*, but rather promotes referential reading, where texts are mainly used for presenting grammatical and lexical items, and comprehension questions are more focused on testing linguistic skills, therefore robbing learners of the joy that can otherwise be derived, if it were not for the slow and laborious task of decoding they constantly engage in (Kramsch, 2010; Masuhara, 2007; Tomlinson, 1998; Tomlinson, 2007a). Yet, if the desired response is not an efferent but aesthetic or personal one, this can be achieved by following the multidimensional approach to L2 reading, where learners are helped to make a mental representation of what words really evoke in them, for one can become neither an effective language learner nor user without representing mentally what is said to them, and what they want to say to others through such mental resources as sensory imagery, inner speech, and affective responses (Tomlinson, 2000, 2007a; Tomlinson & Masuhara, 2009).

Similarly, Masuhara (2005) argued that the whole point of reading – the joy of interacting emotionally and cognitively with the text – is lost when learners simply decode or study the text, and recommended connecting the linguistic codes with multidimensional memories in their brain. As a result, the multidimensional approach involves experiencing the text rather than studying it, and includes a variety of multisensory activities: (i) affective activities (engaging learners' emotions, experiences, and views), (ii) imaging activities (creating mental images during the processing of language), (iii) inner voice activities (talking to themselves during the processing of language), (iv) kinesthetic activities (doing physical actions), and (v) process activities (creating own version of the text) (Masuhara, 2005; Masuhara, 2007; Tomlinson, 1998, 2000, 2007a, 2007b, 2007c).

Because the meaning conveyed by the traditional verbal narration is enhanced through innovative multimedia elements (images, audio, video, animations, special effects, graphics etc.), digital storytelling (DST) can prove an excellent educational tool for tapping into the multidimensional mode of L2 reading. Besides combining the old and new means of communication, DST necessitates a combination of learner roles and skills, for the students, having already been captivated by the Internet, films, and video games, are motivated to “work not only as readers and writers but also as directors, artists, programmers, screenwriters”, and as befits the multiliteracies framework, they collaborate with each other, and develop a number of skills such as research and writing skills, organisation skills, presentation skills, technology skills, communication skills, interpersonal skills, teamwork skills, problem-solving skills, assessment skills (Castañeda, 2013; Castañeda & Rojas-Miesse, 2016; Gregori-Signes, 2008; Kajder, 2004, p. 64; Pardo, 2014; Robin, 2006; Vinogradova, Linville & Bickel, 2011). Being a powerful and multipurpose tool of delivery, digital stories can thus be helpful not only for those that cannot put the right words together to communicate their message properly, but also for the ones that need to undertake more in-depth studies of discourse organisation and structure (Gregori-Signes, 2008; Kajder, 2004). For this reason, this study aims to demonstrate how DST as a multidimensional tool can be used to develop a more collaborative, communicative, and creative study of difficult L2 texts by citing examples from actual classroom practices, where L2 readers produce alternative endings, and modern adaptations for the specific genre (tragedies) that they have analysed in the EFL class.

THE CONTEXT

In this study, two classes of first-year students, studying at the FLE department of an urban university (Turkey), contributed with their DSTs to the multidimensional reading class. A total of 56 participants (31 female, 25 male) made 14 student-selected groups of four, and attended three 50-min classes of *Advanced Reading and Writing* over a three-week period. They were purposefully provided with Lamb and Lamb's (2008) conversion of Shakespeare's *Hamlet* into a short story for B2 (upper-intermediate) onwards. It was considered that with the help of a universally appealing, “linguistically easy” but “cognitively and emotively complex” literary text, the desired personal response could be also elicited from L2 readers (Kramsch, 2010, p. 138; Tomlinson, 2007b, p. 112; Tomlinson, 2010). Before composing their collaborative DSTs, the groups performed such in-class activities as (YouTube) video (pre)viewing, visualising, drawing, building character networks, making literary dominoes, and having class discussions. After they were familiarised with free online DST tools, they scripted alternative endings, and modern adaptations for the text. The lesson sequence ended with the selection of the best version among all joint written products.

PROCEDURE

The step-by-step procedure by which the groups finally produced their collaborative DSTs can be demonstrated with examples from actual classroom practices as in the following. Since learning is optimal in a stimulating and enjoyable environment, the pre-reading phase of this model lesson started with a game-like challenge activity (Tomlinson, 2000). Learner interest was aroused using a 3-min video from the YouTube channel, Alltime10s (2013). The groups raced to write from memory as many details as possible, and among the ten curious facts about Shakespeare's life in the video, the top three responses concerned his drug addiction, translation into 80 languages, word coinage, and alcoholic death.

With the help of imaging activities, where learners “see, smell, hear or touch things in their minds”, learners are helped to connect with their previous experiences, and worldly knowledge, while their emotions are engaged (Tomlinson, 2000, p. 26). As a result, the students in this study were secondly guided into the visualisation of a royal wedding and funeral in the Middle Ages. They shared their medieval images of the ceremony place, the kind of clothes, food and drink people had, as well as their feelings, and behaviours. According to Masuhara (2005), a teacher's reading of the text aloud – like a mother to her child – relieves learners of the stress from unknown words, and focuses their attention on the overall meaning. In a suggestopedic manner, the teacher here read the initial page of the story, where the major characters were being described. After hearing about their deeds in the story, the students made a drawing of what each character looked like. Not only Tomlinson (2000) but also Tomlinson and Avila (2007d, p. 87) supported that the learners should be “encouraged to read along in their heads, as the teacher reads emotive texts aloud”, and given the time to think in their inner voices through such kinesthetic activities without having to worry about making language mistakes. Examples of how they imagined Gertrude, Claudius, and young Hamlet can be seen in Figure 1 below.

In order to develop cultural awareness of the period (settings, attire, traditions), the students previewed Franco Zeffirelli's 1990 film adaptation of *Hamlet*, and compared the actors' appearances with their drawings. Their curiosity was further excited by pausing the wedding scene, and asking them to predict what Hamlet would do next. In this way, they were motivated to read the rest of the story to check if their guesses were right.

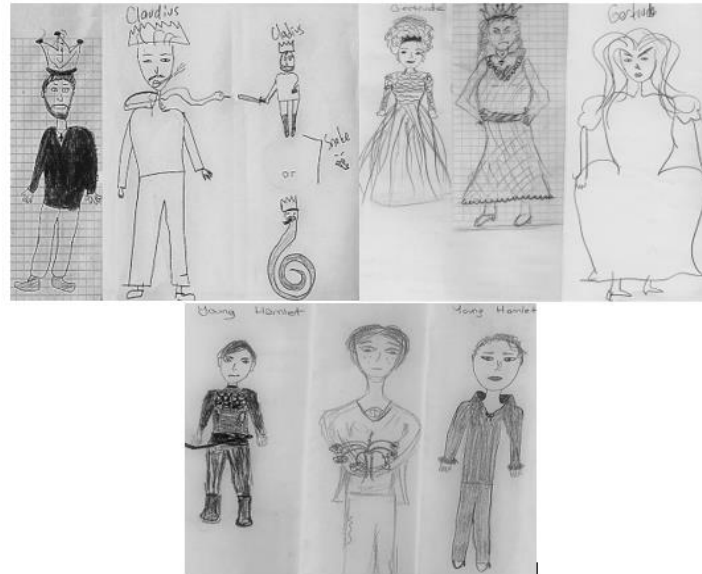


Figure 1: Student drawings of major characters

At the while-reading stage, the groups showed their understanding of the relationships between the major characters by building Sherman's (2003) character networks. For indicating the material connections, they used arrows, and for the psychological ones, they bracketed personality adjectives beneath each character's name as in Figure 2 below:

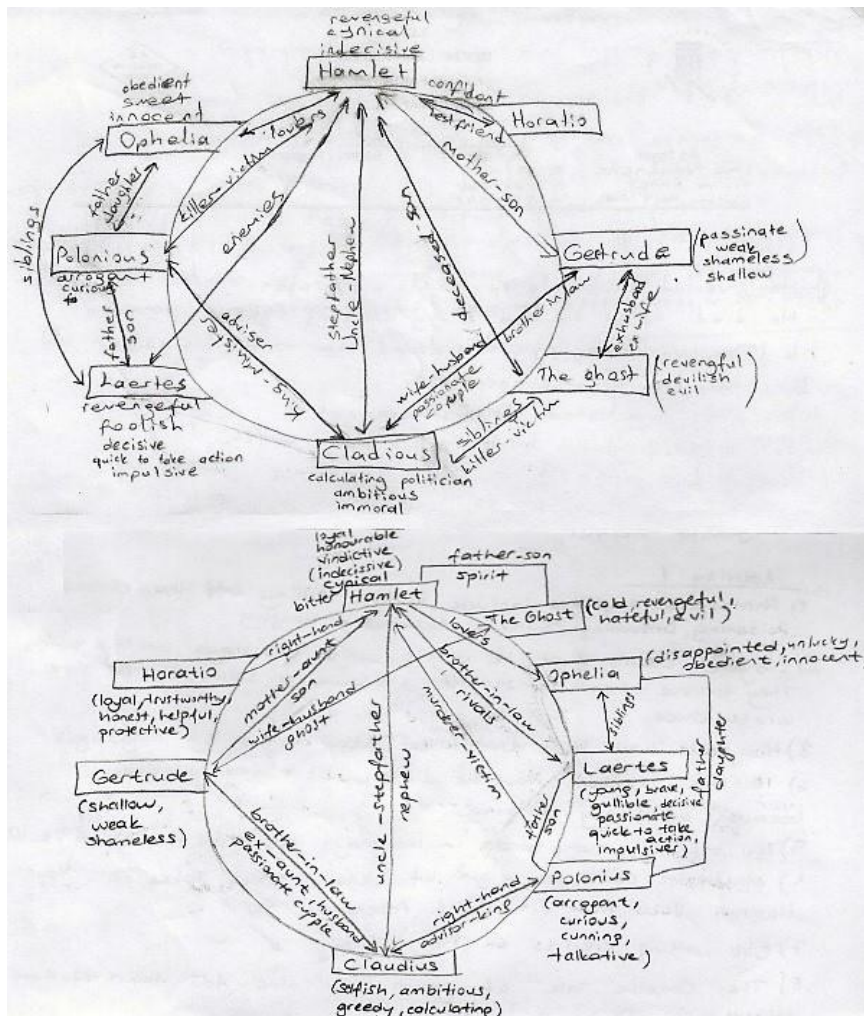


Figure 2: Examples of character networks by student groups

After making this diagrammatic analysis of characters, the groups picked their most loved/hated characters, and supported their case by citing examples of their behaviors (tragic flaws). In both classes, it was Gertrude that became the target of bitter criticism due to her frivolity as the mother of a young man in Hamlet's age, whereas Ophelia was the most popular for her meekness, and innocence, which could easily be understood considering the gender stereotypes in the students' home (Turkish) culture. Consequently, they summarised the incidents, denoting the major themes of the story (e.g. ambition, revenge, friendship, indecisiveness).

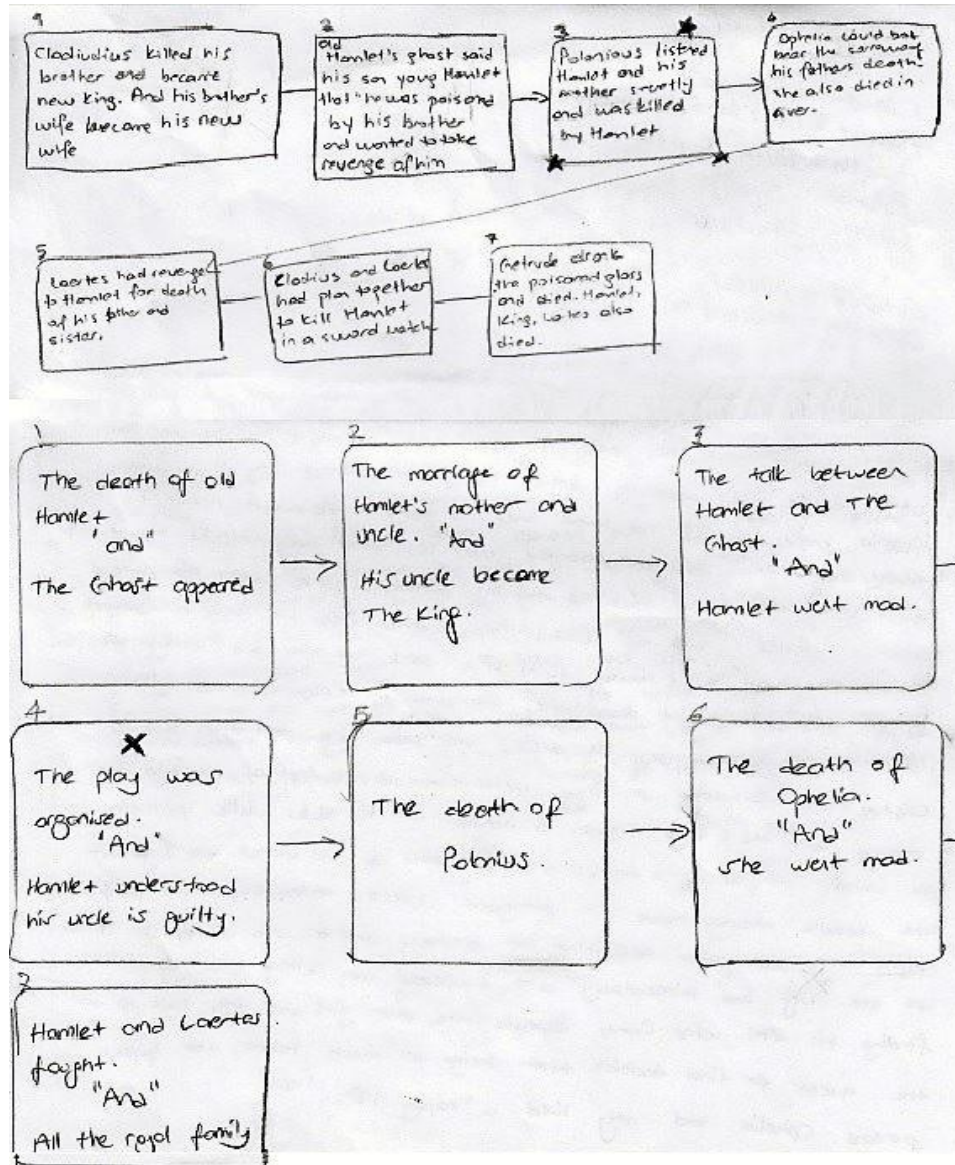


Figure 3: Examples of literary dominoes by student groups

For Tomlinson (2000), it is best practice that cognitive, studious activities are preceded by their affective, experiential counterparts. For this reason, the multidimensional reading class proceeded with Gallagher's (2004) literary dominoes, a C-R activity, where a set of dominoes were used for demonstrating the chain reaction in tragedies. Here, the students were given six dominoes (depending on the level, class time, and complexity of the story, the number of dominoes may vary), apart from the last, that is, the resolution of the story (Everybody died!). As can be understood from Figure 3, they achieved to identify the key events causing Hamlet's downfall. Having reviewed the dramatic structure of the specific genre, each group determined one most effective domino, marking it with a cross/star/tick. It is clear from Figure 3 that while one group identified Polonius's accidental death as the key moment, another found Hamlet's trick, the 'mouse-trap' scene as the climax of the story.

At the post-reading phase of the lesson, they removed their (self-chosen) most effective domino from the chain, and changed the course of events from then on. Although the collaborative writing groups had worked on the same number of dominoes, there emerged 14 different finales for the original story eventually. As part of his efforts to humanise the one-size-fits-all approach of the global materials to textbook content, Tomlinson (2007a, 2007b) suggested getting the students to produce their own local versions or endings for the text by using different mediums: e.g. videotaping their versions of poems, short stories and novel excerpts. Furthermore, Masuhara (2005) offered to make a public display of the learners' such hard work.

Since the groups were expected to script and share their own alternative endings, and modern adaptations for Hamlet's story, they were taught how to enhance the effect of their joint products on their readers through pictures. Free online DST tools like Mystorybook, Storybird, StoryJumper, and other resources like Microsoft PowerPoint and Photo Story were overviewed. According to Castañeda (2013, p. 46), it is the story itself – not the technological aspect – that should be the focus of digital storytelling; as a result, digital storytellers should “spend little time learning and using the software” and “ample time crafting, revising and narrating the story”. Knowing that the quality of their writing is a more definitive indicator of achievement than the visual design alone, the groups seemed to prefer simpler (Mystorybook) or familiar (PowerPoint) resources for practicality's sake.

During the collaborative writing process, the group members brainstormed ideas, reviewed each proposal, and reached a consensus on the idea to be developed in their first draft. As their products would be read aloud, displayed, and put to the vote, they asked for the teacher's feedback, revised their grammar, and went on to design their own story pages, which involved choosing images from online galleries and/or drawing their own pictures, combining their images with the relevant text, and making more modifications for overall coherence. Figure 4 shows the three best samples from the students' alternative endings designed by using DST resources.

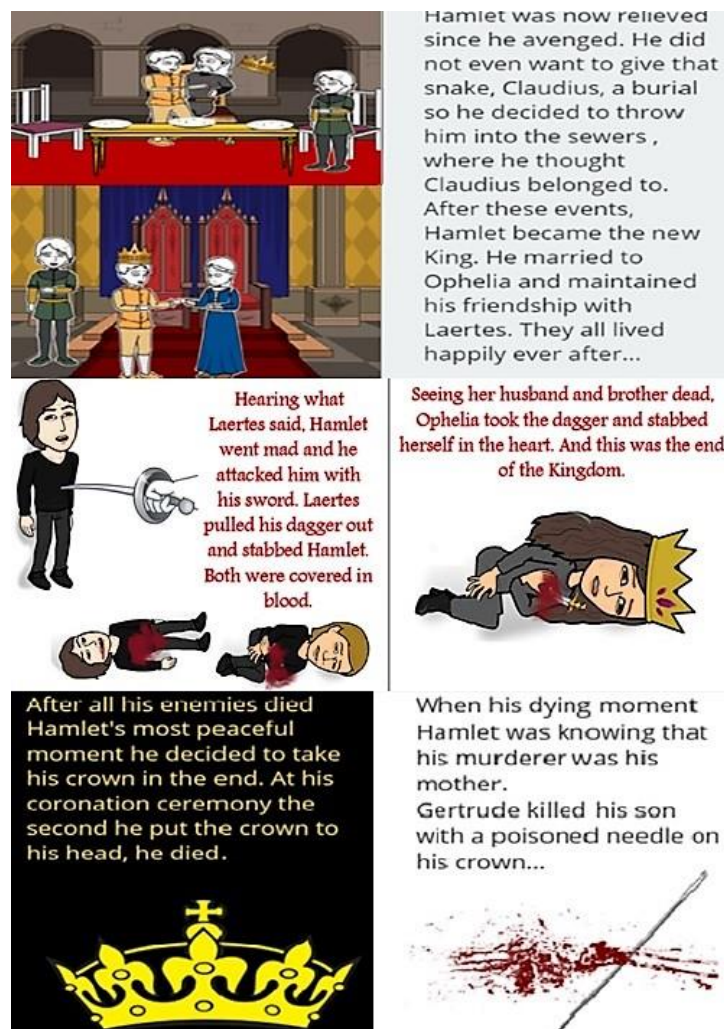


Figure 4: Examples of alternative endings in DST

It can be concluded from Figure 4 that in the first of these three writing samples, the students chose to have a happy ending, where Ophelia and Laertes took sides with Hamlet, and Claudius was overthrown and imprisoned. The second group, on the other hand, preserved the sad but very Shakespearean ending, where Laertes conspired against the new royal couple, made them drink their baby's blood, and caused Ophelia's suicide eventually. In the last and bloodiest sample, they decided that Hamlet should be killed at his coronation ceremony with a poisonous needle placed in his crown by his own mother.

This collaborative writing activity was followed by a similar but extended one, where the same groups gathered to script a modern version of the authentic story. In order to facilitate their task performance, they were shown extracts from famous screen adaptations of Hamlet such as Akira Kurosawa's 1960 film noir, 'The Bad Sleep Well', the Spaghetti Western version called Johnny Hamlet (1968), and Metin Erksan's 1976 Turkish drama known as 'The Angel of Vengeance' or 'The Female Hamlet'. Its cartoon version, 'the Lion King' was also previewed, so that the learners could better comprehend the universality and eternity of Shakespeare's human themes. They were made aware that they were free to choose the setting, modify the nature or source of conflict, and change the names of the characters, as long as the plot remained more or less the same. Figure 5 displays the three best samples from the modern adaptations the students designed by using DST resources.



Figure 5: Examples of modern adaptations in DST

According to Figure 5, the setting varied greatly in the given samples; i.e. from an artist's workshop to a big corporation, and even to a grocery. However, in each case, there was a power conflict, leading to the murder of Hamlet's father by his own brother, as in the case of the original storyline. While the killer was revealed at an art exhibition in the first, and at a (family) dinner table in the second sample, the third group employed an eyewitness (his father's mistress) to inform Hamlet (Hamdi) of the murderer's identity. As for the methods of killing, theirs were not as violent as Shakespeare's, and the students mostly opted for a more down-to-earth, fair ending rather than a total destruction of the whole family. Ultimately, the collective works of the collaborative digital storytellers were presented to the whole class under a pseudonym of their own choosing, and also voted by fellow narrators. The samples provided in this study were the ones that had earned appreciation and admiration from both their peers and the teacher.

CONCLUSIONS

It has long been the mainstream of the L2 reading pedagogy that the students rarely read with a real incentive (i.e. reading for pleasure or continuous learning), but rather they do so in order to restate the textual information, when elicited through comprehension questions or gap-fills (Masuhara, 2005). However, digital storytelling can offer a useful tool for building a multidimensional class, where L2 learners can regain the fun, interest, and involvement they seek in L2 reading, and thus have a more rewarding experience of living the text rather than analysing it on word level. The following benefits of DSTs have been observed in both our class, and the literature: (i) while the students work for, and with each other, or, more precisely, they learn from each other the skills, and knowledge they lack (e.g. the less technologically-minded or those with limited language skills being supported by the experienced ones), assess each other's work, and become independent, (ii) they also develop the essential interpersonal and social skills for motivating, encouraging, supporting, negotiating, and maintaining communication, and (iii) as they are not simply writing but as a matter of fact, designing personal content in multimodal ways, and to their potential reader's liking, digital storytellers enjoy the creativity, diversity, flexibility, individuality, and interactivity absent from the conventional L2 reading class (Castañeda, 2013; Gregori-Signes, 2008; Kajder, 2004, p. 64; Pardo, 2014; Ramirez, 2013; Robin, 2006; Torres, Ponce & Pastor, 2012; Vinogradova, Linville & Bickel, 2011). It is therefore worth investigating whether digital storytelling can enhance other language skills, intercultural skills, and critical thinking skills, or foster their vocabulary and grammar learning through experimental studies in different teaching contexts.

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On in-instruction-ability of tacit knowledge as ordinary, practical member's method

Minho SHON

Inha University

Hyunyoung CHO

Inha University

ABSTRACT

This study begins with problematic how tacit knowledge could be 'view-able', 'share-able' 'reproduce-able' among competent members who share similar experience. Tacit knowledge is private but public.

This idea relies on Ethnomethodology. EM is a descriptive study of ordinary members' methods, situated practice and ordinary actions, which constitute social order, rationality, and work, etc.. Here, the idea of member implies an agent who has a competence to appropriate tools. Members always play between the situated reasoning, actions and the horizon of understanding.

Our experiences are always situated and intended into something. So, interest goes to examine how learning takes place as byproducts of participation rather than understanding. We already know that studies of situated learning and embodied cognition have been developed in educational studies: descriptive studies and instructional design research over the last decade.

If development and learning are routinely ubiquitous productive experiences, then micro-level and detailed analysis of the actual situation is required. On the other hand, detailed analysis of how situational practice is involved in learning experiences is still rare in (Korean) studies.

In this study, I examined how the tools and resources are dispersed into situations and become invisible in our 'participatory appropriation', and how the situation leads to our practice by structuring the next situation with the passage of time.

I examine how experience, tacit knowledge is interactively structured in situational practice, through case studies such as interaction with others, personal practice, and use of visual materials. In addition to the transfer of experience, the learning of knowledge was also intended to show how experience, or know-how, develops in the embodied context. Finally, it suggests that the instructional design can be presented as logic and a model for the design of the minimalist learning environment.

1. SITUATIONALISM PARADIGM AND PRACTICE: PRACTICAL COMMUNITY? COMMUNITY PRACTICE!

It has been quite a while since situated learning theory emerged in teaching and learning research. Situated learning theory started from the study of child development since the 1970s. In the study of child development, It tried to reveal through various studies that the socio - cultural context is an endogenous variable directly related to what a child can and can not do. Here, of course, Vygotskian scholars were the protagonists. They sought to refute the structuralist assumptions presupposed in Piaget's work with ecological psychology or cultural psychology as the backdrop. They wanted to show that the cognitive structure expressed by the child's reaction or thoughts was consistent but dynamic and contextual. Since then, many developmental studies have shown the micro-genetic and diverse cognitive aspects in the child 's situations rather than the static and linear changes in the cognitive structure.

Many studies on situated learning have been actively discussed since the 1980s with universities and research centers in the western United States. The main reason was that Vygotskian psychologists interacted with the local universities is US. They have also fused with so-called micro-social theories to create activity theory. In particular, the formation of a context awareness or situated learning centered around the US cannot ignore the effects of micro sociology. Traditionally, in teaching and learning research based on psychology, there has been a limit to view the context as endogenous variables of learning and development. On the other hand, interdisciplinary researches such as cognitive science based on Silicon Valley were in the midst of research on interaction and context, and micro-sociological studies added to this. Here, micro-sociology is the name given to the fact that it differs from the existing sociology based on social structure and norms in that they try to see the 'daily life' as the foundation of reality and the tendency to overturn the world.

This microscopic approach, especially the symbolic interaction and ethno-methodology, showed how society, organization, and work are maintained through microscopic situated analysis of the folks under the banner of methodological situationalism and restoration of daily life practice. According to them, the situation of practice is 'by itself' a structured, ordered as social organization and a process of work. The situation here refers to the

intertwining of time and space created by practice and cultivated in practice. In learning theory, the situational paradigm is largely driven by insights from these studies on the actual interplay of social interactions and situations. Situated learning and communities of practice theory came from this background. Studies on situated cognition, along with embodied cognition and distributed cognition have been poured out, but it is still unclear as to when situated experience gets a status as learning. It is so because we can fully agree that our thoughts and experiences are based on situated contexts, but not all situational experiences can be seen as learning. Of course, it was not clear how our experience was contextual. Furthermore, the interpretation of all experiences as learning does not fit into everyday language. This is because most of the learners have implied some kind of normative meaning called desirable change.

The challenge highlighted among situational researchers was to find an answer to how our experience finds consistency beyond the context of variable and improvisational contexts. The question of how our experience finds consistency is also a question of how our experience changes, when we turn it upside down. Every experience is a situational experience, but our experience keeps it constant. The situationalist viewpoint is in contradiction with the view of normative view and learning that preceded by consistent homeostasis alike an individual. In examining the situatedness of our experience, the existence of the identity of the experience, ie, the homeostasis, was questioned. And we began to deal with how we are negotiating, transacting with the surroundings in order to create, maintain and restore the homeostasis of experience, and how our experience is changing as a result. From this point of view, the identity of participation, that is, competency, arises from the negotiated experience.

Today, communities of practice (CoP) is also known as a model of network learning or organizational learning, and is sometimes referred to as an ecology of learning. Furthermore, 'theorizing' of situational learning such as CoP has become a successful model in educational theory. Today, even within the paradigm of situationalism, the process of participation in CoP has been accepted as a model of situational learning, where contextual learning and CoP are considered synonymous. In view of the situational paradigm, those who assume the CoP as the theoretical model sought to take only the strategy of 'learning in the community' or 'learning in the knowledge organization', while not scrutinizing the practice.

Every community is an intangible community, or an imaginary community, in that some aspect of experience and interaction is called community. It is an intangible and imaginary product, but it is also a device that allows members to believe that they exist as shared objects. This sense of reality is only possible if participants experience at the identity level. For example, the establishment of a professional learning community among teachers in a school does not mean that a learning community could be established. If a group is established at the community level, then the organization should exercise its power to tie the parties apart, not through separate programs but through a wide range of daily routines. Confirming the existence of the learning community can be a break time, or it can be a time of gathering at lunch time and chatting. It may be a long time or a short time.

In the paradigm of situationalism, the idea of participation in the CoP as embodied learning in identity level is more appropriate to be seen as 'learning through practice'. The concept of CoP is limited, because it limits all individual actions and experiences to collective activities in organizational level. Of course, the return to the community has a weakness that makes the specification of learning activities too narrow. As we shall see later, all practices themselves imply interactions with others overtly or tacitly, and are collective, so a close examination of even individual practices implies a sense of community. Rather, the paradigm of situationalism is more appropriate to see that problem recognition begins with looking at practices and ends with practice.

Situated learning theory is a paradigm rather than a theory. The spectrum is broad and its interest starts from a much more fundamental question. Of course, it is not so difficult to summarize the whole topographic map of the study, which is a paradigm of situationalism. In Psychology, Vygotskian developmental theory and ecological psychology, and sociology, symbolic interaction, ethno-methodology, and philosophical background of practice and social anthropology have met with a paradigm of situationalism in learning research (Nicolini, 2012). In recent years, activity theory, which has been mixed with the above-mentioned intellectual roots, occupies a large part in the paradigm of situated learning theory as well as CoP theory. The paradigm of situationalism is based on the assumption of cooperation or harmony in social theory, although the theory of action takes the position of conflict theory as well.

In the contextual paradigm, we can summarize how we see experience, knowledge, and learning as follows.

First, experience is dispersed not only in the objects it is dealing with, but also in situations. Thus, all experience is a direct experience that is not mediated by concepts or representations, and thus experiences are improvisational.

Second, the situation is the space that we face and reside in. Thus, the intellectual experience as a direct experience arises from interacting directly with the object or its surrounding subjects, i.e., the situation. At the

same time, it is embedded in the flow of context.

Third, the reasoning that actually works in the problem solving process is as contextual as using circumstantial clues and resources.

Fourth, perception, behavior, emotion, and intellectual experience are a direct experience of and in the situation, so learning is not a matter of understanding or thinking but perception and action, firstly.

Fifth, all experiences are non-mediated direct experiences. At the same time, they are based on the possibility of sharing and reproducing with other people, and learning of them involves coordination with others, compromise, obedience and modeling.

Sixth, the situation, which is an activity system that affords our experience, that is, an immediate, micro-genetic environment, requires an act of positioning itself, that is, an act of participation.

Seventh, learning is not the change of the individual internal structure but the flow of the related pattern of the individual and the situation.

And the supposition above the above is as follows. In other words, all actions are situational acts of negotiation and coordination, all thoughts are situational thinking of negotiation and coordination, and therefore all learning is also negotiation and coordinated situated learning. This is a pitiful point for situational learning theory. In education theory, learning is a form of experience or behavior that corresponds to its position on a normative level. Let's take an example. Let's assume that students to learn literature are reciting poetry repeatedly. Is it learning by memorization or doing situated learning based on practice? Another high-level premise is that all experiences are based on practice (Gherardi, 2008; Schatzki, 2001). The attributes of situationalism presented above are also attributes of practice. The context and practice are the same as the two sides of the coin, so they can be regarded as two axes that cannot exist for the meaning to be established. Practice and context are seen as constituting each other. To read is to find the context of the story, comprehending the meaning between lines, in which reading activity must be carried out. In general, when we refer to an action as an action, it implies the following features.

First, actual activity is involved and as contextual as it is.

Second, it is patterned and routinely repeated, not a one-time experience.

Third, it is public rather than private, as it is reproduced in a way that can be shared with somebody.

Fourth, 'while engaged in the work', it is as concrete as the agent and the agent and the object are put together.

Situated learning can be called learning by practice in some sense, if we think of it as a more familiar concept for us. In the following section, I will try to talk about cases with basic assumptions about how experiences are interactionally learned based on situational practice.

2. HOW DOES EXPERIENCE EMBEDDED IN THE CONTEXT?

2.1. The tools of knowledge and the afford-ability of objects

According to situationalism, all knowledge has the attributes of tools. The term "tool" here means a means of mobilization to do something. Knowledge can be seen as a tool, whether it is explicit knowledge or tacit knowledge. Even conceptual knowledge is nothing more than a tool for us to use that knowledge. We often use the term "knowledge" as a tool in a pragmatic sense. The utilitarian nature of situationalism implies the meaning of acting in a 'pragmatic' way in the context of what we are trying to accomplish.

If you understand what the tools of knowledge mean, you can more easily figure out what it means to learn situations. In order to understand how knowledge becomes instrumental, it is necessary to reconsider the fact that once knowledge is gained, it is experienced by us in a way that the knowledge is not indistinguishable from the object to which it is aiming.

Merleau-Ponty (1962) has argued about the invisibility of tools, such as a blind's stick. Give a blind man a stick and let's talk about it. He will talk a lot about the looks of the stuff, such as being heavy, too long, smooth on the surface. However, he does not perceive itself as it has begun to use it as his own tool. When he appropriate the cane, it works as the extension of his body. At this time, the cane is felt as the object to be handed to him, such as a curve road or an obstacle in front of the road. Likewise, once a tool and its use begins to be mastered, its existence becomes as transparent as it is without.

The knowledge and skills that we mobilize when we solve problems can also be seen as a tool. Knowledge or technology is visible before we learn them, but once we learn and begin to use them freely, we are not conscious

of their existence. It is easy to imagine that a situation in which a person has learned enough to freely use any knowledge or technology has made it possible for the user to flexibly adapt the knowledge or skills as they are, without being hasty or unconstrained. Ironically, mastering knowledge and skills implies a dual meaning that it regulates me and make me free from it.

No matter how high-level knowledge or skills are mastered by an actor, it becomes an object (problem space) directly experienced embedded in the situation to the party. For example, in a learned situation, a violin and a piece of tune are the objects of a fingertip and ear feeling that give an immediate response to the performer. Familiar words are immediately used and responded in conversation. Also, the carpenter's hand is virtually flamboyant when it is nailed to the wooden board.

Medical doctors 'see' how the symptoms of pneumonia have progressed in black and white films and interpretations are also contextually and pragmatically proceeded. It is not the interaction between the situation and the mind, but the relationship between the situation and the perception or behavior that is open to it. The object is not an object of thought but an object of seeing, hearing, speaking and using.

According to activity theory, which is one of situationalism, the acquisition of knowledge is an appropriation to utilize it as a tool, and at the same time, sense the quality of objects, contextual sense of meaning. Polanyi (1958) described the intrinsic motives drawn by objects as dwelling in a practice. From an 'emic' point of view, the practice in which he participates is not only an intellectual but also an object of aesthetic and ethical attachment. Here, one is able to perceive and respond to the quality of the object, which means the development of competence.

At this point, as the interaction develops into direct experience and action, it is expressed in the form of non-mediated perception, practical, practical behavior and emotion. Here, non-parametric perception means that our perception toward an object is immediate, not mediated by knowledge or representation. And that the interaction of the object or the situation with it is in the form of actual action, which in any case means that our plans and actions never follow the rules, i.e., 'knowing-that'. It follows the quality of the object without following the rules. For example, when we are faced with a problem situation, we take the action and decide on the following actions based on the result of the action. This process, of course, takes place in a cyclical, holistic way, not a single, segmented process. Daily practice is like a prescription that automatically leads to behavior for users who live in it, such as habitus or tradition. These habitus and traditions allow us to live improvisationally in a stable manner without having to define and plan new situations or objects that are encountered every time.

2.2. Context as the flow of experience and the relationship of work

The context in the situational paradigm is the local environment of our actions and reasoning. In this regard, the question posed in situated learning theory is how contextual attention and attitude temporally structuralize situation variables. Situationalism basically takes an emic perspective rather than transcendental. If the person is immersed in the situation, he or she will have to act and reason *in situ*. He takes for granted so many things *in situ* and focuses purposefully his attentions to the object, and thus organizes so called a 'phenomenal field'.

This can be expressed as follows.

<Figure> Temporal structure of situation

In this respect, it is necessary to take another 'effort' of situational reasoning to form meaning through action. In order to solve the problem and to create meaning as described above, a situational flow of development of time is needed, presupposing the unpredictability of the act that is developed with endless open conclusion in the present infinite current of 'here now'. Every moment we meet is always tense and unfamiliar, even if it is repeated everyday things. This is because the moment when we meet 'here now' is a unique and individualized 'present' that is reflected and embodied in the past experience and future. Therefore, when inferences occur in order to solve problems and dissolve them, we are at a moment when we need to reflect on the past and future expectations, and make endless choices and decisions.

Here, in most situations of everyday life, most things are handled without being conscious of such tension and newness. And when it comes to encountering a problem situation that is contrary to existing cognitive structure, reflection and reflection often occur. Dewey (1931) explained that the experience of mobilization of these stigma is the moment when learning takes place. The cycle of question - answer - evaluation between teachers and students, which is an easy way to find out in school classroom, is an example of how the composition of the situation concentrates the attention of the participants. A teacher's question to a particular student turns the situation around, forcing the student to think about how to find the answer unobtrusively. It makes me wonder what stories came before the question, what the teacher wanted to answer, how my answer could not escape from the post-war context, or how I could answer the opinion differentiated from the student who replied in the past.

The function of the teacher's question structuring the situation response of the student's response is not limited to the individual. The influence of the situation is not limited to the students who are asking the question. In other words, the question he asked to Mr. The rest of the students is not identified with him, but the questions he made to him are also questions to them. 'I know that next turn may be myself.' A teacher's question to a student has the effect of binding each student into a single identity. In this way, the practice community of us in class is composed of situations and situations.

It is easy to understand how one infers the next moment by moment, by comparing it to a puzzle solution. Matching a puzzle is a process of exploring the relations between the whole and the part of the lyric retrospectively and prospectively. It is as if we are not only paying attention to each sentence when we read a book, but also exploring how it relates to the flow of context, at the same time. The associations of each piece make up one situational condition, and the conditions so created become another context, directly affecting what the next puzzle piece should be chosen. For example, the immediate emergence of the empty space between the pieces of a puzzle is a condition that allows us to visualize the phenomenal field in horizon of the expectation that something must be present (Garfinkel, 1967). In this way, the relation between the whole and the part is structured.

The nature of these actions arises when they are put into contextualized issues that have been placed. This may be a game of infinite puzzle solving, and that's why the same game is experienced 'as if it were always new'. In other words, it acts as a player to infer new associations, even if the number of various cases of the situation at that time is one rule of the game. Therefore, the following situation, which is experienced every time, always has the emotion of 'throughout for the first time'. And such unpredictable tensions cause inferences about the following actions.

Various situational inferences are triggered during solving the problem and in the process of performing the task. These inferences are due to the anticipation of the next situation, the unfamiliarity of each situation due to the actions according to the previous situation, and the nature of the temporality as a basis for establishing the context. Temporality, as a source of structuring that gives a totality to our actions, acts as a frame for us to act and induce action. It is because temporality can act as a frame of action, accompanied by emotional expectations that are experienced before the present. Here, the horizon of the individual's understanding, such as the anticipation of the previous experience or situation, acts on the overall reasoning and acts as the direction of our work. This is the product of a coincidental situation in which factors such as concerns and expectations about vague consequences stemming from previous experience of the actor's situation are considered (Shon, Minh, Cho, Hyun-young, 2014). The flow of time that we put into practice shows the nature of the situation that determines the process of work, experience, and learning.

3. HOW EXPERIENCE IS LEARNED CONTEXTUALLY

3.1. How are communities of practice experienced in the learning of sensory knowledge ?

The learning of experience, such as sensory knowledge, is usually treated as the creation and sharing of tacit knowledge. Coffee barista technology arises from participation in the barista education program for a while. High school students participate as teachers and deliver the technique to trainees. Such techniques consist of techniques for extracting coffee and the ability to distinguish flavors. If we can reconstruct the experience of the practitioners involved in the training, we can see how the coffee barista technology can be created, that is, how the sensory knowledge is learned. It is possible to understand how dozens of coffee can be classified as dozens of coffee with similar taste and similarity, and how the natural vegetable material of bean can be turned into a target of cultural symbol surrounding coffee and socio-cultural consumer goods. It will renew our understanding of numerous practices.

In general, constant grinding and practice to acquire tacit tend to regard it as a 'non-contextual' personal situation. However, every practice has the nature of some demonstrations. The demonstration here means practice with someone in mind. For example, if you are practicing while preparing for a concert to come. What about an apprentice who practices hard to master pottery making? Does the practice of making porcelain soil also be a demonstration? **It is necessary to review the fact that in all exercises the co-presence of the other is directly or tacitly associated** (Wenger, 1998).

According to symbolic interactionists, even individual headaches are simulations of real conversation. The flow of thought in us is a monologue, but it is much more of a dialogue. If we think of a case in which we continue to make words in order to sort out thoughts in our minds, we can fully understand what this point means. Although I am thinking alone, there is a dialogue between the subjective self (I) and the objectified self (Me). In this sense, Vygotskyists have argued that our thinking is not an internalization of a concept or meaning but an aspect of internalization of interaction.

The contextual learning, that is, the acquisition of sensory knowledge contextually, has the following meaning. **All of this sensory knowledge consists of 'in a way that allows interaction with others, such as colleagues'.** In a somewhat abstract way, all these processes must involve action and practice is based on interactive attributes. Interactive aspects are often situational and peripheral, so they are taken for granted and overlooked. Because when you learn about the taste and aroma of coffee, it is because the learner's attention is focused on the object, that is, the coffee itself. Therefore, it is easy to think about the interaction between the learner and the object as a condition that a tacit of coffee taste discrimination arises.

According to various research results, the interaction is not limited to the interaction with the target object. For example, the Chicago sociologist Becker persuasively found that being a marijuana smoker through a study called 'Becoming a marijuana user' is a process of learning. It is not only because of the chemical that makes marijuana feel so called 'getting high'. He found that beginners arise from tacitly matching their experiences with colleagues.

Interactions with people associated with this object facing such objects also permeate knowledge of the object or techniques that deal with it. First, the problem of 'who' is implicitly engaged. In the case of a newcomer, a professor is already a sociologist and has already been set up contextually within the community. Thanks to this, the words and modes of action of the old timer are accepted as being typical of knowledge, and imitate and follow him. At this time, the novice wants to follow the experience of the master while reserving any suspicion. Even if the instructions or experiences of the old timer are immediately followed, and even if there are difficulties in accepting them as a part of their experience, the newcomer takes an attitude of trusting and following him, reserving his own judgment. This is because the collective emotion, or ethos, is the basis for the working community to function as a learning mechanism.

It is also the emotional foundation of learning that Wenger (Wenger, 1998) argues that the practice community theory differs from network learning theory in his book. This emotion begins with an attitude that aims to align the differences between the types of communities in which one wants to identify with oneself. The identity formed through participation is the product of the mechanism of identification.

The ability to distinguish the taste of coffee, the object of interaction, is required not only for the tacit knowledge embedded in the tongue but also for competence to objectify in a way shared in the community. Of course, the two cannot be separated, but for the sake of explanation, it is. In the same vein, P. Winch has said that the fact that a mechanic has been able to repair a machine means not that he can repair it, but that he can do the work of other mechanics who have been able to repair the machine. Many qualitative sociological studies that have suggested implications for how learning experiences arise find such assumed aspects of learning experiences in such social interactions.

If the category of identity and its formation are similar to the tacit and the pattern of learning, the same interpretation of the double restraint of tacit learning can be applied to this. It is more accurate to say that all membership categories constitute constellations of practice, not specific communities. It is based on the premise of an anonymous majority community. For example, it is awkward to say that there is a working community of fathers. However, the identity category of the father is established in relation to the aspect of the practice that many anonymous people in similar positions share. It is like saying that seven contiguous constellations visible to the naked eye at night look like a big dwarf, but do not exist as reality but exist as meaning.

Similarly, the practice community of cancer patients does not exist formally, but of course there may be institutionalized organizations such as cancer patient associations, but the identity category of cancer patients actually exists. Being a cancer patient means more than having a cancer in your body. Learn how to look at your own disease or world, how to live your life as a cancer patient, how to eat and how to deal with your illness, and gradually learn with the experiences of people you have not experienced. They have implicitly accepted their stereotypes and as such the category of cancer patients becomes part of his identity. Identity as a cancer patient is both formed as part of a response strategy to the disease and also as a social response strategy. These identities are typical of what we see as contextualized as we actually participate in the practice. Being of being is a being in the world that emerges as a result of participation in doing.

3.2. How practice is context-dependent

Most learning is related to the mastery of knowledge or experience. The children recite infinitely repeated numbers of the calculation to learn how to count. It is necessary to memorize the concepts in the textbooks before the examinations, and to repeat the exercises in which the concepts are applied. In order to play the piano with K-pop score, you have to repeat the practice of tapping the piano key several times. A 10,000-hour practice is required to reach the skills of professional woodworkers and professional musicians (Sennett, 2008). **Before examining how situational practice is practiced, it is necessary to examine how practitioners' practices are**

characterized by a management of situations. The following is the interview scene in the virtual medical situation which is the simulation situation of the actual medical situation. Here, the doctor is diagnosing the patient's individual, ambiguous physical symptoms by naturally associating them with one medical fact in the interaction with the patient.

<Case 1>

Doctor (SD): You do not have it at all. Yes, um ... Its black side. It's not black ... It's a mixture of mucus or something.
 Patient (P): Is it mucus?
 SD: Yes. Is not it a mixture of whiteness and other substances?
 P: I do not know. I do not know that.
 SD: You do not know that. Do you have diarrhea?P: NoSD: You do not. Yes. Do you feel sick?
 P: Oh. Sometimes.
 SD: Where are you sick?
 P: I do not know. Are you sick near Meiji? There was a thing like that.SD: Near Meiji. uh... Since when did you do that?
 P: I do not know. I do not know exactly. I think it has been several months.
 SD: A few months ago. How are you sick? Do you feel sore? Or is it ...
 P: Sometimes I get sick.
 SD: Oh. Do you feel sick?
 P: Yes. Sometimes I get sore.
 SD: Oh. Do you think it has a love affair? It's okay if you eat rice or it hurts more when you eat rice ...
 P: Yes. The sore ... on... then... I think it's okay if I eat a little bit before I eat ... Yes... (syncope)
 SD: Yes. Okay. You said the pain was painful. The pain is ... Do not you feel like you're stretching to the other side?P: Do you stretch it?
 SD: Yes. What... I'm sick here and my back is sick again ...
 P: No. I do not know
 SD: You do not know that. Yes. Are you mad, are you?
 P: Sometimes I think I have some time to do that. (Jo Hyun-young, 2015)

In this situation, the doctor questions the patient and confirms the patient's answer again and again. It looks like a self-affirmation of the patient's answer, but anyone in the room can hear it. However, one interesting fact is that the doctor is reconstructing the patient's ambiguous and uncertain answers in a way that redefines meaning in the process of re-speaking. For example, when asked about the aspect of pain, the patient's answer to "I'm sick" is to say that the patient feels sick, "You feel sick." The patient may say "sometimes is sore," which implies that there is a feeling that it is not in the grammar.

However, the doctor does not specifically ask about it anymore, but it limits the aspect of the pain to feel sore. However, the patient does not refute the doctor's words. Likewise, the part of the pain is also answered by the patient, "Are you sick near Meiji?", And vaguely and uncertainly answer the boundary of the pain area. However, when the doctor tells a part of the pain in a situation that a physical examination is taking place a while later, the assertion that "the pain says that the pain is painful," continues the next question. Likewise, the patient does not refute this, and rather, the patient complains of a strong pain in the 'precisely on the spot' in the following physical examination situations. Unlike the ambiguous description of the patient in <situation>, the abdominal pain of the patient appears to be very self-evident in the following situations.

The way the doctor reconstructs and speaks the patient's words seems to be a simple self-talk, but it plays an important role in determining the meaning of the patient's answer. If the patient says "near the mites" and vaguely says the boundary of the pain, then in the next dialogue, if the doctor says "mitsuchi area" and the boundary is limited, then the conversation follows without any mention from the patient. This does not directly answer the question, but implicitly acknowledges that there is no major disagreement over what the physician has defined as the site. The patient's acknowledgment or rejection of the doctor's passive words determines whether or not the next conversation will proceed to negotiate on the issue or to move on to the next question. This type of utterance also provides a time margin to recall the contents of the next utterance, reminding the patient again. If the gap between conversation and conversation, and between conduct and action, is too long in a natural medical setting, then this is very awkward, or is likely to be interpreted as having any meaning.

Therefore, unless the pause space has a different meaning, words or actions that naturally lead to the situation must be made while searching for the next action. In particular, in the virtual clinical situation of the clinical performance evaluation, the student doctor reconstructs the words of the standardized patient and restricts the meaning of the symptoms necessary for the diagnosis, so as not only to find the clue for solving the problem, I will secure time. This type of interaction shows the characteristics of asymmetric interaction between expert and non-expert. Experts are in a position to solve problems very positively in the way of diagnosis and prescription, somehow, among the individual and similar situations of patient care. Thus, the physician must be able to deal with ambiguous symptoms in some way by himself or herself as a problem that can be explained, and this can be done through a process of discourse of mutual interaction.

In other words, the expert appropriately takes advantage of various resources placed in the circumstance surrounding him in the problem situation, that is, the unequal power relation with the patient's speech or patient, and thus, it brings the situation to the intention. In other words, in order to narrow the gap of difference, the similarity of context is changed to the same through strategy of placing situational factors in place.

Heidegger explained the strategy of the context through the two forms of existence, 'distance elimination' and 'distance orientation' (Pak Chan-guk, 2014). It is equivalent to 'distance removal' to make it easy to use the necessary tools to do something. This means that they are familiar and proficient. The closer the distance is, the greater the dependence on the object becomes, and as a result, it becomes invisible enough to recognize the existence itself, and it becomes comfortable and familiar.

Distance or visibility here does not imply a physical meaning. This is very contextual and relatively dependent on the use of the tool. For example, when we are nailed, even if the hammer is only 2 meters away from me, it is as if it is considered to be far away because it is not a distance that can be reached when reaching out. In addition, objects that are so close and familiar that they cannot be visualized can be seen to be more distant than other visible objects. For example, the presence of glasses that I wear can be felt farther away than someone in front of the conversation.

Familiar and comfortable being has the characteristic of taking a direction at the same time as eliminating the distance. The actions of removing the tool's distance and orienting occur continuously in the flow of the situation. You need a hammer and pliers to nail the wall. Hammers and pliers are used alternately and at the same time, depending on how the actor hammers. Thus, hammer and pliers can be nailed without clogging, depending on the action to be followed, sometimes in a way that makes the nail easier to hold, and sometimes when the pliers are placed in a more accessible way. Direction refers to the act of adjusting the distance between the tool and the actor in the context of work.

Take the course of learning how to ride a bicycle on an unfamiliar road. When riding a bicycle on a smooth, even road, the functions of bike riding, such as how to hold the handle and how to step on the pedal, are very familiar and comfortable and are not to be taken seriously. However, if you are in a new situation, such as when you need to overturn, you must loosen the handle, hold it firmly, adjust the pedal slowly and quickly, and adjust accordingly. In addition, when the brake is applied, the driver can predict the flat road to be unfolded, gradually release the brake, and step on the pedal. The skills required to ride a bicycle here mean that the situation can be adjusted appropriately, sometimes by bringing some of the tools closer to the situation and sometimes a little farther away. It is also a process of predicting and preparing the direction of the tools to facilitate the use of the next necessary functions among the situation to be unfolded next and previous situations.

On the other hand, catching a direction here implies that the meaning of the tool itself is expanded while meaning a deformed action such as a residue or a residual technique. The presence of the left and right directions is possible only when there is a standard of forward direction. And how much you know the difference means you have become more familiar with where the forward is. It is easy for us to think that it is the force that applies to the object itself, but we actually take the way of coordinating the circumstances surrounding it.

It is also an activity that relocates the resistance factors that are a stumbling block to what you want to do. This process is a process of constantly inquiring the dissolution in ambiguity, and the experience of failure in this process is an experience of various situations and an educational experience to utilize situational resources. All of these experiences remain as meanings that enrich the emotions surrounding the object. There are no meaningless moments in the experience of trial and error, and the situated experience remains a potential resource that can be mobilized for other practical purposes.

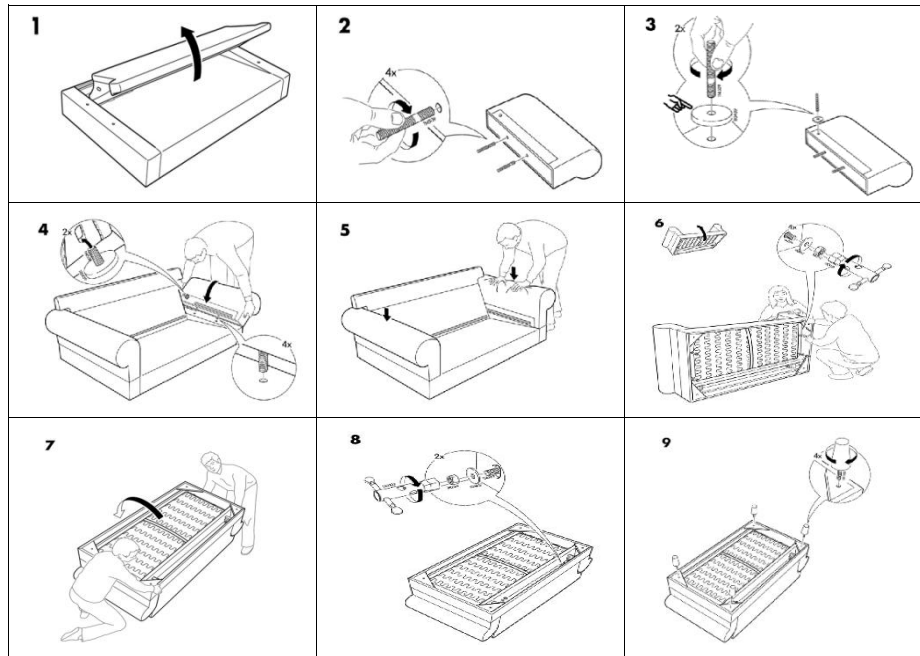
In this respect, practice implies a repetition and at the same time a constant renewal of change, carried out in a tense of and a desire for perfection that can never be achieved. Repetitive practice and variation created by imperfection means stopping in that state, but sometimes it leads to the creation of a new style in itself. In the end, the practice to master knowledge or skills is situated learning that repeatedly experiences the differences

and identities between situations.

3.3. How the sharing of experience depends on contextual participation: Examples of Visualization as Practice

1) Visualization as manual? or practice!

In the case of furniture, as well as those that are sold for direct use, the manufacturer will also provide assembly drawings to assist the assembly. Particularly, as the sharing method of information through the Internet has become popular recently, there have been various ways of sharing information about assembling processes and strategies by showing photographs of the process of assembling directly other than assembling, or uploading video materials. These materials generally visualize information that is difficult to deliver in a language so that the user can more easily follow the production process. So how can these visualizations provide accurate and abundant information about the knowledge or technology you want to convey? The following is a furniture assembly drawing of I company famous for prefabricated furniture.



In the above furniture assembly diagram, it is explained that it is possible to assemble the finished form of furniture simply by following the order. How much assembly and actual assembly can match? Obviously, assembly charts complement the limitations of the language's information delivery capabilities and provide more specific information. The purpose of each step is to visualize and communicate the necessary manipulation methods in the process as much as possible. Nonetheless, the ambiguity always follows the user who wants to follow what the drawing of the assembly drawings means. In the above assembly diagram, the direction of the arrows shown in each figure and the assembly order of the screws are not clear.

In the actual assembling process, the drawings shown in the assembly drawings are achieved only when they are accompanied by practice of finding the meaning through the method of actually comparing the object and the picture, applying the action, and coordinating it. For example, the sophistication required to handle an item, the strength of a force, the direction and angle of tightening a screw, and the like are in fact lacking in information only by the arrows shown in the drawing. And differences in the manipulative abilities and physical conditions of individuals dealing with it also make a difference in utilizing and interpreting the information. Of course, previous experiences and background knowledge also make a difference in understanding the drawing. In other words, these visuals, which contain a skill or experience, do not convey any information by themselves. In fact, the visualized information at each stage shows some of the information needed at each stage, but what it means depends entirely on the user's competence. In order to understand how information or technology is delivered through visual materials, you should look closely at how users are doing in real-world situations.

The reason why visualization data is limited in conveying information is that people usually do not see phenomena or objects as they are. What someone sees is determined practically by his point of view, intention, and context. Simply speaking, people see what they want to see. In this respect, it is possible within a limited

range that visualization material directly affects learning as a change of understanding or experience. In order to see something different from what you saw in the first place as a result of the learning of new information, it is not enough to just work visually. It must be accompanied by other perceptions.

2) Seeing as practice to situate one's body

The following are observations of a 5-year-old child learning a new letter.

Mom: (Drawing the letter 'P') So you write 'l' and you draw 'o' like this.



Child: Okay. All right. (Draw a picture with 'l' and 'o' attached to it)



Mom: No, it's not (it's a 'l' and repeating the shape of the right semicircle).

Child: All right. (Draw a picture with 'l' and 'o' attached to it, draw a few more pictures with a look compared to your mother's picture)

Mom: No. Take a good look. Do not draw the circle, but stop here. Hold your hand and draw a 'P' together.

Child: Oh ... Stop it? (Again, I look at the picture of the mother)

This is a good example of how to look at how things are done as you are familiar with them rather than seeing them as they are. In the above situation, it can be inferred that the child's reaction to the letter 'P' would have been a combination of 'l' and 'o', which are already familiar to him. Perhaps it is not easy for a child who has never painted a semicircular representation.

In the above example, the child starts seeing the circle as a semicircle by drawing a semicircle with his own hand, guided by his mother's hand. The shape of the 'P' that the child finally reaches is not the result of changing his or her understanding, but a product of the practice of collaborating with his mother and discovering the difference by acting his own hands. In other words, the child was looking at something else while looking at the hand with her mother. An example of how cooperation with a mother can differentiate a child's perspective and thereby enable a child to achieve different interests. The act of interaction thus provides a primer that opens the possibility of a proper understanding between subjects and objects at every moment.

3) Indexical expressions as taking a field into view

The transmission of some experiences is possible not only by demonstrations but also in talks. **The transmission of experience through talks are the most typical example seen anywhere in everyday life.** At this point, talks are more like an act of directing or urging action on where to focus attention than a representation that conveys the content of experience. Here, the words are concrete, interactive, and 'proximal language' rather than abstract and literary 'distant language'. A good example of the fact that we are using proximal language as a practice is the 'indexical expressions'. The use of situational directives is an example of how our thoughts and actions are immersed in the context and difficult to distinguish between the two. The simple example of situational directives are adjectives such as 'i', 'it', 'i', and these words can be understood only by referring to the situation of utterance. The problematic of situated learning also originated from dealing with the indexical expressions in learning.

In daily life, the use of indexical expressions such as context directives is very broad. In a situation in a chemical laboratory, let's consider a case where the researcher told the assistant, "Now the water has been boiled enough." For example, if we translate this into an objective expression, we can say that "H₂O is heated to 97.7 degrees Celsius at 13:57 Korea Standard Time." But people do not actually use such objective expressions in their life world or in the process of doing things. People know that they in concrete situations can already use meaning with contextual expression. **Indexical expressions guarantee stability and practicality rather than using correct and objective expressions in real situations.**

For example, people do not take a pause to the work, objectively explain the contextual expressions, or check to see if it is delivered to their colleagues and return to the work that was done again. If people have to speak in such a way, what they want to do or the conversation they want to share will not be developed purposefully. In addition, it is assumed that the context could be shared among the participants. Therefore, when the proximal language is freely used, attentions can be more focused on the object(problem space).

When talks that are closer to ordinary life are used, they function actively, leading to more successful manipulation of the situation and thus the successful work. In other words, a language closer to 'forms of life'

and commonsense understandings can lead to shared knowledge or empathy. If we express this in terms of Sennett (2008), it is important that "expression itself is not important, but what purpose it is for the act of mobilizing imagination".

Sennett (2008) described in detail his mastery of techniques, such as dexterity, in his book 『The Artisan』. I will try to cite Sennett's example for a longer period of time in how the use of proximal words in the delivery of experience will cause learners to empathize. Sennett explains how he brings imaginative power as a close approximation such as a metaphor which we live, that is, situationally directed words that identify similar things (Lakoff & Johnson, 1980) is. In the act of learning while following the old man casually, the language of the imagination which equates the act of the old and the act of the old is mobilized. One example is her experience of a situation where a poor grandmother with English from Europe delivers her traditional recipes and follows. His explanation is about recipes presented in metaphorical expressions rather than precise descriptions of recipes (for example, a numerical value indicating the amount of spice entering, a description of the degree to which the meat is cooked in a few degrees of fire).

"Your child is dying here [pointing at the chicken], preparing the child for new life [bones], filling him with earth [stuffing], be careful! The child should not eat too much [lightly put the material], clothe the golden coat [grind it before learning], make a bath [prepare soup for life]. Now I have a child, but I have to be careful! A child dies when exposed to too much sunlight [heating temperature is 130 degrees Celsius]. Give your child gems [sprinkle with soft pepper sauce after cooking]. This is my recipe." (Sennett, 2008, Kim Hong Sik, p. 308)

In the above quotation, the grandmother's recipe for cooking a chicken is an objective expression (in []) that the parable and the parable want to direct. Sennett explains how close-ups such as metaphors can convey experience more precisely than objectively and accurately communicated.

"When you compose a story in a sympathetic way, a lot of analogies are mobilized. The parable here is a loose analogy, not an exact analogy. There is a reason for loosening the analogy. Cutting chicken tendons is technically like cutting a string, but it does not feel very similar. This loose analogy opens the moment of learning to readers. If it is not 'the same' but 'similar', it induces attention to the very act of cutting the tendons. A place where the hands and the brain of the person to be cooked actively exchanges opens. A loose analogy is emotional, so when you are told that the person who first comes into contact with the action or action is similar to what you did before." (Sennett, 2008, Kim Hong Sik, pp. 299)

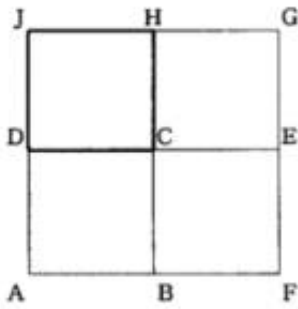
When describing something, I adjust the context of the imagination to see the object, not the object as abstract. Once the phenomenological field is 'created', imagination becomes possible and eventually the whole process can be seen. In other words, it helps the imagination by making the situation shareable. The use of such proximal expressions allows us to imagine the whole process of the process first and to engage in the practice in order to bring about goal-oriented participation in the process of actual practice by letting the participants know in advance what they should aim at and what process they will be moving forward.

If you think you should follow the instructor's directions in doing things for the first time, you will never free from the instructor who are looking at my behavior and pay attention only to the standards unknown to you. Eventually, the learner cannot concentrate on the situated action he / she does first, and then he / she worries about outcomes and possibly ruins the work. However, if we relate to the former experience of the actor through loose parables, we feel sympathy with the instructor and can concentrate on the act itself rather than the uncertain outcome, along with emotional confidence that we have experienced.

According to activity theory, a story is the object of our act as if it were an artifact. A story or talk is an object and it is the object of artifacts. Before a word is pre-emulated, it focuses on the meaning of a linguistic function, and after it has become an emotional word, it is used as an artifact like a speech object. Here, the word itself is a medium that enables work, and the talk itself is also a work. Also, among those who work, talks are not only used for how to reach a goal, but they also create their identity, and they also create devices that afford or exclude actions.

The following is a scene of a situation in which Socrates and Sadong(slave boy, Menon) teach and learn about the principles of Pythagorean theorem in a way that interweaves with each other.

<Case 3>



B40 Socrates: Now let's draw a line connecting this corner to this corner. Do these lines divide each of these squares in half?

Sadong: Yes.

B41 Socrates: If you draw four of these lines, you will have one square (BEHD)?

Sadong: Yes.

B42 Socrates: Think about how wide this new square is.

Sadong: I do not know.

B43 Socrates: There were four squares. Did each line segment each square in half?

Sadong: Yes.(syncopation)

B49 Socrates: Is this a four-figure-wide square from the corner to the side of the square?

Sadong: Yes.

B50 Socrates: These lines are called 'diagonal' by scholars, and if you use this term, do you think that the square with one side of this diagonal is twice the square of the first?

Sadong: Yes, Socrates. (Excerpt from Kang Wan, 1996)

In the above dialogue, you will see 'this corner and this corner', 'split the square in half', 'these half pieces', 'from corner to corner of the square', and 'one side' - this is DB '. On the one hand, contain an explanation of mathematical principles. On the other hand, these explanations consist of very common meanings that can be seen by anyone who is familiar with minimal knowledge and is in the process of indicating a figure or splitting a figure. In other words, according to the structure of perception induced by the instructor, **the process proceeds as a routine and non-meditative act as much as it is to see, hear, and speak 'moment by moment'** (Cho & Shon, 2015).

Here, we can conceptualize the practical strategy of the teacher as a 'participatory appropriation', 'Participatory appropriation' is contrary to the logic of 'internalization' in that it can be dealt with by internalizing knowledge. Knowledge to be dealt with is understood and utilized only by participating in the context. It also means that the information and knowledge handled in the field are revealed by contextualities and indexicalities embedded in the field, so that we have to tell the meaning through participating in the situation (Hall & Nemirovsky, 2012). These strategies mobilized to communicate knowledge are discursive practices in that they are usually spoken by words. The discourse practice implies that the word plays a role of prompting, directing, controlling and adjusting something rather than the role of representation. The function of performative utterance implicitly conveys the operative meaning such as 'what should be regarded as important' and 'how should we remember when we have a similar case next time'?

In this example, the mechanism through which knowledge is conveyed is not the use of visualized data, nor the word that conveys knowledge, but the structuring practice of perception induced by the process of 'methodically exchanging' questions and answers between the instructor and the learner. Each of the words by the instructor acts as an indicator to the situation or an instruction to the perception act, and its meaning is not so different from the everyday common words which are so 'self-explanatory' among the users that they are all 'learnable.' No one will look at the shape of the figure as it is, that is, objectively, and selectively structure only the parts that are perceived and protruded according to the instruction of the teacher. In other words, the learner sees only what is expected in the context of induction of experience leading to perception, that is, in the context of audiovisual.

Let's take one more example of how the delivery of experience through visual materials is learning by situated learning, that is, learning by practice or sharing. Goodwin (1994) analyzed microscopically the work of

archaeologists on how to establish a metaphor. Archaeologists find something in the "ground" in the sense that it is hard to see in the eyes of ordinary people, and finds out the relics and traces of the prehistoric people. It is a process of discovery that is involved in the practice of experts, such as interpretation and work, so that it is hard to say that it is just a discovery if it is a process of discovery, but it is a process of discovery when a practitioner takes a name. It is a discovery of objects or traces placed objectively, but only as much as it is re-constituted by the practice of an expert. His analysis shows how the practice of an expert takes an object into view and constitutes an object in an operational state through practical strategies. In particular, he notes the following practical strategies for taking the situation into an object:

First, as a coding act, it is a strategy to transform phenomena into knowledge objects.

Second, as a highlighting act, it is a strategy to turn the situation into an intentional phenomenological field by highlighting only certain aspects.

Third, it is a strategy to represent things, which is to describe things, by perceiving things, as knowledge itself.

These strategies are actions that enable objects to be expressed and manipulated to perceive themselves as knowledge. These strategies are often used everywhere to do something. They may be understood as a practical strategy to create conditions that can work on activity that objectify the condition purposefully. It is not the visual function of these strategies that enables them to communicate knowledge or experience, but the performative function. In this respect, the fact that visual data has its function is based on situational practice, which is anchored in objects structured in discourse.

4. CONCLUSION

It can be said that situated learning for someone is not an unfamiliar theory, which is nothing new in educational theory. It is not surprising that learning-by-doing and reflective practice are closely related to each other. The more extended interpretation is the similar educational theory to organizational learning, community learning, even learning ecosystem, PBL and lifelong learning. It is because I can think. Action science researchers such as Schon, for example, argue that experts do not apply professional knowledge and skills to situations based on scientific methods, but rather reflexive practitioners, ie, (Bricoleur) to solve this problem. These insights have been reflected in research and education related to professional development through contextualized programs. This is also the case with numerous studies related to practice. Or if they are the fundamental educational theories that provide more systematic epistemology to these educational theories.

If there is such an evaluation, the attitude that situational learning is not different from the existing educational theories arises from considering situational learning as a macroscopic model of education and learning design. In other words, the paradigm of situationalism when approaching 'situation' from the viewpoint of transcendent outsider rather than situational viewpoint of participant does not present any new understanding of learning and new design possibility. At the moment of taking such a viewpoint, the situation issue does not hold.

It is like irony that contextual research should be centered around story plot. In the contextual paradigm, the points at which experience and learning are established are not in the text but in the context of the situation. What we can accomplish is because of the situational reasoning of 'always present' seeking 'next' in the context of work, not the knowledge mobilized in the work. Such a situation is a passing moment, but a thick description. It is a thought derived from a transcendental point of view that the development plan will show the course of a certain work. From a participant point of view, the process is a continuous repetition of the present and the next. For those who want to find a development map, a situational perspective can be considered a trivial story that does not present any new meaning.

For a long time, the researchers regarded contextual variables as peripheral factors for obtaining text and systematically excluded them. To derive the generalized principle of conditional reflection in Pavlov's laboratory, we can imagine how things in daily life surrounding the experiment were excluded as situational variables. For example, the amount of saliva from a laboratory dog that was "made to come out" when the bell rang was needed to be constantly managed in the laboratory, because of various unexpected variables in daily life.

A child mobilized for Piagetian conservation experiments responded 'appropriately' to the inducer's question, which was treated as a circumstantial condition variable unrelated to the research hypothesis. In behaviorism and cognitive paradigms, the acquisition of conditional reflection and conservation concepts is an important key to understanding learning. But the routine and practice in the laboratory can be a key to understand learning as well as how they are doing what they are doing. The attention to the learning of situationalism begins with situations taken for granted.

Situated learning asks for the logic and model of professor of minimalism as an educational theory as it is the focus of the composition of the situation, that is, how 'here now' finds 'next'. Learning is an aspect of experience that occurs between the present and the next, rather than the development of work, as it is distributed in

everyday life before it occurs in the thinking frame or the moment when experience changes. The reality that learning parties experience is a repetition of a structured situation. For example, the design that presents the PBL from the viewpoint of information processing and the design that it presents from the viewpoint of situationality will be different from each other.

Situated learning as a practice also shows that learning about conceptual knowledge is also achieved through the practice of participation, that is, the interactive use of tools through the body and things. Learning Design for Sociology calls for a completely different approach to learning design from knowledge structure or cognitive processes (Abrahamson, 2009; Kirsh, 2013; Nishizaka, 2006; Pea, 1997) The viewpoint of the perspective of the viewpoint will certainly provide a story that will allow us to reconsider the gap with the reality that it is bound to have. Discrepancies between PBL development and its development from "taken for granted", practice-based learning models and disparities in the course of their practice. Such a difference is also the difference between a design prescribed in the logic of knowing and a design prescribed by logic of life. Of course, in the practice community theory, the design of learning which is prescribed by logic of life, not the logic of knowing, is presented. However, the understanding and design of situational learning needs to be embodied as a micro-practice unit rather than a macro-organizational unit in order to provide a richer story about learning.

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On the Level of Academic Achievement of the Vocational School Students: The Effect of Motivation

Sinan AYDIN

*Kocaeli University Kocaeli Vocational School Kocaeli Turkey
sinanaydin1704@yahoo.com*

Yaşar GENEL

*Yüzüncü Yıl University Education Faculty Van Turkey
yasargnl7@yahoo.com*

Kazım KAHRAMAN

*Kocaeli University Kocaeli Vocational School Kocaeli Turkey
kazim_kahraman@hotmail.com*

Yusuf TOLA

*Kocaeli University Kocaeli Vocational School Kocaeli Turkey
ytola@kocaeli.edu.tr*

Mustafa OF

*Kocaeli University Kocaeli Vocational School Kocaeli Turkey
mustafaof@gmail.com*

Celal MUTLU

*Kocaeli University Kocaeli Vocational School Kocaeli Turkey
c_zeno@hotmail.com*

ABSTRACT

Motivation, a positive effect that directs behavior toward a goal could be perceived as one of the most important psychological concepts in all area of the life especially in education. In this study, it was investigated the relationship between academic achievement and motivation of vocational school students according to gender and class parameters. 192 vocational school students from 4 different programs (accounting, business, chemistry, and construction) attended the Academic Motivation Scale (AMS) which was prepared by Vallerend (1992). The AMS consisted of 28 Likert-type scale questions related to intrinsic motivation, extrinsic motivation and amotivation. Findings of the study indicated that there was only one significant relationship that was between academic achievement and two intrinsic motivation subscales. Females had higher scores in all motivation types. Also, there was only significant differences between males and females for intrinsic motivation. And, according to departments, there was significant difference in motivation by department in extrinsic motivation.

Keywords: motivation, academic achievement, vocational school

INTRODUCTION

Motivation is an internal process that make a student move toward an educational goal. We can say that it, like intelligence, can't be directly observed. Self-determination theory (SDT) developed for understanding individuals' motivation say that the impetus of motivated behavior is having the experience of choice and emotion of efficacy in actions (Eymur & Geban, 2011). One of the main characters of SDT is that the theory suggests motivation as a multidimensional concept (Deci & Ryan, 1991). In this study, they stayed that there are three main types of motivation which are intrinsic motivation, extrinsic motivation and amotivation.

Intrinsic motivation means that to being engaged in an activity for the pleasure (Deci & Ryan, 1985). Intrinsic motivation for a function is turn out when the function is carried out of interest, enjoyment, or inherent satisfaction (Vallerand & Ratelle, 2002). Main part of this kind of motivation are that intrinsic motivation to

know, intrinsic motivation toward accomplishments, and intrinsic motivation to experience stimulation (Vallerand & Ratelle, 2002).

Extrinsic motivation means that the individual's motivational stimuli are coming from outside. By extrinsic motivation, our desires to organize an activity is controlled by outside source (Vallerand & Ratelle, 2002). when somebody need the intrinsic motivation active, consistently performing a behavior for the lack of receiving a prize may lead increased feelings of control loss.

The main parts of extrinsic motivation are integration, identification, introjections, and external regulation. Integrated regulation is a function is integrated into the person's behavior for intrinsic pleasure. Identified regulation defines conditions in which persons force themselves to take a function which is more general Introjected regulation is controlled by rewards Externally regulation is the lowest type of motivation (Petrie & Govern, 2004).

A motivation is the lacking any motivation to do an activity, and characterized by a failure to value the activity. It is also defined as the lack of both extrinsic and intrinsic motivation. It is the representation of the belief that one's behavior is the result of something out of conscious (Cokley, 2001).

It is well-known educational concept that to raise teachers' motivation for teaching and improving quality of education needs the comprehending of the relationship between teachers' motivation and academic achievement. Investigation of vocational students' motivations is not adequate in the literature. In this study, we aim to explore the relationship between academic achievement - motivation, and the motivational difference between gender - departments.

METHOD

In this research, 192 students that accounting, business, chemistry, construction and electrics programs from a vocational school attended as voluntary The students of sample are 68 females and 124 males which age between 18 and 21. In the study group, 52 students from accounting, 55 students from business, 46 students from chemistry, and 39 students from construction. The Turkish version of Academic Motivation Scale (AMS), modified by Eymur and Geban, was used (Appendix A). It consists of seven factors with four items each: intrinsic motivation to know, intrinsic motivation toward accomplishment, intrinsic motivation to experience stimulation, extrinsic motivation identified, extrinsic motivation introjected, extrinsic motivation external regulation and amotivation.

To measure intrinsic motivation, extrinsic motivation, and amotivation of the students a questionnaire was used, and asked them to to indicate their gender, department, and cumulative academic average (GPA). AMS consisted of 28 Likert-type scale questions relating to intrinsic motivation (to know, toward accomplishment, and to experience stimulation), extrinsic motivation (identified, introjected, and external regulation) and amotivation (Vallerand et al.,1992). Achievement was measured by cumulative academic average (GPA).

The Cronbach's alpha coefficients were determined for each subunit of the AMS subscales (Eymur & Geban, 2011). The AMS subscales have the values of internal consistency between 0.60 and 0.84 which were: intrinsic motivation to know 0.84, intrinsic motivation to accomplish 0.81, intrinsic motivation to experience stimulation 0.80, extrinsic motivation identified 0.60, extrinsic motivation introjected 0.73, extrinsic motivation external regulation 0.75 and amotivation 0.79

An independent sample t-test was conducted to test the motivation of female and male. Analyses of variance were used to explain differences in motivation between departments. Pearson's correlations applied to investigate the relationships between academic achievement and motivation.

FINDINGS

Motivation and academic achievement;

The relationship between academic achievement and the AMS subscale was obtained by Pearson's correlations analyze. The results showed that there is only significant relationship between academic achievement and two intrinsic motivation subscales (to know and to experience stimulation). Pearson Correlation Coefficient of intrinsic motivation to know is $r = .521$, so there is a positive correlation between the *academic achievement* and *intrinsic motivation* to know. Pearson Correlation Coefficient of intrinsic motivation to experience stimulation is $r = .493$, this mean that there is positive correlation between *academic achievement* and *intrinsic motivation to experience stimulation* (Table 1). The all subscales are positively correlated except extrinsic motivation external regulation and amotivation

Pearson Correlation Coefficient between GPA and Motivation	
Motivational Subscale	r
Intrinsic motivation to know	0.521
Intrinsic motivation to experience stimulation	0.493

Table 1: Relationship between the motivation and the academic achievement

Gender analyze:

We can say that in the all motivation types, females had better points. T-tests analyze show that there were significant differences between males and females for intrinsic motivation to experience stimulation. Females' scores had upper level than males for intrinsic motivation to experience stimulation. (Table 2). For amotivation, the score was the minimum level in the all analyze.

Motivational subscale	Gender				t	df	p
	Female		Male				
	M	sd	M	sd			
Intrinsic motivation – to know	3.21	0.66	3.01	0.68	-1.96	188	0.04
Intrinsic motivation – toward accomplishment	3.02	0.78	2.67	0.81	-173	189	0.06
Intrinsic motivation – to experience stimulation	3.18	0.65	2.70	0.61	-2.75	189	0.00
Extrinsic motivation – identified	3.52	0.54	3.15	0.63	-1.88	188	0.03
Extrinsic motivation – introjected	2.41	0.20	2.31	0.92	-0.41	190	0.50
Extrinsic motivation – external regulation	3.61	0.69	3.57	0.70	0.36	188	0.61
Amotivation	136	0.86	125	0.85	-0.80	190	0.31

Table 2: Motivation by Gender

Department analyze:

The result showed that there was significant difference motivation by departments in one subscale of extrinsic motivation introjected ($p < 0.01$). Business and chemistry department students differed significantly from one another. Amotivation scores for all departments are low level. Extrinsic motivation (introjected) subscales is also lower than other subscales Business department students are more motivated than others (Table 3).

Motivational subscale	Departments								F	df	p
	Bussines		Accounting		Chemistry		construction				
	M	sd	M	sd	M	sd	M	sd			
Intrinsic motivation – to know	3.71	0.61	3.11	0.68	3.75	0.53	3.66	1.01	1.06	3	0.34
Intrinsic motivation – toward accomplishment	3.12	0.74	2.47	0.71	3.27	0.80	2.83	0.95	1.43	3	0.26
Intrinsic motivation – to experience stimulation	3.11	0.62	2.93	0.60	3.14	0.51	2.78	0.85	2.15	3	0.10
Extrinsic motivation – identified	3.67	0.59	3.15	0.73	3.36	0.67	3.17	0.77	1.18	3	0.13
Extrinsic motivation – introjected	2.20	0.80	1.51	0.72	1.91	0.72	2.28	0.75	5.41	3	0.00
Extrinsic motivation – external regulation	3.92	0.58	3.87	0.40	3.39	0.81	3.81	0.64	1.36	3	0.1
Amotivation	2.14	1.16	2.25	0.77	1.84	0.93	2.01	0.60	1.60	3	0.11

Table 3: F-test Statistics results by department parameter

CONCLUSION

Many educational studies conducted to investigate motivation of students and the relationship between motivation and academic achievement. In this study, we investigated the relationship between academic achievement and motivation and examine the motivational difference between gender and departments. it was found that there is a positive relationship between academic achievement and motivation, specifically, intrinsic motivation to know and experience stimulation.

Finally, we investigated the motivational differences between gender and department were investigated. Females were found to be more motivated than males in all motivational subscales. Also, there is a significant different between females and males in intrinsic motivation to experience stimulation subscale. According to the department parameter, amotivation scores slightly decreased. Besides, amotivation scores were low for all years and high motivational scores were observed bussines students.

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APPENDIX A

Akademik Motivasyon Ölçeği

Her maddeyi dikkatli bir şekilde okuduktan sonra, sizi en iyi ifade ettiğini düşündüğünüz rakamı işaretleyiniz. 1. Kesinlikle Katılmıyorum, 2. Katılmıyorum, 3. Kararsızım, 4. Katılıyorum, 5. Kesinlikle Katılıyorum.

Üniversiteye Niçin Geldiniz?

İlerde daha yüksek maaşlı bir iş bulmam için en az üniversite diplomasına ihtiyacım var	1	2	3	4	5
Yeni şeyler öğrenmek beni mutlu ve tatmin ediyor.					
Üniversite eğitiminin ilerde kariyer seçiminde bana daha çok yardımcı olacağını düşünüyorum.					
Gerçekten üniversiteye gitmekten hoşlanıyorum.					
Aslında, bilmiyorum; üniversitede boşa vakit geçirdiğimi hissediyorum.					
Çalışmalarımda kendimi aşma zevkine ulaşmak için.					
Kendime üniversite diploması alabileceğimi kanıtlamak için.					
İlerde daha prestijli bir iş bulmak için					
Daha önce görmediğim yeni şeyleri keşfederken ki hazzı tatmak için					

Sonuçta üniversite bana girmek istediğim iş dünyasının kapılarını açacak.					
Üniversite benim için eğlencedir.					
Daha önce üniversiteye gitmek için iyi sebeplerim vardı; ancak, şimdi devam edip etmemem gerektiğinden endişeliyim.					
Kendi özel yeteneklerimde, kendimi aşma zevkine ulaşmak için.					
Gerçek şu ki üniversite derecesi aldığım da kendimi önemli hissedeceğim.					
İlerde “iyi bir hayat” istiyorum					
İlgimi çeken konularda, bilgimi genişletme zevkine ulaşmak için.					
Üniversite kariyer yönelimimde, daha iyi tercih yapmama yardım edecek.					
İlginç hocalarla tartıştığım da aldığım zevki tatmak için.					
Niçin üniversiteye gittiğimi anlayamıyorum ve açıkçası çok da umrumda değil.					
Zor akademik aktiviteleri başarma sürecince aldığım zevki hissetmek için					
Kendime akıllı olduğumu göstermek için.					
İlerde daha iyi maaş almak için.					
Benim çalışmalarım, beni ilgilendiren birçok konuda öğrenmeye devam etmeme imkan veriyor.					
Üniversite derecem benim çalışma yeterliliğimi artıracığına inanıyorum.					
Birçok ilginç konuyu okuduğum da tatminkâr hissettiğim için.					
Üniversitede ne yapıyorum bilmiyorum ve anlamıyorum.					
Üniversite, çalışmalarım da mükemmelliğe ulaşmak için araştırma yapma zevkine ulaşmama fırsat veriyor.					
Çalışmalarım da başarılı olabileceğimi kendime göstermek istiyorum.					

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On The Way Towards Career Awareness: Interview With Graduates

Zehranur KAYA

*School for the Handicapped,
Department of Computer Use
Anadolu University
Turkey
znkaya@anadolu.edu.tr*

Meltem Ozten ANAY

*School for the Handicapped,
Department of Architecture and City Planning
Anadolu University
Turkey
mozten@anadolu.edu.tr*

Guzin KARASU

*School for the Handicapped,
Department of Intensive Turkish Program
Anadolu University
Turkey
guzinkarasu@anadolu.edu.tr*

Gokçen ABALI

*School for the Handicapped,
Department of Intensive Turkish Program
Anadolu University
Turkey
abalig@anadolu.edu.tr*

Mehmet Cem GIRGIN

*School for the Handicapped,
Department of Intensive Turkish Program
Anadolu University
Turkey
mcgirgin@anadolu.edu.tr*

ABSTRACT

Considering the problems; lack of recognition of hearing-impaired employees, facing difficulties in work environments, and requirements of work places, it can be said that raising awareness of hearing-impaired students in vocational education to inform them about working life and familiarize them with work places is important. For that reason, it is necessary to provide settings and opportunities, which bring graduates and students together and support knowledge transfer between them. Suggested action research aims to examine the process of "Interview with Graduates" activity, which is one of the important steps of career awareness study, conducted with hearing-impaired university students. The research was carried out with the participation of senior students and graduates of Anadolu University, School for the Handicapped, in 2015-2016 fall semester. As a results of the research, it has been determined that "Interview with Graduates" activity had positive effects on the improvement of hearing-impaired students' awareness and hearing impaired students were informed about things to do after graduation, jobs that can be applied, problems to be encountered, procedures for applying jobs, and work places.

INTRODUCTION

In The Disability Research of Turkey, conducted by Turkish Statistical Institute (TSI), it is aimed to determine the number, ratio, socio-economical structure, problems faced in social life, expectations, type of disability, reason of the disability, regional differences, and rate of having persistent disease of disabled people in Turkey. The results of the Disability Research of Turkey was announced to the public in July of 2004. According to the data of the year 2002, % 12,29 of the population of Turkey was identified as disabled, % 2,58 of which were defined as orthopedic disability, vision-impairment, hearing-impairment, language and speech disorders, and mental retardation. Hearing impaired population constituted % 0,6 of this population. As numerically, according to the data of 2017, it can be said that there are 478.889 hearing-impaired people in Turkey. Among this group, the number of hearing-impaired, who attended high school and above levels of education, is 53.157 (TUIK, 2011). In this group,

there are many obstacles to overcome for hearing-impaired people, who expect to attend university level education after high school. One of these obstacles is literacy problems (Kretchmer & Kretchmer, 1978).

On the other hand, when hearing-impaired students have a chance to attend university education by overcoming the obstacles, they face with the problems of inappropriate settings and insufficient educational methods for their disability. Higher education is one of the important steps of vocational education and it is the right for all individuals, whether they are disabled or not. On this base, Anadolu University, The School for the Handicapped (SfH) was established in accordance with the Law No: 3837 dated 03/04/1992 to cover the appropriate vocational education programs for hearing-impaired students, who need special education. SfH provides education in four programs, including two bachelor's degree and two associate degree programs. The main aim of SfH is to provide vocational education for hearing-impaired students, who completed high school education and to bring them into society as productive and independent individuals. The educational approach of SfH is formed with the programs, educational settings, which suitable for the disability levels and types of hearing-impaired students, and with specialized and experienced educators in special education.

STUDY

Every individual dreams of selecting a profession that suits her/his abilities and having a job that suits her/his profession. It is obvious that having a career provides an individual identity and social status (Simsek & Oge, 2011). Career development is a difficult and complex process that takes a long time (Adiguzel & Erdogan, 2014). Career means a lifelong effort and at the same time it refers to a progression process in a selected profession by an individual (Simsek & Oge, 2011). However, it is underlined in various researches that individuals, which attend vocational education, have difficulty in planning their careers.

The main reasons of this problem can be listed as follows; employment problems in today's work environments, unemployment problems, and the problems that disabled people face in work places in relation to their professions. Because of these problems, hearing-impaired and normal hearing young people have difficulties in planning their careers and most of them thought that just getting a job is enough for them, regardless of it is appropriate for their professional qualities or not (Dursun & Aytac, 2009; Kozak & Dalkiranoglu, 2013; Sarikaya ve Khorshid, 2009; Yilmaz, Dursun, Pektas & Altay, 2012). Formation and development of career awareness is a quite complicated process (Ferreira, Santos, Fonseca & Haase, 2007). For the management of their careers, individuals are expected to have some qualities, such as; able to learn new skills in a continuous way, able to establish effective communication with various types of employees and work with them, able to adapt to the changing needs of workplaces, able to acquire professional knowledge and use it effectively (Yesilyaprak, 2013).

Career planning is important, particularly for young people, who are at the beginning of their career. It is important to involve a set of career planning activities into the education process of students, to discover their knowledge, skills, and interests and to help them to create their career goals. These activities, which can be placed in education process, are listed as follows; ensuring students opportunities to meet and talk with experienced professionals, in line with career goals of students, organizing activities and practice opportunities for students to get information about career planning, and reorganizing internship process of students for more effective and informative results (Dier, 2000; Sharf, 2002). There is also need for educators to be informed about career planning and they need to perform informative studies in order to improve awareness levels of students through involving career planning activities in their courses. Particularly, it is also suggested that educational programs must be formed to support professional development of students and career activities must be integrated to educational programs (Dier, 2000; Kuzgun, 2003; Watts, 2001).

The main research that examined career planning activities of hearing-impaired students in vocational education process covered the years between 2013-2016. Present study, which focused on 2015-2016 Fall semester part of this research, explained "Interview with Graduates" activity as one of the career awareness activities. With this purpose, the answers were sought for the following questions in this part;

1. How the research cycle was carried out?
2. How the process of "Interview with Graduates" activity was performed?

METHOD

It is necessary to elaborate how the courses, which take part in vocational education programs of hearing-impaired, are planned in order to increase career awareness of students and how the activities are carried out for this purpose. Consistency of the research method with the research purposes and suitability of it to describe the process in detail are important. Since action research is a process oriented approach and has ability to provide indepth explanation of working process, it was determined as suitable for this kind of studies. For that reason, the research

was designed as an action research. Practice is central in action research. In action researches, qualitative and quantitative data collection techniques are used particularly for the solution of the problem. Cyclical models (Figure 1) are used for definition of the problem, collection of the data about the problem, analysis of the data, and providing improvements about the problem (Biber & Leavy, 2011; Creswell, 2005; Mills, 2003).

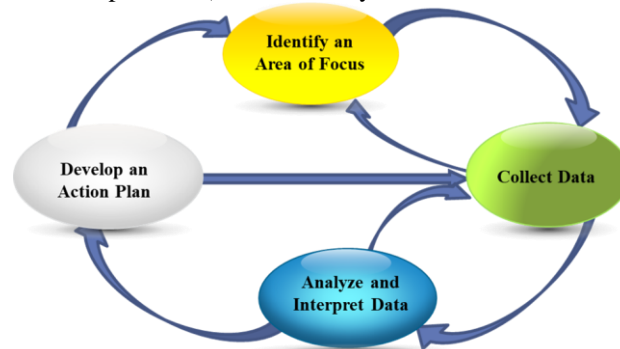


Figure 1. The Cyclical Model of Action Research (Mills, 2003)

The present research was carried out with the participation of senior students of Computer Operator Training Associate Degree Program, Architectural Drafting Associate Degree Program and Graphic Arts Bachelor's Degree Program in fall semester of 2015-2016 school year. In this article, the process of *“Interview with Graduates”* activity, which was conducted in *Professional Language* and *Language Arts* courses of aforementioned three programs, will be explained in detail. Students' recognition of work environments and what kind of works, duties were performed in the field of professional practice, and of conceiving where the graduates were working and what kind of problems, they faced, were significant to be able to make career plans by themselves.

Setting

The research was carried out at SFH. During the research, the data was collected from five courses in fall semester of 2015-2016 school year (Table 1).

Table 1: Focused Courses

Program	Course
Graphic Arts Program	Language of Graphic Design VII
Computer Operator Training Program	Professional Language for Computer Operator Training III
	Writing and Speaking Skills for Computer Operator Training III
Architectural Drafting Program	Professional Language III
	Writing and Speaking Skills for Architectural Drafting III

Focused courses of the research were performed in one computer laboratory, one field course classroom, and two language classrooms. Classrooms and laboratories were equipped with the material which were suitable for educational and communication needs of hearing-impaired students and the walls of the classrooms were covered with sound insulation material. Smart board was in all classrooms and laboratories. In laboratories, there was one computer per student and there was one computer for instructor in all classrooms (Figure 2).



Figure 2. Computer Laboratories and Language Classrooms, used in Focused Courses

Participants

The participants of the research were composed of 26 senior students, who attended SFH in 2015-2016 school year,

10 graduates of SfH, and 3 instructors as researchers, an internship coordinator, and an advisor. Researchers, internship coordinator and advisor were the members of the thrustworthiness committee. Students were the senior level students of Computer Operator Training Associate Degree Program, Architectural Drafting Associate Degree Program and Graphic Arts Bachelor's Degree Program in 2015-2016 school year. Average age of the students was 23. One of the students used cochlear implant. Other students wore ear level hearing aids. The 16 of the students had severe level hearing impairment, seven of them had profound level of hearing-impairment, and three of them had moderate level of hearing impairment. "Whole Communication" method was used to establish communication with the students in classrooms. Before the research process, students were informed about the purpose and the process of the research and written permission letter was taken from them. Since Ceramic Arts Program had no senior student, during the research process, students of this program did not involve in the research.

The research data was collected by the first and second authors, who were carried out the courses "*Professional Language*" and also responsible for the field courses of vocational programs and the third author, who was carried out the courses "*Writing and Speaking Skills*" and "*Turkish Language Skills*". Internship coordinator participated to all of the focused courses and played an important role for strenghtening of the cooperation between researchers. At the same time, she was the instructor who knew sign language and provided support for the students, in terms of communication, during the courses. The advisor supervised the research process and provided point of view for the researchers. Researchers were the faculty members, who had around 20 years of experience both in their professions and in the education of hearing impaired. In addition, they conducted projects, PhD thesis and published book translations in the field of action research. Their studies were presented in congresses and published in academic journals.

Data Collection and Analysis

Qualitative and quantitative data collection techniques were used during the research process. Research data was collected through; classroom observations and video recordings, course plans and reflections, voice recordings and reports of researcher meetings, diaries, products of students, documents, interviews, and e-mail and Facebook messages and sharings, Whatsapp messages. For validity and reliability study of the data collection tools and techniques, expert opinion had been taken. Data collection and data analysis were conducted concurrently. In relation to the goals of the research and based on the decisions taken in researcher meetings, the data was analysed systematically, reflectively, and in a cyclical way.

FINDINGS

In this part of the article, findings are persented in relation to the research questions.

How the research cycle was carried out?

The researchers, who were responsible from field and language courses in the school, observed that students faced some difficulties in their internship, gradaution, and after the graduation processes. First of all, they defined some problems about that due to the language limitations of hearing-impaired students, they could not benefited from written and oral sources and they began to investigate to determine the situation of the problem in a more detailed way in 2013. In this process, a facebook page was opened to establish communication with SFH graduates and they applied to the page. At the same time, a quetionnaire was developed and presented to the graduates via internet and opinions of them were collected. At the end of the research, it was determined that graduates had problems on awareness about workplaces, about works done in workplaces, and communication in workplaces (Kaya, Ozten Anay & Girgin, 2015). For solving these problems, it was decided that there should be awareness activities about after graduation as part of the courses in education process.

After the definition of problem, pilot study was carried out in fall and spring terms of 2014-2015. With pilot study, it was aimed that students must recognize workplaces to develop career awareness and their visits for future workplaces were organized. Facebook page for graduates were decided to be used for this reason. Based on this Facebook page, an additional page was organized for senior students with the name "We are graduating, help!" Students asked their questions directly to the graduates using this page, in class and off class times. In the process of pilot study, two activities were planned and performed to recognize work places. With these activities, it was observed that contribution to the development of students'awareness about career issues was provided and they asked questions about graduation and continued to communicate with graduates. After this development, it was decided that organized activities shoul be increased and continued and application data should be collected in fall and spring terms of 2015-2016 school year.

In the fall-spring 2015-2016 period, in which the data of peresent research was collected, various activities were planned and applied for the awareness about graduation and career issues in 12 courses in total. The research cycle

is presented in Figure 3.



Figure 3: Research Process

In the process of research, interdisciplinary study was conducted between Professional Language courses and Language Art courses. The research was developed through weekly meetings. The activities carried out during the research process were listed in Table 2. This study was approved and supported by the school director and she gave positive efforts by providing school facilities for activities of the research and participation of all of the students to the activities. She also facilitated the research process by approving necessary changes in course contents, suggested by the research team.

Table 2: Activities

Activity	Sub-activity
Activities to recognize workplaces	<ul style="list-style-type: none"> • Internship Story • Interview with Graduates • Workplace Visits
Job Application Activities	<ul style="list-style-type: none"> • Presentation for Job Application Techniques • Job Application Documents • Preparation of Job Application Portfolio • Rehearsal for Job Application Interview
ISKUR Activities (ISKUR is a government institution to apply for a job in Turkey)	<ul style="list-style-type: none"> • ISKUR Visit • ISKUR Application as Disabled • ISKUR Presentation

Students were evaluated through homework and exams grades in the process of performing the activities. Each activity had its product. In the present article, the process of “*Interview with Graduates*” activity, as part of “*Recognizing Workplaces Activities*” will be explained.

How the process of “Interview with Graduates” activity was performed?

Various activities about introducing workplaces were planned for senior students, as part of *Professional Language* and *Language Arts* courses in order for familiarizing students with work places, where they will work similar places after their graduation, and established communication with graduates, who were valuable sources for them to learn first-hand working life experiences of a hearing-impaired. The courses, in which the activities were carried out, was listed in Figure 4.

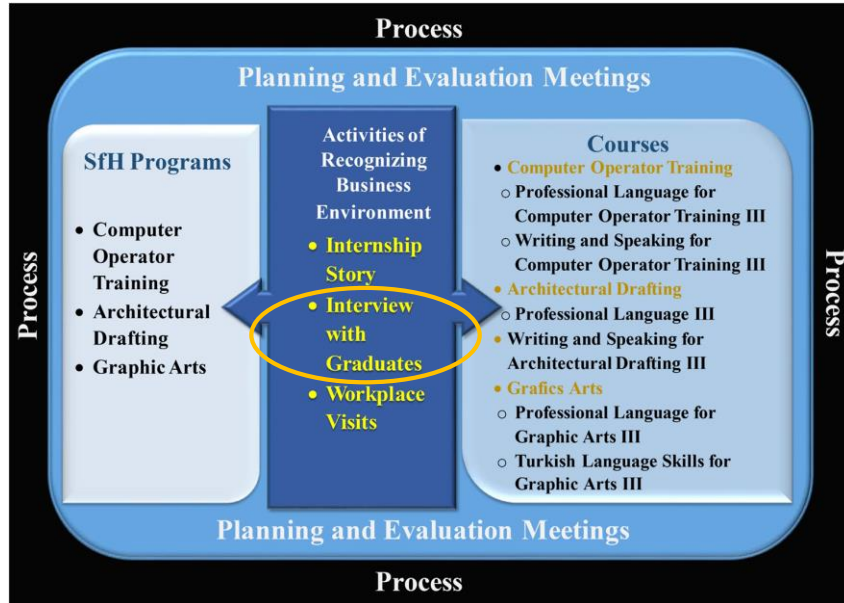


Figure 4. Activities for Recognizing Workplaces

Interview with Graduates activity composed of various sub-activities. Each activity was the issue of separate lesson and carried out by supporting different techniques and strategies. Figure 5 shows sub-activities and studies done in this process.

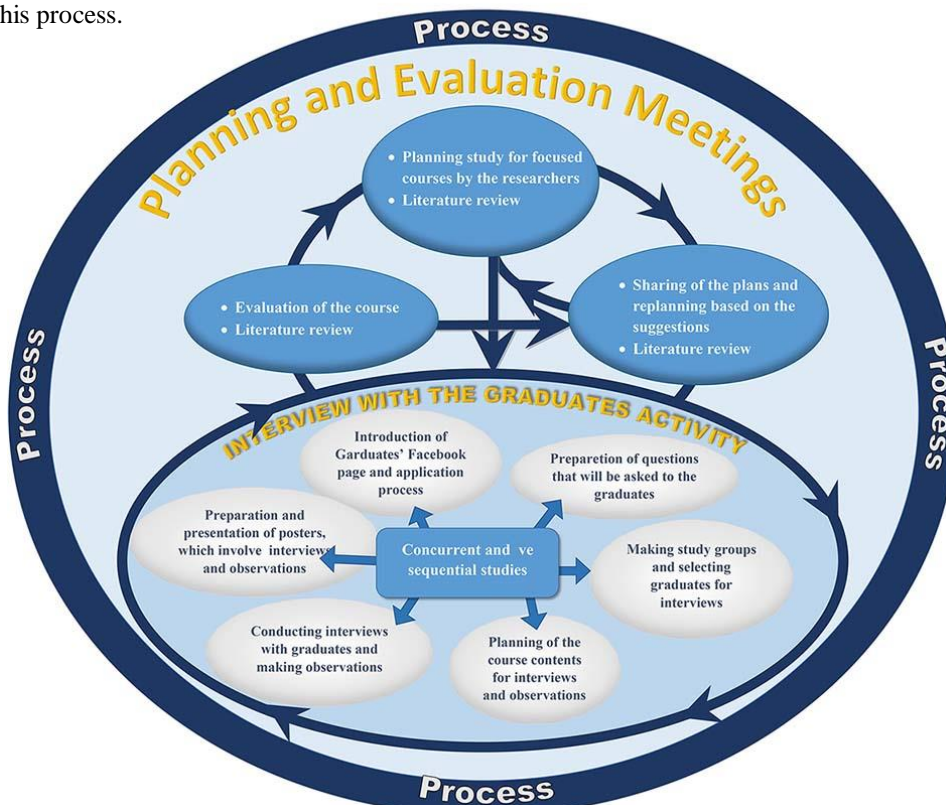


Figure 5. The Process of Sub-activities of Interview with Graduates Activity

Activities and sub-activities were carried out sometimes concurrently and sometimes in succession. “Interview with Graduates” activity was performed between 16/12/2015-13/01/2016, in fall semester of 2015-2016 school year. In the beginning of the semester, the process and the dates of “Interview with Graduates” activity were decided in Planning and Evaluation Meeting, dated 14/10/2015. Sub-activities and the dates are listed in Table 3.

Table 3. The table for Sub-activities of Interview with Graduates Activity

Sub-activity	Date		
	Computer Operator Training	Architectural Drafting	Graphic Arts
<i>Introduction of Facebook Page to the Students</i>	15/10/2015	14/10/2015	16/10/2015
<i>Preparation of Interview Questions for Graduates</i>	3-17/12/2015	2-16/12/2015	4-18/12/2015
<i>Lectures on Interview/Observation and Definition of Study Groups</i>	24/12/2015	23/12/2015	25/12/2015
<i>Conducting Interviews with Graduates and Making Workplace Observations</i>	24-31/12/2015	23-30/12/2015	25/12/2015
<i>Preparation and Presentation of Posters</i>	Preparatory work: 31/12/2015-7/1/2016 Presentation: 13/1/2016	Preparatory work: 30/12/2015-6/1/2016 Presentation: 13/1/2016	Preparatory work: 4-8/1/2016 Presentation: 13/1/2016

Introduction of Facebook Page to the Students: Facebook page of graduates of SFH, which was established in 2013, had 400 active members. This number increased year by year with the participation of new members. “Interview with Graduates” activity began with introduction of the Facebook setting to the students and asking students for applying to the page. Students were added to the “We are graduating, help!” group page and encouraged to communicate with graduates (Figure 6). This activity started on the week, dated 14-16/10/2015, simultaneously with the “Internship Story” activity. Students were allowed to examine Facebook setting until the beginning of the activity on 2-18/12/2015. In this process, for providing active use of Facebook page, homeworks were given through this page, feedback for homeworks and courses were given by using the Facebook page, and researchers asked questions to the students about courses through the page. It was observed that the students interested in the Facebook setting and shared their questions and time-to-time homeworks through the page. Also, the Facebook page was sometimes used by the students for their internal communication.

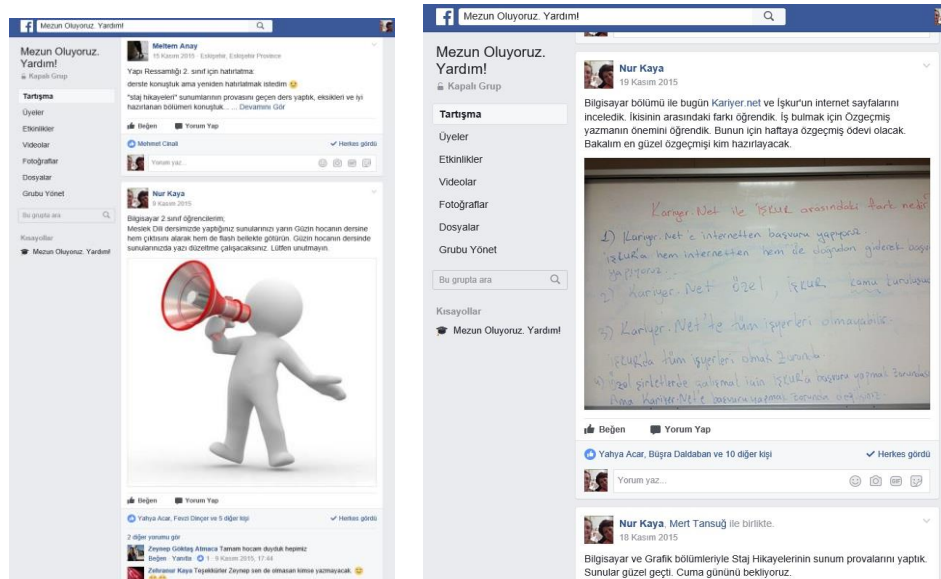


Figure 6. Facebook Stting

Preparation of Interview Questions for Graduates: The activity was started with the homeworks, given in Professional Language courses on the date 2-4/12/2015. Students were asked to prepare questions for their interviews, to ask prepared questions to the graduates through Facebook setting, and to write their process on their diaries. The prepared questions coming from the students for interviews were examined in the courses, dated 16-18/12/2015. All the material was shared in the classes and discussed with students, considering if there was any need for change in questions, or not (Figure 7).



Figure 7. Architectural Drafting Course (16/12/2015)

At the end of the week's classes, students were informed about the next week's duties that they will work in groups, a selected graduate is assigned them for the interview, and they will conduct their interviews by visiting the graduate in his/her workplace. The questions, which prepared by the students individually, were unified, after class discussion and students were asked to reorganize the questions in the light of class discussions. Prepared questions were examined and question list of each program, involving questions of the students and the questions, added as critical by the researchers, which were based on their evaluation meeting decisions, were decided in Professional Language and Language Arts courses of the week, dated 21-25/12/2015. Some of the interview questions were as follows; "What is your job?", "How do you find your job?", "Are you satisfied with your job?", "Is there any other topic that you want to learn in your education process?", "What are the changes in your life, when you started to work?", "Do you have any problems related with your hearing impairment in workplaces?", "Can you explain it?", "Is it difficult to find a job as a graphic designer?", "Can you give any example?", "Is it difficult for you to communicate with your colleagues, in your workplace?", "Do you have any suggestions for us about where can we apply after our graduation?" and "Is the the knowledge you gained in the school help you in your workplace?".

Lectures on Interview/Observation and Definition of Study Groups: In the focused courses of 21-25/12/2015 week, study groups of students and the graduates, with whom the student groups make their interviews were decided. The student groups were defined in relation to their preferences. The graduates were decided, in relation to both the suggestions of the students and based on the information coming from pre-investigation of researchers about the relevancy of the graduates. Students asked to begin their interview process with taking appointment and after the interviews, they asked to present the interview in written format (Figure 8).

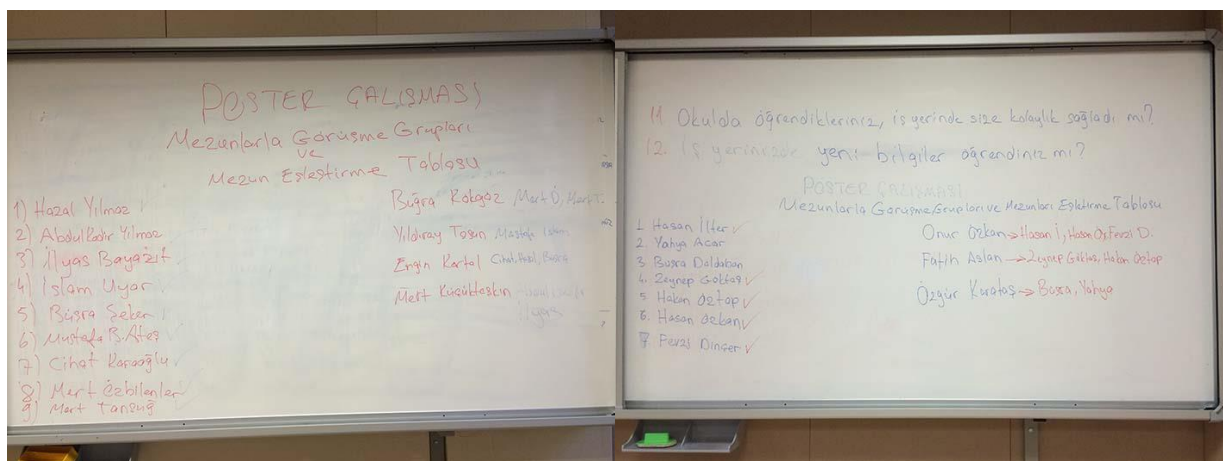


Figure 8. The Pairs of Groups and Garduates

On the same week, the lectures on interview and observation techniques were given in Language Arts courses. With the decision taken in Planning and Evaluation Meeting, dated 21/10/2015, an “Observation Document” was prepared for students. The reliability study of the document was done by the field expert. In week’s classes, “Observation Document,” which was prepared by the researchers, was introduced to the students and the researcher filled the document being as a model for students. Later, students made exemplary observations in classes. As following study, students were asked to draw a draft plan for SfH cafeteria, in addition to their observation task. For this task, researchers helped students for their observations and drawings (Figure 9). Draft plan drawings were asked from the students in order to recognize furnitures, equipments, placements of them in the space and also to recognize who were the employees. This goal was shared with the students.



Figure 9. The Observation Study in SFH Canteen

Since the students of Graphic Arts and Architectural Drafting had the issue of drawing in their education, they did not need additional information, and it was expected to apply their previous knowledge to the task. On the other hand, the students of Computer Operator Training were given information about the issue of draft plan drawing and exemplary draft plans were drawn by the researchers as being models for the students.

Conducting Interviews with Graduates and Making Workplace Observations: The students conducted their interviews with selected graduates and made their observations on the dates between 23 and 31 December 2015. Some of the students that used new year vacation conducted their interviews with the graduates, who lived in their cities. For the interviews and observations, which was taken place in other cities, and which was not completed in this period, Skype program used as an alternative communication tool with the graduates. Interviews were transformed to texts by the students, examined in Professional Language and Language Arts courses, reorganization and correction studies were done with the students. These studies were done both inclass periods and with students individually in relation to the study plans, prepared with students. In these studies, students were asked to complete unfinished parts of observation documents and draft workplace plan drawings. After the finished texts were checked and approved, students were asked to transform texts into poster presentation form.

Preparation and Presentation of Posters: Interview texts, photographs, and draft workplace plan drawings were organized in poster format between the dates 31/12/2015-8/1/2016. The dimensions of a poster were defined as 50cm x150cm. The design of the posters was expected to make by the students. The students of Graphic Arts and Architectural Drafting were not need for help for poster design, since they had already some courses or took lessons for about design issues. However, it was observed that Computer Operator Training students had difficulty in designing their posters, because they did not have this kind of courses and had limited knowledge to use computer programs for designing. For a solution to the problem, support for designing the posters was taken from the students of Garphic Arts (Figure 10).



Figure 10. Poster Design Study of Computer Operator Training Students with Graphic Arts Students

It was observed that Graphic Arts students were participated to this cooperation willingly and they worked together with their peers from a different discipline. The poster design covered the organization of texts, photographs and draft workplace plan drawings. The correction of language and visual material in posters were done in Professional Language and Language Arts courses. In addition, individual studies performed with the students. Prepared posters presented to all the students and instructors of the school, in the first floor foyer of SfH, on the date 13/01/2016 (Figure 11). During the presentation process, students were asked to explain their posters. This presentation was evaluated as final exam grade in Professional Language and Language Arts courses. It is observed that some of the graduates, interviewed by students, participated to the poster presentation exhibition.

Figure 11. A Poster Sample and Exhibition



CONCLUSIONS

At the end of the activity process, it was determined that the students developed an awareness about real workplaces and about what kind of works to be done in their future jobs and also they established communication with their future colleagues and other employees in workplaces, familiarized job finding strategies, understood the problems faced in workplaces, how the learned lessons were applied to the practice, and that the students made plans for after graduation.

In the “Interview with Graduates” activity process, through making observations in the workplaces of graduates, it was observed that students were examined the equipments, computer hardware and softwares, which were used in workplaces, and works, studied in workplaces and compared these physical situations and works to their school studies, equipment, and knowledge, they learned the value of their vocational knowledge, learned in the school, and application field of this knowledge. In addition, it was observed that the graduates helped the students about how to search and find a job by sharing their experiences. Despite these advances in the career awareness issues of hearing-impaired students, there is still need for enriching and accelerating the activities.

SfH already had Professional Language and Language Arts courses in its programs and their use in the research helped to accelerate the reserach process. However, if these types of courses do not exist in vocational programs, it is necessary to determine which courses will be used for these acticities to recognize workplaces, or new courses should be planned for that puspuse. Getting support from the school management is also an important factor to place these activities of career awareness in course contents. In the present research, the approval of the director of SfH and that one of the researchers being in school management facilitated the research process.

The research was carried out with the senior students of three programs of SfH. The repetation of the research, covering all programs of the SfH is planned for 2017-2018 school year. In the research, activities to improve career awareness of hearing-impaired students of SfH will continue through enriching and improving. In the process of research, the contents of all Professional Language and Language Arts courses were improved with new contents involving career awareness activities and organized for 2017-2018 school year, and approved by the administration board of SfH and Anadolu University Rectorate for adding new course catalogue of the university. In terms of sustainability of the study, it is important to update related course contents with the knowledge gained from the research. However, it is also important to expand the scope towards field courses with eriching the activities.

It is observed that the graduates, interviewed by the students, were quite pleased from the “Interview with Graduates” activity and eager to share their experiences and opinions with the students. I addition, they stated that they were very pleased for calling by the SfH and making them to participate to educational process. Establishment of this relation between graduates and students is important to the formation of school culture and tradition. The “Interview with Graduates” activity, which was placed in the research activity, is planning to continue with the udates, considering content, time period, and application processes.

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Opinions Of Education Administrators Regarding The Impact Of Their Leadership Features On The Mobbing And Organisational Commitment Of Teachers

Togay ULUÖZ

togay.uluo@neu.edu.tr

Near East University

Department of Physical Education and Sports

Mersin, Turkey

Emete YAĞCI

emete.yagci@neu.edu.tr

Near East University

Department of Physical Education and Sports

Mersin, Turkey

Ali AKTEPEBAŞI

ali.aktepebasi@neu.edu.tr

Near East University

Department of Physical Education and Sports

Mersin, Turkey

Figen Yaman LESİNGER

figenyaman.lesinger@neu.edu.tr

Near East University

Department of Physical Education and Sports

Mersin, Turkey

Abstract

This research was conducted with the qualitative research pattern and in the screening model in order to identify the leadership styles of education administrators and the organisational commitment and mobbing exposed by the teachers. From the qualitative research techniques, the semi-structured interview and document analysis were used for the data collection.

The generated data indicated that the leadership styles of school administrators have major impact on the organisational commitment and mobbing experience levels of teachers. The results of the research have major significance since they are considered to have important impact on the identification of negative factors on the organisational commitments of teachers and enhancement of the organisational commitments.

In consideration with the research results, the shortcomings in the knowledge about the leadership and leadership styles in addition to the low organisational commitment should be taken into great consideration. The recommendations developed following the results are considered to be beneficial for the prevention of future negative behaviours between the school administrators and teachers and the associated negative circumstances.

Keywords : Education administrators, Leadership Features , Mobbing, Organisational Commitment

INTRODUCTION

According to the studies, people, who work in a positive organisation environment, have higher job satisfaction and are more efficient (Mulki, Jaramillo and Locander, 2009; Vardi, 2001), have higher motivation, efficiency, organisational behaviours and organisational commitments (Cullen, Parboteeah and Victor, 2003; Schwepker, 2001), have more ethical behaviours (Bartels, Deshpande, Fritzsche, 2000; George and Joseph, 2000; Harrick, Martell and Strickland, 1998), have less negative behaviours within the organisation (Peterson, 2002), create more quality organisation output (Weeks and Nantel, 2004), show less role conflicts and disturbance and higher trust towards the administrator (Mulki, Jaramillo and Locander, 2008). Additionally, teachers show more commitment to the school in a positive and healthy school environment (Turan, 2002). Pursuant to the studies on

the education organisations, teachers are exposed to heavy work burdens causing particularly stress and tension, experience excessive stress and exhaustion (Boyle, Borg, Falzon and Baglioni, 1995; Capel, 1991; Cemaloğlu, 2007b) and are faced with more mobbing behaviours when compared with the other professions (Cemaloglu, 2007b; Ertürk, 2005; Hoel, Faragher and Cooper, 2004; Hubert and Veldhoven, 2001).

The individuals experiencing mobbing in the organisations have less job satisfaction and self-confidence, feel shame and guilt as well as helplessness and despair, have lower self-respect, are isolated in the organisation, experience deep hopelessness, are criticized in an unfair way for their efforts, lose their motivation due to unfairness and distance from the realisation of organisational objectives due to their concern and depression (Blase and Blase, 2002; Hoosen and Callaghan, 2004; Lewis, 2004; Leymann, 1990; Matthiesen, 2006; Tmaz, 2006). O'Driscoll and Beehr (1994) indicated that the reason for the work and work environment related problems of employees are related with the behaviours of administrators. Einarsen (1999) and Vartia (1996) noted that the reason of negative behaviours at the work place is the weak administration and lack of leadership skills in the administrators. Bulutlar and Öz (2009) and Peterson (2002) emphasized that an ethical organisational environment diminish the frequency of mobbing behaviours that have an impact on the functioning of organisation.

Although the researchers indicate that the leadership behaviours of school administrators and organisational trust have an impact on mobbing; the number of studies conducted in this domain is limited. Einarsen (1999) underlined that more studies must be performed to understand the reasons and nature of mobbing. Therefore, this research aims to study the opinions regarding the impact of leadership features of teachers on the mobbing and organisational commitment.

Considering the literature, the leadership styles of school administrators and mobbing and organisational commitment have been evaluated as variables that affect and be affected from each other abroad; however, many questions regarding this issue have been left unanswered. This study assessed the relationship between the leadership styles of school administrators and mobbing levels of teachers, and the impact of decrease or increase in mobbing level on the organisational commitment (Yağcı, Uluöz, 2017).

METHOD

This section includes the model of research, working group, data collection and explanations on the data analysis.

THE MODEL OF THE RESEARCH

In the qualitative research phase, this study was conducted in the qualitative research pattern and screening model to deliver the impact of leadership features of education administrators on the effect of mobbing and organisational commitment among teachers in addition to using qualitative research techniques suitable to data collection and semi-structured interview and document analysis. The content analysis was performed for the analysis and interpretation of qualitative data generated from the participants.

The interview technique can be classified as structured, semi-structured and non-structured interviews (Tanrıöğen, 2011). The questions for the semi-structured interview were prepared before and the related questions were used in the research accordingly as how it is in the nature of semi-structured interview. However, during the data collection phase, the researcher may add new questions at the time of interview (Karasar, 2010). This method is not as rigid as the structured interviews and not as flexible as the non-structured interviews. As such flexibility is provided to the researcher, the semi-structured interview technique was used for this study.

WORKING GROUP

This study is limited with the secondary schools (total number of 13) under the Ministry of National Education within the boundaries of Nicosia, the central district of the Turkish Republic of Northern Cyprus for the academic year of 2014-2015. The private and vocational schools under the general secondary education were not included in this study.

Among the secondary school within the working group, the total 8 schools were selected as the most crowded and central schools. This study was planned to be conducted with all secondary education school principals in the beginning but in the end 8 school principals were taken under the study and the study was conducted accordingly as some school principals did not accept the interview.

DATA COLLECTION TOOL

As the data collection tool for the qualitative research, the questions in the semi-structured interview form prepared with the school administrators were asked and the personal information form was used. In order to show the opinions regarding the impact of leadership features of education administrators on the mobbing and organisational commitments among the teachers, the semi-structured interview technique was used for the data collection tool and a number of 6 open-ended questions were asked to identify the opinions of school administrators

In the qualitative research approach, the in-depth interview (face-to face), direct observation and document analysis techniques are generally used (Legard, Keegan and Ward, 2003). The data of research were generated through “face-to-face technique”, which is frequently preferred in the qualitative research approach enabling to understand the perspectives of participants about the subject that can not be observed with other data collection tools. The in-depth or face-to-face interviews have some advantages as they have high answer rate, they provide flexibility in the order of questions and opportunity to control on the environment as well as in-depth information related with the subject matter (Yıldırım and Şimşek, 2011). This method is a foundation for the reveal of various dimensions like reasons, feelings, ideas and beliefs, which are the basis for the answers (Legard, Keegan and Ward, 2003).

Patton (Quot: Marshall and Rossman, 1999) defined three types of interviews as conversation style interview, standard open-ended interview and interview form approach. Semi-structured interview method, which is defined as the interview form approach, was used in this research. This method was preferred as it gives the flexibility to the researcher in the preparation and order of questions as well as provides the facilitation to intervene when necessary. In such interview, the researcher has a kind of questionnaire comprised of questions or topics in relation with the research subject. Hence, the researcher can ask such questions to the participants at any times and may create alternative questions that are not in the questionnaire depending on the answers given and may use explanatory questions that would help the participant to express the opinions in a more elaborated way.

DATA COLLECTION PROCESS

During the data collection phase, the school principals of secondary education in Nicosia, TRNC were interviewed. The participants were informed in advanced about the aim of study and interview method, which was chosen as the data collection method. Appointments were arranged with the voluntary participants and the data were collected during the fall semester of 2014-2015 academic year. Upon taking the required permits from the Ministry of Education, the data collection phase was launched.

During the face-to-face interviews with the administrators, the complete interview was recorded with a voice recorder in order not to lose any data in accordance with the voluntarism principle; the confidentiality had high significance. Each interview was an average of 20 min. long. In addition to using voice recorders during the interviews, written notes were also taken in order to eliminate any confusion during the interview as well as maintain the interview in a systematic way. At the end of each interview, a certain time was allocated to thank the participants for their contributions.

DATA ANALYSIS

Open-ended questions are asked during the semi-structured interviews. The interviewees are expected to give elaborated answers. Each answer is categorised and inserted into the tables. Following the first categorisation, the researcher reviews the data and main themes as well as categories are determined. The field related with such themes and categories are taken into consideration and the categories with similar patterns were matched and the categories with variances were put different categories and coded. The administrators were indicated next to the related answer. The sentences form the categories were written in the statement part as an example. The individual interviews were performed when the administrators were available. The interviews were conducted in a place suitable for face-to-face discussion. The administrators were observed to give answers without any problem. Some answers of administrators were short. The researcher asked the same questions again and aimed to lead the administrators into thinking more on the questions.

The data generated for the content analysis were entered into computer. Then the raw data texts were groups on the basis of questions in the interview form. The content analyses were conducted on such grouped texts. At the reporting phase of research, the codes such as GR1, GR2, GR3; GÖ1, GÖ2, G3... were used for the participants and direct quotations were used to improve the reliability.

At the end of data coding phase, the main themes, main categories and sub-categories were determined as they are the findings of this study. Additionally, the variation, one of the most used strategies of qualitative research methods, was performed to test the validity and reliability of data analysis.

FINDINGS

In this section, the data collected through data collection tools are analysed and the results are interpreted accordingly. Each table is interpreted individually.

I. Dimension: *Opinions of administrators regarding whether their leadership nature have an impact on the organisational commitments of teachers.*

All of the school administrators that participated to the research had indicated that the leadership natures of administrators have an impact on the organisational commitments of teachers. "...We as leaders have a common aim in accordance with the common objectives; to raise our students towards the needs of community, in other words our aim in raising them is common. I believe that using the school resources in the most compatible way, making democratic decisions, ensuring that the perception of good decisions were made are all affecting the organisational structure. You have to be democratic and influence the majority. As I indicated above, the principals or administrators change depending on the place and time. Sad to say, it is difficult to be an administrator at state departments and schools." (G:R(1)). According to another administrator; "...The approach-attitude- of leaders, who is the school principal in the problem resolution phase have either negative or positive impact on the organisational commitment. If the leader included the teachers into the decision-making process then it is difficult to interrupt the works as mutual consultation was performed at the time of decision-making. The educational activities might be interrupted if teachers do not participate to the decision-making process and are constantly instructed about what to be done since they are not consulted; hence no contribution is made. A leader must be democratic, transformational and fair as well as objective in the activity assessment" (G:R(5)). According to another administrator; "...The commitment of principals for their school is one of the factors affecting the leadership. Of course, I personally think that the school principals have to have two qualifications, one of which is to be a good administrator in order to comply with all the laws and regulations. Moreover a principal should be a good leader too. A leader sets a vision, shows a target and motivates. The exact Turkish word might be 'to trigger' or 'the intuitive'. You might motivate wit external factors with nice words or some financial contributions but the most important thing is to make that person act with instinctive behaviours. I think that this is what is needed, not only at schools but the leaders always show targets and determine the vision. All of such become reality with leadership and administrators with leadership features"(G:R(8)). Other administrator indicated that "...First of all a school principal, which we call leader, is a component that strengthens a school in terms of moral and physical factors. School principle is the backbone. If a principal has knowledge and show love and respect then regardless the vicious nature of teachers, they are influenced with that person and then the school would provide a successful education"(G:R(7)).

II. Dimension: *"Opinions of administrators regarding their methods towards the change in the mobbing exposure of teachers.*

The administrators noted that in their methods used for the variation of mobbing exposure among teachers, they do not behave in a way that would affect the mobbing among teachers and they create a democratic environment in general. "...A leader must motivate the teacher, must set a vision and mission for himself; he must be sharing and must identify an effective strategy together with the stakeholders in a team-work" (G:R(3)) and (G:R(2)) "...First of all, he should set a vision and become a leader, who questions whether everything is that so within that vision. He should not only work with the ones, who are close to him but also he should try to find ways to bring the distanced ones together. Schools are a slight reflection of school. If there is a pioneering leader at a school, the individuals, even in an environment where everything is going wrong, would not be problem oriented

but would look for solutions. In a problematic environment, a lot of skill and ability is required to lead people for solutions. "...Mobbing is not something that I approve; it is not even my style. As you know, being a leader and administrator are two different things. In my perspective, a good leader can lead communities without any pressure. Otherwise, forcing people for a work through using a position as well as mobbing is a very offending act. It is not natural" (G:R(6)). Another administrator indicated, "...In general, the structure of society is changing. There is violence and arguments, which all are reflected on the education. And then you are faced with mobbing. For a school leader, it is very difficult to activate the administration discipline regulation. Everything must be transparent and open"(G:R(7)). The other administrator stated, "...Whether private or public, the national education regulation and legislations and their amendments discourage us every year and we do not hear good things from our teachers when we give them the news about the wages. In private sector, the teachers consider mobbing in terms of their wages. Then they are discouraged and leave work. It is not easy to keep a quality teacher in private sector or finding another good teacher for the one leaving the job. The acceptance of a new teacher and adaptation are not also easy too"(G:R(1)).

III. Dimension: *"Opinions of administrators regarding their methodology for the improvement of organisational commitments among teachers"*

Administrators indicated a number of opinions for the improvement of organisational commitments among teachers. "...I try to be democratic, fair and objective. I think that I have good relations with the teachers. I aim not to do mobbing"(G:R(5)). Another administrator stated; "...Trust and commitment, the commitment towards our organisation, ownership. Team work and majority concept, not working as an individual but being awarded like a team (G:R(1)). "...I assess every teacher with the complete year performance and most importantly, we build our communication, I celebrate them in the meetings and encourage them. We are in good relations with out parents association"(G:R(3)). "...One of the main characteristics of education is to improve the organisational commitment. Therefore, we always undertake the projects together with the teachers whenever we do group work in our educational activities. The more teachers participate to the program development and improvement, the stronger our team spirit and communication become"(G:R(6)). According to another school administrator; "...we have to be very careful and work together in the implementation of programs and methods. Teachers must be included in all social and academic activities. Otherwise, the teacher would be discouraged and the education quality gets worse.

RESULTS AND RECOMMENDATIONS

This chapter discusses the findings and results based on the interpretation and the recommendations in relation with the results accordingly.

The common view of all administrators under the scope of this study is that the leadership nature of administrators has an impact on the organisational commitments of teachers. Particularly, the participation of teachers ensured by a democratic leader would increase the organisational commitment. As the organisational commitment has various areas that it has an impact, it also influences the organisational commitment. As a result of studies conducted on this matter, Luthans (1992) noted that the personal factors (investment, years of experience), work factors (position, nature of position, limits, controversies and inconsistencies) and factors within and outside the organisation have an impact on the organisational commitment; and he also stated the existence of leadership model in the inter-organisation elements and professional options in the elements that are not in the organisation in addition to the nature of person (positive – negative sentimentality; a point of supervision where a person can supervise oneself).

While the administrator is a person that implements the existing structures and appropriate methods to reach the organisational objectives; the leader is the person that can influence people rather than using the traditional methods used by an administrator such as ordering. Hence, the leadership is effective between the relations among people and influence them while ensuring the use of ways required to reach the identified objectives (Celep, 2004). Elkins (1980) had also made a similar definition, as the leader is an influencing person on the environment in reaching the organisational objectives. They use their existing authorities and affect their surroundings. The relevant authority is related with influencing the acts of others and refers to the authority acquired when reached to the resources that are not available in people or groups yet required. Some of the

definitions of organisational commitment are; the perception of an individual together with the organisation or workplace (Leong, Furnham and Cooper, 1996); the sense of organisation and unity given by the organisation to an individual, partners or employees (Lambert et.al., 2010).

The administrators mainly indicated that the behaviours that might have a negative impact on the mobbing levels of teachers do not generally happen in the school with democratic environment and in compliance with the legislation; the mobbing is not generally observed in the state schools and the mobbing behaviours, which can be rarely observed in the private schools, are mainly caused due to the negative impacts of wage policies. The concept of mobbing exists since the beginning of work life but yet there is no consensus regarding its definition. Additionally, the people that are exposed to mobbing at their workplaces consider such acts as routine conflicts or daily problems. Such perceptions mislead the researches and make it difficult diagnose (Ertürk, 2005). Moreover; Tınaz (2006) discusses that the lack of knowledge about mobbing in Turkey is related with the fact that people do not know what they encounter and the most important element in fighting with mobbing is based on the consideration of the problems by the victim as well as the employer, colleagues and whole community.

The studies on the mobbing indicate that out of the total mobbing acts, the rate of USA is 81% (Vandekerckhove and Commers 2003), and the rates in Germany, Austria and England are between 70% and 80%; and the people, who experience mobbing from their seniors affect more than others (Einarsen, 1999). Pursuant to the various studies conducted in Turkey (Ertürk, 2005; Cemaloğlu, 2007a, Cemaloğlu, 2007b; Cemaloğlu and Ertürk 2007; Cemaloğlu and Ertürk, 2008; Kılınç, 2010; Gündüz and Yılmaz, 2008; Sağlam Çiçek, 2008; Dick and Wagner, 2001), teachers are exposed to a high level of mobbing and more than half of mobbing acts are towards the teachers working under the school administrators. The study conducted by Hubert and Veldhoven (2001) noted that mobbing acts are widely experienced in the education institutions and 37,3% of such acts is among the employees. Upon the interviews with the people exposed to mobbing, some researchers noted that such people are exceptional as they have high emotional intelligence; they assess their own behaviours and they correct themselves when they see that they are wrong. They are generally rational people with principles, who can question and are not be led by others but they lead themselves (Davenport et.al., 2003). The studies stated that the mobbing at the workplace have a prominent impact on the organisational environment (Araújo et.al., 2010). Researchers like Agervold and Mikkelsen (2004) underline that the adopted leadership style is one of the reasons of mobbing. Similarly Cemaloğlu (2007b) noted that mobbing might be experienced in every organisation, that there are various factors in the performance of mobbing where the leadership styles of organisation administrator are one of the significant variables.

The researched underlined that mobbing is observed in the big and bureaucratic organisations and the mobbing performers are more widely seen. Moreover, the strict and weak authority style and laissez-faire style leadership are related with the mobbing (Salin, 2003).

In order to improve the organisational commitments of teachers, the administrators mainly use team work, participation, awarding, reconciliation methods, working with joint decisions in the parents association activities, democratic management style, meeting the technological needs of school in accordance with the demands of teachers, using feudal/informal relations in relations in addition to formal relations and collective decision-making and application in social and academic activities as the effective methods. The scope and characteristics are the factors that are organisational based and have an impact on the organisation. The quality and significance of activity for the society influence the commitment level. If the quality and significance are high then the organisational commitment will increase. The administrative style is also one of the factors that affect the establishment of commitment towards the objectives and values or organisation. When the senior level management gives importance to the organisational culture and values, the productivity and progressiveness increase (Meyer and Allen, 1991). The negative attitudes that would be performed by the management towards the employees such as the authoritarian statements, dominance would cause negative outcomes as decrease in productivity and not to be creative and would affect the commitment of individual accordingly. The available information regarding the general functioning of organisation is one of the most significant indicators for the functioning of organisation (Goffee and Gareth, 2000). The indicator, which is also called as the organisational

culture, has an impact on the activities of employees and the general organisational functioning (Chow et.al., 2006).

The accomplishment in reaching the objectives and maintaining the activities in an efficient way for the education system and school can be realized when the school administrator and teachers believe and accept the objectives and values determined by the school and education system (Celep, 2000).

In order to reach the general conclusion of research, the aim was to identify the opinions of education administrators concerning the leadership characteristics on the impact of mobbing and organisational commitment. Therefore, the leadership characteristics and organisational structure are among the most important factors affecting the commitment. Within this framework, the size and structure of organisation, terms on the working hours and working hours, opportunities for the specialisation in the profession, leadership attitude, organisation status, image of organisation, total quality management activities, promotion opportunities within the organisation, wage rates, wage arrangements, rights granted other than the wage, rewarding arrangements, performance system and participation to management process are all organisation based factors (Byington and Johnston, 1991; Sağlam; Koç and Yavuz, 2007).

RECOMMENDATIONS

The recommendations towards the researchers and implementing parties are as follows:

1. School administrators and school staff (teacher, secretary and other staff) should be informed about the leadership and management process. For such purpose, the in-service trainings should be organised, practice based activities should be performed and if possible, the participation to such courses should be mandatory.
2. The active participation of teacher to all kinds of activities at school should be ensured. An improvement in the organisational commitment might be realized as a result of such participation. Hence, in any situation requiring “decision-making” process, the teachers as well as the administrators should actively be in this process.
3. The supervision mechanism should be developed at school. Letters and questionnaires can be used in regular intervals to obtain information about the existing situation and the teachers should be included to the management process to develop participatory management approach.
4. When the school is considered as an organisation, the administrators, teachers and other school staff should be ensured to understand that it is not about creating an interest for the school. Therefore, the sub-dimensions of organisational commitment “adaptation, identification and internalisation” would be developed in a balanced and equal way in the school.
5. The time spent by the teachers at school should be increased, which would improve the organisational commitment. For this purpose, the laws might be implemented actively.
6. The social sharing might be improved in the school through the positive communication between the school administrators and teachers, which can prevent mobbing.
7. The organisational commitment can be improved through the positive atmosphere at the school, which can prevent the formation of negative behaviour.
8. The individuals, who think that they were exposed to mobbing, should explicitly express this. Hence, the performers of such act can be assessed accordingly.
9. Legal regulations concerning mobbing should be in place. The school staff (administrators – teacher – other personnel) should be informed about mobbing. Any teacher or staff that has knowledge about mobbing should define such act in case of any exposure.

10. The inspectors of the Ministry of National Education might be consulted in the studies of this matter and their views might contribute to the study accordingly.

11. The performance of mobbing level on the administrators as applied in this study might contribute to this research.

12. This research was conducted with the administrators of public schools. The performance of a similar study at private schools might be recommended. The public and private schools can then be compared.

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Opportunities of Interactive Teaching in the Implementation of Project Method

I.V. Kovalev

*Siberian State University of Science and Technology,
Russia*

Y.Y. Loginov

*Siberian State University of Science and Technology,
Russia
loginov@sibsau.ru*

ABSTRACT

The opportunities of interactive learning in the conditions of implementing the method of projects in aerospace university were studied. For this purpose, the training process was implemented technology of project-oriented training of students in the form of a unique project for the development and creation of a series of student scientific-educational small satellites. Interactive learning in a project-oriented approach allows you to solve simultaneously a several problems, main of which is the achievement of learning objectives, development of communicative skills and development of research competencies. Evaluation of the effectiveness of the system of research competencies formation using a set of criteria-oriented test tasks showed a positive dynamics in all indicators in the structure of research skills. The use of interactive technologies in the organization of training opens the opportunity to consider the issues of individual educational strategies defining the direction vector and content of education of the future engineers, to improve the quality of their training and creates opportunities for self-realization and life self-fulfillment.

INTRODUCTION

In the modern world the issue of training of highly qualified personnel through the use of new educational technologies and innovation is important (Watkins, 2005; Gulakova & Kharchenko, 2013). Recently, methods of interactive learning have been widely developed. Interactive learning is learning with well-organized feedback of subjects and objects of learning, with a two-way exchange of information between them. The interactive model aims to organize the comfortable learning conditions, in which all trainees actively interact with each other. Compared to traditional forms of education, interactive learning is changing the interaction between the teacher and the learner: the activity of the teacher gives way to the activity of the students, and the teacher's task is to create conditions for their initiatives. It is interactive methods of teaching that form the way of joint activity of the learners, in which the participants of the educational process interact with each other, exchange information, jointly solve problems, simulate situations, evaluate each other's actions and their own behaviour and immersed in a real atmosphere of cooperation to resolve the problems. Interactive methods of teaching provide opportunities for improving the quality of training specialists, for their self-realization and life self-fulfillment in various types of educational activities (Loginova, 2017). Interactive training allows you to form the active-cognitive and intellectual activity of students, increase the motivation to study the subject, develop in various forms the communicative competencies of students (Loginova, 2011; Yakovleva & Yakovlev, 2014).

At the same time, the real employers consider the knowledge, skills and practical experience of graduates in the context of the ability and willingness to effectively apply them in practice, meet the quality standards of the industry and regional markets. One way to solve this problem is to implement a practice-oriented approach. This approach in vocational training is aimed, first, at bringing the educational organization closer to the needs of practice and life. Secondly, it allows creating conditions for the purposeful formation of the competitiveness of future workers and employees. Practical-oriented training is a type of training, the primary goal of which is to form the professional competencies of practical work required by employers today, as well as to form an understanding of where, how and for what the competences obtained are applied in practice. It is especially important to organize the learning process so that the educational result is manifested in the formation of students' own internal motivation for learning, thinking, imagining, creative abilities, sustainable cognitive interest. It is necessary to form a system of vital, practically in-demand knowledge, skills and practical

experience that will allow the future graduates to easily adapt to life and treat it actively and creatively. This can be achieved by using interactive teaching methods in a practice-oriented approach.

One of the leading places in the practice-oriented teaching is a method of projects. The project-based method is the development of cognitive skills, abilities independently to use their knowledge and skills to navigate in the information space. Project-based learning requires the integration of knowledge, skills to apply knowledge from various fields of science and technology, technology and creative areas (Polat, 2005).

In our opinion, the use of interactive methods in practice-oriented learning is important. In this regard, the purpose of this work was to study the opportunities of interactive learning in the implementation of the project method.

RESULTS AND DISCUSSION

The need to introduce interactive learning into the practice of training at the aerospace university was due to two trends. The first follows from the general orientation of the development of education, its orientation is not so much to obtain specific knowledge, but rather to develop the skills and abilities of cognitive activity, the ability to learn, the ability to process huge amounts of information. The second follows from the development of the requirements for the qualities of the personality of the graduate himself, who must also possess the ability of optimal behavior in various situations in the professional sphere (Loginova, 2017). The logic of the educational process in interactive learning changes significantly and moves from the formation of new experience to its theoretical comprehension through application. That is why the interactive activity of students ensures the growth of knowledge, skills, methods of activity and communication, which together determines the quality of training and the disclosure of new opportunities for future graduates, including the opportunities for their life self-fulfillment.

In this regards, the changes were made in the educational process that ensure the implementation of the goals set. For this purpose, the training process was implemented technology of project-oriented training of students in the form of a unique project for the development and creation of a series of student scientific-educational small satellites (Kovalev, Loginov & Zelenkov, 2015). The integrated system of training engineers for the aerospace industry using innovative technology project-based learning student is actively developing in the Siberian State Aerospace University for several years in cooperation with an industrial partner of JSC "Information Satellite Systems". Students from the third year take part in all stages of satellite production from the development of project documentation to the control satellite in orbit. Thus, the students receive the full range of necessary services within the walls of university, starting with assistance in the preparation of an innovative project and ending with the sale of finished products.

The main requirement of educational programs in the field of "Engineering, technology and technical sciences" becomes a practice-oriented as the ability to form a certain set of professional and over professional competencies that allow the graduate to quickly join the production chain. In the undergraduate program, the focus is on the implementation of applied engineering competencies and basic soft skills, work in team engineering projects in competition formats and the introduction of the mandatory end-to-end module "Project Activities". Master programs focus on specialized engineering competence and soft skills in project management, end-to-end qualifying work in the form of a real engineering project. Engineering master programs aimed at training engineering teams in order business and the implementation of real engineering projects.

Here are the basic requirements for successful learning in the mode of interactive technologies:

- Positive interdependence - the team members should understand that general learning activities benefit everyone;
- Direct interaction - the members of the group must be in close contact with each other;
- Individual responsibility - each participant must master the proposed material, and everyone is responsible for helping to others.

- Development of teamwork skills - the students should learn the skills of interpersonal relationships necessary for successful work, for example, clarifying the different aspects of the process, assigning responsibilities, scheduling assignments.

The essence of interactive learning is that the educational process is organized in such a way that practically all students are involved in the process of cognition, they have the opportunity to understand and reflect on what they know and think. The joint activity of students in the process of learning and mastering the teaching material means that each makes its own individual contribution; there is an exchange of knowledge, ideas and ways of working. Moreover, it happens in an atmosphere of goodwill and mutual support, which allows not only receiving new knowledge, but also develops the cognitive activity itself, translates it into higher forms of cooperation and collaboration.

When using interactive forms, the role of the teacher changes dramatically and ceases to be central; he only regulates the process and engages in its general organization, prepares the necessary tasks in advance and formulates questions or topics for discussion in groups, gives consultations, monitors the time and order of implementation of the planned plan. Participants turn to social experience - their own and other people, while they have to communicate with each other, jointly solve the tasks, overcome conflicts, find common points of contact and make compromises. Psychologists found that in the context of educational communication there is an increase in the accuracy of perception, the productivity of memory increases and the intellectual and emotional properties of the personality are more intensively developed, such as the stability of attention, the ability to distribute it, observation in the perception, the ability to analyze the activity of a partner, to see its motives and objectives.

One of the principles of interactive practice-oriented learning is the principle of productivity learning. According to this principle, the main guide of learning is the personal contribution of each student in the process of project training. The trainee sees the result of his work in a specific product of activity. For example, when creating a small spacecraft, the student not only gets new knowledge and experience, but also sees the result of his contribution to the product being created.

This approach can significantly improve the effectiveness of training. This is facilitated by a system for selecting the content of educational material, helping for students to assess the significance and the practical relevance of the acquired knowledge and skills. In project-based learning the students apply their existing experience, as well as a new experience on the basis of acquired competencies. This experience becomes the basis for the development of students. Thus, an ideal model of the competitive personality of the future specialist is formed.

Thus, interactive forms of education provide high motivation, strength of knowledge, creativity and imagination, communicability, active life position, team spirit, value of individuality, freedom of expression, focus on activities, mutual respect and democracy.

The technologies of interactive learning include the technology of context-competence-based learning, the technology of modular training and the technology of self-regulatory learning. The use of interactive technologies in teaching makes it possible to bring the student closer to the assimilation of the educational material, to include in the studied situation, to encourage to active actions, to experience a state of success and, accordingly, to motivate their behavior.

In the system of practice-based learning the practical experience is formed, such as the comparison, assessment of phenomena and processes, identifying cause-and-effect relationships, setting goals, and needs for further replenishment of the subject knowledge. The realization of practice-oriented learning presupposes the consideration of practice as a source of cognition, as an object of cognition with an integrated approach to the analysis of facts, as a means of cognition.

The basis of the project approach in education is a rational combination of fundamental education and vocational training. For the transition to the profile education, it is necessary to implement the principles of personality-

oriented and practice-oriented education. On the one hand, the practical-oriented education is associated with the organization of the student's educational, industrial and pre-diploma practice with the aim of immersing him in the professional environment, correlating his conception of the profession with the demands made by the real employer and realizing his own role in the work. On the other hand, it is considered the most effective to introduce professionally-oriented teaching technologies that promote the formation of students' qualities of personality, knowledge, skills and abilities that are important for the future professional activity, providing qualitative performance of the functional duties in the chosen specialty.

There are several basic fundamental directions in the research and implementation of interactive learning in the realization of the project method with elements of practice-oriented education. One of the important directions is the formation of students' practical experience and research competencies by introducing them into the professional environment in the process of project-oriented learning.

The introduction of a practice-oriented approach to the educational process is conditioned by the need to search for adequate educational technologies as a set of tools and methods for teaching and developing students that will successfully implement the effective development of the competencies declared in the standard. The obligatory element of education by the method of projects is the development of the practical experience of activity, the level of which is more accurately determined by the methods of the competence approach (Prosalova, 2013). The implementation of the project approach implies that students receive not only practical but also research and social competencies that are necessary for them for future professional activities.

One of the most important competencies is a research competence (Chervova & Yanyuk, 2007), which provides an opportunity for students with available to them the knowledge and skills to model, analyze, and transform (modify on a background of varying professional tasks) the objects of professional activities, showing the activity, the ability to make their own decisions and take responsibility for them, critically evaluate the results of their actions.

To evaluate the efficiency of the system of research abilities formation a set of criterion-oriented test tasks has been developed. We used methods of pedagogical diagnostics and testing, pedagogical observation, conversation, questionnaire, statistical processing of results of experimental work and analysis. In the experiment, was attended by 130 students of the Institute of mechanical engineering and mechatronics, consisting of three control and three experimental training groups of the third and then the fourth years. The experiment was carried out step by step monitoring of the process of formation of research competence at the end of the third and fourth years of study.

It was found that the percentage of students who meet the criteria of formation of research competence, according to experts in the control groups was 28%, while in the experimental group, the figure was 46%. Thus, the method of project-based learning allows effectively generate research competence of students of technical colleges. In Fig. 1 shows the results of the analysis of the realized capabilities of students of control and experimental groups.

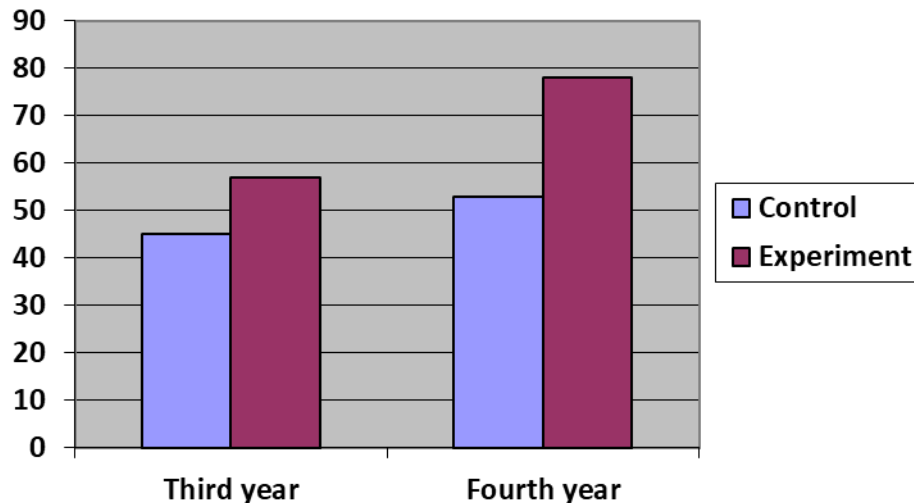


Figure 1. The percentage of realized capabilities in students of control and experimental groups at the end of the third and fourth year of study

CONCLUSION

The basis of interactive approaches to learning is the interaction of the teacher and trainees, as well as trainees among themselves. At the same time, the main conditions for the existence of an interactive are the existence of a goal, a direct and prompt exchange of information, a certain scientifically justified degree of equality in the distribution of functions performed in the process of solving the problem, a high level of knowledge and a mutual understanding. Interactive learning in a project-oriented approach allows to solve simultaneously a several problems, main of which is the achievement of learning objectives, development of communicative skills and development of research competencies. It helps to establish emotional contacts between students, provides an educational task, as it teaches to work in a team, listen to the opinion of their comrades. The use of interactive technologies in the organization of training opens the opportunity to consider the issues of individual educational strategies defining the direction vector and content of education of the future engineers, to improve the quality of their training and creates opportunities for self-realization and life self-fulfillment.

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Outside the Box: Change – Various forms of Connecting Practitioners in the Process of Intensive Kindergarten Development

Edita SLUNJSKI

Faculty of Humanities and Social Sciences, Zagreb, Croatia
eslunjsk@ffzg.hr

ABSTRACT

This article describes the characteristics of the traditional, outdated educational practice in the early education institution followed by the ways in which a good quality, modern practice can evolve, as well as the achievements accomplished in some of our institutions. These achievements, as well as the processes that lie within them, are termed *Outside the box*. It is emphasized how the quality of the education development in an early and preschool institution is more concerned with the process than the result (especially not the permanent result), that is, it presents a developmental rather than a static category. In this sense, action research is highlighted as a particularly valuable “tool” for the development of educational practices and curriculum of early education. Action research enables the creation of a community of critical, self-reflective actors who can change the practice on a much wider scale than the individual, and gradually create a new, more human, and more democratic educational policy. The ultimate consequences of action research should be viewed in a much broader context than merely as a means of improving educational practice of certain institutions, that is, as creating a *professional learning community* whose participants connect and support each other in a continuous learning and professional development by strengthening their autonomy and emancipation.

There is a description of various forms of connecting practitioners who show interest and motivation for the introduction of new forms of work in order to provide each other with professional and emotional support. The Facebook group *Outside the Box* is mentioned as a form of linking practitioners for the purpose of discussion and exchange of professional experience and expertise, to which the next subchapter is devoted. This Facebook group was created with the intention of bringing together practitioners involved in the process of intensive kindergarten development through action research so as to enable an exchange of important information, research experiences, and insights which they gained in the process of developing practices. However, a growing number of interested practitioners from many different kindergartens gradually joined this group reaching a total number of 4,200 practitioners from different Croatian cities, as well as from Serbia, Bosnia and Herzegovina, Slovenia, the USA, Finland, Norway, and Australia.

Keywords; Action research, Facebook group, Kindergarten, *Outside the box*

INTRODUCTION

Outside the box illustrates the Croatian concept of connecting theoreticians and practitioners of early education on the path to seeking new opportunities for development of early childhood education and early education curriculum. It began as an attempt by the theorists at the Faculty of Humanities and Social Studies, University of Zagreb and two hundred associates from about ten Croatian kindergartens to explore and shape the educational practice so that it would be in line with contemporary pedagogical requirements stipulated in the Croatian National Curriculum for Early and Preschool Education that entered into force in 2015. This document created the legal preconditions for the development of institutional education based on the plurality of pedagogical ideas and concepts whose backbone represents humanistic ideas and developmentally appropriate practices. However, domestic and world experiences testify to the fact that a new official document, even when it is based on very contemporary professional and scientific grounds, has very modest impact on the educational practice itself. The reason for this is that the traditional understanding of the child and childhood, as well as the traditional organization of the educational process that emerges from such an understanding, cannot easily and simply be abandoned or achieved through administrative procedures. Of the many traditionalisms that can be found in the practice of Croatian kindergartens, we will list only a few:

- practice of strict planning and management of children's activities in the educational institution
- practice of direct teaching of children with the content which they need to memorize and reproduce, and which is therefore easily measurable
- practice of parceling children's educational activities according to methodical areas and strictly defined time sequences (so-called “guided activities”)

- encouraging one-sided and one-dimensional thinking of children (supporting the expected response of children in joint activities with the preschool teachers) and
- a universal and unified educational approach (the criterion for choosing educational content is the chronological age of children rather than their personal and developmental characteristics or subjective preferences and needs).

Retaining these (and many other) traditionalism in the educational practice testifies to the fact that it is in fact not managed by “official concepts” even when it is prescribed by the state, i.e. the competent Ministry, but rather by the “personal concepts” of practitioners who are employees in the institution.

ACTION RESEARCH

With this in mind, we conducted an action participatory research in about ten kindergartens so as to familiarize ourselves with and develop the educational practice and curriculum, as well as to provide support to those practitioners who want to step “outside the box.” In this process, our scientific-research activities included several directions.

The first of these was the development of the practitioners’ awareness that the quality of life, i.e. the education of the child, determines the entire context of his or her life inside the kindergarten. The context of a child’s life within a kindergarten institution is a complex interaction of various structural and cultural dimensions of the kindergarten, since the kindergarten is a complex living system or “a living organism” (Rinaldi, 2006). It is a pulsating, changeable, and interconnected world of rapid interaction in which the order originates naturally from chaos without the necessity of supervision (Roberts and Kleiner, 2003). Because of this, its functioning, i.e. the processes that occur in it, cannot be fully predicted or controlled. On the contrary, the modern educational process, i.e. the resulting curriculum, resembles “a forecast of possibilities within an arena of opportunities” (Rinaldi, according to Male, 2012). It resembles a journey to new and unknown places that change the child’s experience (Kalantzis et al, 2003). Such an understanding of the educational process is also the foundation of the development of an open development curriculum (Edwards et al., 1998, Slunjski, 2011). In that sense, the first direction of our “*outside the box*” journey was to develop the practitioners’ awareness about the unpredictability of the educational process and to provide support to the development of an open development curriculum.

The second direction involved abandoning the divisions of the educational process into activities aimed at stimulating specific aspects of child development (physical, emotional, social, intellectual, moral, creative, etc.) through separate activities. Instead, it was attempted to help the practitioners to create a wholesome understanding of the processes of nurturing, educating, and teaching children throughout every segment of the educational process. Also, efforts were made to empower them to abandon the idea of partitioning the process of teaching children into areas that, when it comes to school, belonged to certain subjects (Croatian, Mathematics, Science, etc.). This direction of work with practitioners was based on the inauguration of contemporary understanding of children’s learning (Petrović-Sočo, 2007; Tarini, 2008; White, 2008; Miljak, 2009), which emphasizes that the quality of children’s learning corresponds to the quality of their everyday life in the kindergarten, i.e. that it is not limited to parceled-out and segmented teaching of children according to certain contents. At the same time, these concepts were the foundation for the development of an integrated curriculum that takes into account all areas of the child’s development in a uniform manner, which would fit the nature of the child and his or her learning (Bredekamp, 1996). In that sense, “*outside the box*” refers to the development of a holistic understanding of the educational process as the basis for designing a curriculum that has integrated characteristics.

The third direction of our activity referred to abandoning traditional education that is characterized by understanding knowledge as something static, which can be transmitted to children in predictable ways. Instead, it was attempted to promote the idea of creating, i.e. constructing knowledge, which in itself represents a personal, subjective, and authentic construction by the person who learns (Malaguzzi, 1998, Bascia

and Hargreaves, 2000, Vygotsky, according to Berk and Winsler, 1995). The way in which a child constructs his or her knowledge depends on his or her prediction and many other individual distinctions, the way in which he or she interprets a particular learning experience and the contextual characteristics in which that learning takes place. The correct way of teaching younger children is not by means of a lecture or a verbal lesson (Bredekamp, 1996), since younger children learn to participate actively, i.e. by creating and collaborating with others (Bredekamp, 1996, Rinaldi, 2006, Penn, 2008). The understanding of knowledge as a dynamic and developmental category that is continually evolving, constructing, and reconstructing is the foundation for the development of a constructivist, i.e. a co-constructivist curriculum (Miljak, 2007, Slunjski, 2006, 2015, Rinaldi, 2006, Malaguzzi, 1998), and is also the third direction of our “*outside the box*” journey.

The fourth direction of our research focused on examining the existing practice in terms of promoting autonomy and emancipation of children as opposed to child manipulation in the organization of the educational process. Our activities in this part of research focused most on overcoming the traditional position of the child in the kindergarten, which is passive, receptive, and in many respects disempowered. Rather, we have endeavored to strengthen the preschool teachers to encourage independent and critical thinking in children, i.e. to encourage their autonomy as a prerequisite for responsible behavioral development. The reason for this is that an important goal of education is to create autonomous, i.e. respectful relationships that allow children to evaluate things from different perspectives and learn to act independently. In an educational process aimed at respecting the rights and individual freedoms of the child, it is possible to expect the development of those qualities that are necessary for a free, actively creative, and responsible life of the child. This requires a respectful and equal relationship between all participants in the educational process and it focuses on the development of the personality of the child with an emphasis on self-reliance. This understanding of the educational process and the repositioning of the child in it represented the underpinning of the development of a humanist-oriented curriculum (Stenhouse, 1975, Malaguzzi, 1998). This was the fourth direction of our attempt to establish “*outside the box*” practices, i.e. converting the kindergarten into a place where children are not obedient objects but rather equal participants in the process of mutual learning with other children and adults.

Throughout the entire research we observed a noticeable increase in the interest of a larger number of practitioners for the direction in which the educational practice is being developed as well as for the accomplishments that are being achieved. In this respect, they began to express their interest in an active engagement in this process. So we started looking for opportunities for a greater number of connections between the practitioners and for building strong learning communities that would enhance their motivation and further boost their professional learning. We considered this to be important because we have repeatedly assured that achieving good practice does not mean one-time fixing of problems that prevent its development or make it more difficult to develop than to provide the preschool teachers with the tools to continuously recognize and remove problems. In that respect, we have tried to encourage the connection of practitioners since we are convinced that they can change the practice to a much greater scale than the individual, i.e. they can gradually create a new, more humane and more democratic educational policy. In this context, the general direction of our research, which we have painted metaphorically as “*outside the box*,” was to encourage the preschool teachers to move from a lack of freedom and restraint toward freedom, autonomy, equality, co-operation, and promotion of democracy.

FACEBOOK GROUP «OUTSIDE THE BOX»

Over time, the number of practitioners involved in direct and many indirect ways of the research process and improvement of educational practices and curricula grew. In this regard, as a particularly innovative form of connecting preschool teachers and other professional kindergarten teachers, it is important to highlight the Facebook group “*Outside the Box*.” This group was actually created with the aim of gathering practitioners

organized to develop their research and reflexive competences.

CONCLUSION

The potential for professional development of practitioners through Facebook groups is considerably weaker than through direct contact that is intended for a common analysis of the existing practice and development of better practices. However, practitioners in this group could strengthen their motivation and have the opportunity to somehow sense the “pulse” of kindergartens with high-developed practice and, as far as possible, be “infected” with ideas that characterize the contemporary curriculum.

At the same time, this group also showed that the current level of kindergarten development in the Republic of Croatia is very different, just as the level of professional development of individual practitioners within those kindergartens is very different since preschool teachers understand and interpret the notion of quality of educational practice and curriculum very differently as well as perceive and interpret the problems that arise on the path of this development differently, not to mention that the problems in different kindergartens also greatly differ. But most members of the group share a common acceptance of the idea of joint and collaborative learning that can lead to the release of personal and institutional constraints that reduce the possibility of practicing legitimate human and democratic values.

That is why the ultimate consequence of the research that we undertook is much broader than the improvement of the educational curriculum and the kindergarten curriculum that were directly involved in it. Much greater contribution is seen in building the capacity of individuals and institutions, and creating a professional learning community (Leithwood et al., 2009) whose participants connect and support each other in continuous learning and professional development based on strengthening their autonomy and emancipation. Or, in other words, the empowerment of practitioners to actively, i.e. thoughtfully collaboratively join the idea of developing an “outside the box” practice that needs to be better, more humane, and more democratic.

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Parental Attitudes as Predictors of Subjective Well-being of Psychological Counseling and Guidance Department Students*

Hatice KUMCAGIZ

Department of Counseling and Psychological Counseling

Department of Educational Sciences

Education Faculty, Ondokuz Mayıs University

Samsun / TURKEY

haticek@omu.edu.tr

ABSTRACT

The aim of this study is to examine parental attitudes as predictors of subjective well-being of psychological counseling and guidance department students. The *Psychological Well-being Scale* and *Child Raising Attitudes Scale* were applied to 397 students (231 females and 166 males) studying at Ondokuz Mayıs University, Education Faculty, Psychological Counseling and Guidance Department. In the data analysis process, one-way variance analysis (ANOVA) and hierarchical regression analysis were administered.

According to one-way ANOVA test results, there was no statistically significant difference in mother acceptance/care ($WelchF(1, 385.19) = .05, p > .05$), mother control/monitoring ($WelchF(1, 328.85) = .46, p > .05$), and father control/monitoring ($WelchF(1, 306.43) = .01, p > .05$) scores in terms of gender. However, it was revealed that females' parental acceptance/care assessments and subjective well-being levels were significantly higher than men's. One-way ANOVA results conducted based on class level indicates that father control/monitoring scores did not differ across class levels ($WelchF(3, 203.12) = .25, p > .05$) while there were meaningful differences in the scores of mother acceptance/care ($F(3, 393) = 2.79, p < .05$), mother control/monitoring ($WelchF(3, 209) = 3.53, p < .05$), father acceptance/care ($F(3, 197.22) = 3.55, p < .05$) and subjective well-being ($WelchF(3, 195.71) = 4.55, p < .01$) in terms of class level. To the hierarchical regression analysis results, when the gender and class levels of the participants were determined, the mother acceptance/care and father acceptance/care scores meaningfully predicted subjective well-being. Thus, interventions to improve subjective well-being levels and to increase positive parental attitudes of individuals can be focused on.

Key words: Parental attitudes, psychological well-being, counseling and guidance department students.

INTRODUCTION

Happiness, which is a psychological strength and source of joy and which facilitates the development of well-being in human life, is described as "subjective well-being" in psychology (Sarı & Özkan, 2016; Diener, 2000). Subjective well-being means that an agent assesses his own life cognitively and affectively (Diener, 2000), that he accepts his life as being mainly positive (Yiğit, 2013), and it also means positive affection, satisfaction and attachment (Diener & Seligman, 2004).

As a fundamental notion in positive psychology, there are numerous researches about subjective well-being in the literature. Subjective well-being level was found to be in correlation with variables such as self-esteem (Brynjulfson, 2004), social support (Gençöz & Özlale, 2004; Yarcheski et al., 2001), perceptions towards family support (Gülaçtı, 2010), and optimism tendency (Eryılmaz & Atak, 2011). In similar studies, evidence was found that factors such as supportive parents, overcoming challenging events, positive life events and relationships with significant people during adolescence (Park, 2004) result in a high level of satisfaction, which in turn plays an effective role in a high level of subjective well-being among university students.

The expectations from parents while they are raising a child not only include physical nutrition of the child, but also covers the attitudes towards developing his physical, social, mental, psycho-social and psychological well-being to contribute to the child's subjective well-being (Gupta & Mehtani, 2015). Baumrind (1966), who was one of the pioneers in examining the effects of parental attitudes on children, described parental attitudes as *authoritative*, *democratic* and *permissive*. Democratic parents expect mature behaviors from their children and they are sensitive about obeying the rules. Another characteristic of these sincere, patient and sensitive parents is that they also care about children's opinions about a family decision or an issue. Authoritative parents expect children to obey the rules unconditionally, do not ask about their children's opinions, and can give punishments

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to children when they encounter undesired life events. The parents displaying a permissive attitude do not control their children to whom are given too much freedom, and they have limitless tolerance for their children.

Parental attitudes are of vital significance in terms of adaptation to the society, becoming self-confident and successful in life as well as children's personal traits (Umucu-Alpoğuz, 2014). In this sense, there are many studies related to parental attitudes and its effects, and various points of views have been developed in the literature. It was proven that parental behaviors are influential on children's personality (Kapçı & Küçüker, 2006), self-confidence (Kim & Chung, 2003) and psychological well-being (Csikszentmihalyi & Schneider, 2001). Similarly, a positive correlation was found between satisfying the expectations of family and subjective well-being (Oishi & Sullivan, 2005; Pantke & Slade, 2006).

With improvements in the finance and industry fields, Turkish families have undergone several changes as well. Today, patriarchal families have started to be replaced by modern and democratic Turkish families. In association with these changes in family structure, the changes and differences in family-child relations and parental attitudes in raising child have also drawn our attention. Emphasizing to raise a child with optimal opportunities and ways is one of the most important responsibilities of Turkish parents. And this responsibility is basically depended on parents' developing positive attitudes concerning child raising. Indeed, the relationships between parents and children are quite complicated. A healthy relationship between parents and children is a crucial factor in becoming healthy children and individuals in the future. The relationships between parents and children affect children's current behaviors and also determine their future behaviors. The relationships between parents and children are basically dependent on parents' attitudes that they show to their children. Such attitudes can differ across families or cultures, but they all possess similar effects on children across all cultures (Tezel-Şahin & Cevher, 2007). The studies conducted in the guidance and psychological counseling field possess the aims to understand an agent's development process, to take precautions against possible difficulties an agent can encounter and to provide him with the most brief and functional solutions for these problems (Türkmen, 2012). This study plays an important role in psychological counseling and guidance department students' realization of the effects of parental attitudes on both their own and their future clients' subjective well-beings, since these students are expected to design preventive and constructive interventions so as to increase their clients' subjective well-beings. There is direct correlation between subjective well-being and being a happy individual. By taking precautions in determining the factors affecting subjective well-being and decreasing the negative factors on it will ensure them to be happy individuals in the future (Gündoğdu & Yavuzer, 2012).

When the guidance and psychological counseling department students graduate from their departments, they will serve as school counselors or as psychological consultants, they will influence their clients' lives and they will make an effort to improve the subjective well-beings of their clients. With the aim to ensure that they become a good role model in this sense, this study examines whether parental attitudes of the students studying at psychological counseling and guidance students predict these students' subjective well-being. Thus, the aim of the study is to analyze the relationships between these students' subjective well-beings and parental attitudes.

METHOD

Research Model: This study was designed as a relational screening model.

Study Sample and Procedure: The study sample consisted of students attending Ondokuz Mayıs University, Education Faculty, Psychological Counseling and Guidance Department, in Samsun, Turkey during the 2016-2017 academic year. The students participated in the study voluntarily, and it was implemented in classroom. Before the implementation, the necessary consents were received from Ondokuz Mayıs University Social and Human Sciences Ethics Board (Decision no: 2016-144), from the Rectorate of Ondokuz Mayıs University, from the departments and the academicians who were attending the courses at the time of the implementation. The study sample was determined with convenience sampling method among the volunteer students, and it consisted of 397 students, 231 of whom were female (58.2%) and 166 of whom were male (41.8%). The age range of the students was between 18 and 27, and the average age was 20.83 (S.D: 1.61). Lastly, 70 participants were first year (17.6%); 114 were second year (28.7%); 108 were year (27.3%) and 105 were fourth year students (26.4%).

DATA COLLECTION INSTRUMENTS

Personal Information Form: This form was used with the aim to collect information about participants' gender and class levels.

Parenting Styles Scale (PSS): This instrument was developed by Sümer and Güngör (1999) taking the suggested dimensions by Maccoby and Martin (1983) and the studies of Lamborn et al. (1991) into consideration. In the development process of the instrument and as a result of the varimax rotation analysis, two-dimension factors were obtained such as *acceptance/care* and *monitoring/control*, which consisted of 34 items. The alpha coefficients of the *acceptance/care* and *monitoring/control* sub scales were measured as .86 and .88 for the mothers report, and .88 and .87 for the fathers report, respectively. In a study with adolescents, Güngör (2000)

measured parenting dimensions within a family, and thus Sümer and Güngör (1999) developed the scale and added extra items to the parenting style scale. Thus, a 22-item PSS was applied to the adolescents in which 11 items belong to acceptance/care and 11 items belong to monitoring/control dimensions. The internal consistency coefficient of the scale for mother acceptance/care sub dimension was found as .87, and .92 for the father monitoring/control sub dimension in this study.

Psychological Well-being Scale: Aiming to assess the psychological well-being levels and consisting of 8 items, the instrument was developed by Diener et al. (2009) and adapted into Turkish culture by Telef (2013). The high scores in the scale stand for that the agent possess various psychological supports and strength. The internal consistency coefficient of the tool was found as .80 by Telef (2013). And the Cronbach Alpha internal consistency coefficient was measured as .88 for this study.

DATA ANALYSIS

Before the data analysis, the missing values, outliers and the hypothesis about the current statistical analysis were examined. Firstly, a participant who did not answer most of the instruments was excluded from the data set. Secondly, the participants' scores from the child raising styles scale, subjective well-being scale and submissive behaviors scale were transformed into standardized z-scores so as to detect the univariate outliers in parallel with the recommendations of Tabachnick and Fidell (2012). Then, five univariate outliers were excluded from the data set, one of which was from the mother acceptance/care sub dimension, two from the mother control/monitoring sub dimension in the child raising scale and five from the subjective well-being scale. In the third stage, the Mahalanobis distance was measured to reveal the multi variable outliers through using scores related to gender, class, and parental acceptance/care and control/monitoring sub dimensions, and thus many multi variable outliers were excluded from the data set (Tabachnick & Fidell, 2012). Pearson correlation analysis was conducted to see the relationships among participants' mother/father acceptance/care and control/monitoring, submissive behaviors and subjective well-being scores, and gender and class level variables. Also, a hierarchical regression analysis was conducted in order to reveal to what extent the parental acceptance/care and control/monitoring scores predicted subjective well-being scores when the effects of the socio-economic variables were controlled in the study. The variables which found to be unrelated with the dependent variable, *subjective well-being*, in the correlation analysis were not included into the hierarchical regression analysis. The hypothesis related to both tests was revised upon the recommendations of Ho (2013), and they were seen to be met. In the full statistical analysis, .05 was accepted as the maximum margin of error.

FINDINGS

Table 1 shows the correlations among the variables. As seen in Table 1, the subjective well-being scores were in weak and negative relationship with gender ($r = -.15, p < .01$) and mother control/monitoring scores ($r = -.12, p < .05$), and in weak and positive relationship with class level ($r = .15, p < .01$); and lastly in medium level and positive relationship with mother acceptance/care ($r = .44, p < .01$) and father acceptance/care scores ($r = .41, p < .01$). However, the subjective well-being scores were found not be in relation with father control/monitoring scores ($r = .02, p > .05$). Thus, the father control/monitoring scores were not included into hierarchical regression analysis.

Table 1 : The Correlation Values Among the Variables

	1	2	3	4	5	6	7
1. Gender	-						
2. Class	.06	-					
3. Mother acceptance/care	-.01	.09	.87				
4. Mother control/monitoring	-.04	-.16**	-.30**	.83			
5. Father acceptance/care	-.15**	.17**	.49**	-.22**	.91		
6. Father control/monitoring	-.01	-.01	-.05	.48**	-.21**	.92	
8. Subjective well-being	-.15**	.15**	.44**	-.12*	.41**	.02	.88

Note: $p < .05^*$, $p < .01^{**}$, The corresponding of the continuous variables are the measured Cronbach alpha internal consistency co efficiency values in this study.

Controlling the socio-demographic variables (gender, class level), the hierarchical regression analysis was used to examine to the what extent that mother acceptance/care, mother monitoring/control, father acceptance/care and submissive behavior scores predicted subjective well-being scores. In the first stage of the analysis, the variables were included, and in the second, mother acceptance/care, mother monitoring/control and father acceptance/care sub dimensions were included in the analysis. The hierarchical regression analysis results are demonstrated in Table 2 below.

Table 2 : Hierarchical Regression Analysis Results

Variable	Step 1					Step 2				
	B	SE	β	t	p	B	SE	β	t	p
Invariant	43.82	1.39		31.53	.001***	19.40	3.33		5.83	.001***
Gender	-2.36	.74	-.16	-3.12	.001***	-1.72	.66	-.12	-2.60	.010**
Class Level	1.13	.34	.16	3.29	.001***	.67	.31	.10	2.16	.031*
Mother Acceptance/Care						.38	.06	.33	6.50	.001***
Mother Control/Monitoring						.04	.05	.04	.04	.839
Father Acceptance/Care						.18	.04	.22	4.29	.001***
R^2		.05					.26			
Adj R^2		.04					.25			
SH		7.24					6.40			
$F(df_n, df_d)$		2, 394					5,391			

Note: $p < .05^*$, $p < .01^{**}$, $p < .001^{***}$.

As seen in Table 2, the contribution of the gender and class variables to the model included into the hierarchical regression analysis in the first stage was meaningful ($F(2, 394) = 9.50$, $p < .001$, $R = .22$, $R^2 = .05$, $R^2_{adj} = .04$). Both variables explained 5% of the changes in subjective well-being scores. In other words, in this sample being a female and at a high class was related with high subjective well-being scores. The variables included into the second stage regression analysis were also seen to contribute to the model significantly ($F(5, 391) = 27.80$, $p < .001$, $R = .51$, $R^2 = .26$, $R^2_{adj} = .22$). In addition to socio-demographic variables, this model explained 21% of the subjective well-being scores. As seen in Table 2, the contribution of mother acceptance/care scores ($\beta = .33$, $t = 6.50$, $p < .001$) and father acceptance/care scores ($\beta = .22$, $t = 4.29$, $p < .001$) to the model was meaningful in addition to the contributions of gender and class level variables. However, the contribution of mother control/monitoring variable to the model was not meaningful $\beta = .04$ $t = .04$, $p > .05$). In other words, when gender and class levels were controlled, the agents whose parents displayed accepting attitudes had higher subjective well-being levels in this sample.

CONCLUSION AND DISCUSSION

According to the study results, there was a positive correlation between students' parental attitudes and subjective well-being levels. It was found that the subjective well-being of students was in weak and negative relation with gender and controlling/monitoring mother attitudes; in low relations with class level; and in medium and positive relations with mother acceptance/care and father acceptance/care scores. Additionally, the students' genders and class levels, and mother acceptance/care and father acceptance/care scores were revealed to predict the subjective well-being of the students significantly.

In a review of the literature, in their study Joronen and Kurki (2005) indicated that a secure home surrounding, loving, positive and satisfying family relations served as an important factor in adolescents' wealth, and indirectly in their subjective well-being. Kocayörük (2010) emphasized the role of parents on adolescents' subjective well-being. In a study conducted by Neblett and Cortina (2006) with high school students, pointed out that the students who received from their families were more content, possessed positive inclinations for the future and were more hopeful and had positive perspectives about future. In the same study, the family contentedness was underlined as a crucial factor resulting in subjective well-being. Similarly, in a study with university students, it was found that family's social support had positive effects on students' psychological well-being (Aydın, 1999); that family's appreciation and supportive attitudes resulted in agents' feeling better psychologically (Gençöz & Özlale, 2004) while negative parenting styles and lack of social support was found to influence agents' happiness in a negative way (Cırhinlioğlu, 2006).

In the first stage of the hierarchical regression analysis of the present study, gender and class variables were seen to predict 5% of the changes in subjective well-being scores. In other words, the subjective well-being levels of females and the higher classes were higher. In the second stage, as well as gender and class level variables, the students who had accepting parental attitudes were revealed to possess high level of subjective well-being.

Clearly, positive parenting behaviors are necessary for developing a healthy emotion regulation system during childhood. Verbal aggression or rejections of parents might result in emotional dysfunctions in children, so the students who perceive their families as negative might quit communication and try to become introvert and withdraw, which in turn can be an indication of negative outcomes in child's psychological well-being in the future (Morris et al., 2007). The evidence from these studies also showed that positively perceived parental attitudes had specific effects on subjective well-being level (Sarı & Özkan, 2016; Eryilmaz, 2012), and parental care and approvals plays certain roles on adolescents' psychological wealth (Özdemir, 2012). However, there are other studies indicating differences between subjective well-being and gender (Dilmaç & Bozgeyikli, 2009; Tümkaya, 2011; Gündoğdu & Yavuzer, 2012), just like this study, while there are other studies revealing no such difference (Kulaksızoğlu & Topuz, 2014; Tuzgöl-Dost, 2010 Saygın & Arslan, 2009; Tuzgöl-Dost, 2006). The reason for these different outcomes can be explained with the idea that there can be individual factors affecting subjective well-being. This study has some limitations. Firstly, a correlation research design was used in this study, so a cause and effect relationship cannot be established from these findings. Secondly, the generalizability of the study to the other students is low since it was only conducted with undergraduate students studying at Psychological Counseling and Guidance Department. And lastly, since the information related to parental attitudes was gathered from student by means of self-report type scale, the participants' responds might be affected from specific errors which can be seen in this type of scales such as social favorability. In light of the results, these implications can be suggested: the practitioners in psychological counseling and guidance fields can utilize these results and develop preventive guidance services. Training programs which emphasize the effects of parental attitudes of children's psychological well-being can be organized.

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Peer Learning in HE: Students' Perceptions of the Benefits and Challenges in Becoming Peer Leaders in a Peer Assisted Learning Programme

Annyza TUMAR

Academic Enhancement Division,

Sunway University,

Malaysia

ABSTRACT

The Peer Assisted Learning Programme (PALP) was implemented at Sunway University to support students who are transitioning into their first year undergraduate programmes. Under PALP, peer assisted learning sessions for “at risk” subjects are facilitated by academically successful and trained peer leaders. In 2016, 35 peer leaders facilitated peer learning sessions for 8 undergraduate subjects, with a total of 718 peer learners. This paper reports peer leaders' perception of their experience and the challenges that they faced in facilitating peer learning sessions. It also reports on the overall benefits that peer leaders perceived to have gained from the programme. Data was derived from peer leaders' feedback at different stages of the programme and an online survey administered at the end of the programme. Peer leaders reported that their participation in the programme had enabled them to improve their knowledge and skills in five areas: subject matter, learner diversity, time management and project planning, communication skills and leadership skills. The peer leaders also reported 5 challenges during the programme: peer learners' absence, irregular attendance and unpreparedness, late-joiners to the programme and high student number. Some suggestions on how the programme could be improved further are also discussed.

Keywords: peer-assisted learning, supplemental instruction, higher education

INTRODUCTION

One of the many challenges that academics face in ensuring that their students receive the necessary learning support for their subjects is the limited amount of time that they have with their students. With face-to-face interaction during class time being limited due to the number of students in class, the different pace at which students learn and the volume of learning materials that students need to engage with, additional support for both academics and their students are needed. Such support helps students manage their learning without at the same time over-burdening their lecturers. In that respect, students who have successfully transitioned into their first year of undergraduate and have performed well academically during their first year can become that needed learning resource and support for their peers. The implementation of peer learning support that is effectively managed within the institution enables students to gain additional learning support outside the classroom without overburdening the already stretched university resources and academic staff's time (Boud, Cohen & Sampson, 2014).

Research has shown that peers have considerable influence on each other. At undergraduate level, it has been found that peers have significant and meaningful impact on each other. They are found to have an impact on their peers' intellectual development, academic engagement, the discovery and establishment of academic and social concept, interpersonal skills and critical thinking skills (Greenfield, Keup & Gardner, 2013; Pascarella & Terenzini, 2005)

In peer learning sessions that are facilitated by other students, the benefits are not restricted to peer learners only. Academically successful senior students who undertake the role of peer leaders/ facilitators during the learning sessions also derive benefits from their role. In one study, peer leaders reported an increase in confidence in their own ability to manage group dynamics and facilitate peer learning; they also reported an increase in empathy with peer learners (Harmon, 2006). In other studies, peer leaders reported that their participation in peer assisted learning sessions had led to improved interpersonal skills, organisational skills, time-management, presentation skills, written communication and academic skills (Keup, 2010; Newton & Ender, 2010). Peer leaders are also found to have gained benefits through improved ability in managing groups, interpersonal skills, critical thinking and problem solving skills (Wawrzynski & Beverly, 2012).

Peer Assisted Learning Programme (PALP) at Sunway University

Informed by the benefits of peer assisted learning sessions to students who regularly attend such sessions and the peer leaders who facilitate the sessions, PALP at Sunway University was first implemented in 2013. The programme was based on Supplemental Instruction and Peer Assisted Study Session model by the University of Wollongong. Within supplemental instruction sessions, the learning sessions are facilitated by more senior students and these sessions support subjects that are considered “high-risk” (Dawson, van der Meer, Skalicky & Cowley, 2014).

PALP and PALP peer leader role were developed fitting with the definition by Newton and Ender (2010, p.6) who state that peer leaders are:

Students who have been selected and trained to offer educational services to their peers. These services are intentionally designed to assist in the adjustment, satisfaction, and persistence of students toward attainment of their educational goals. Students performing in [such] paraprofessional roles are usually compensated in some manner for their services and are supervised by qualified professionals.

The initial two years (2013-2014) was considered the pilot phase, with a very small number of peer leaders and peer learners selected. Beginning 2015, the programme was open to undergraduate students who were enrolled in the first year subjects that it supported. Subjects identified to be supported by PALP were those deemed to be “at risk” due 20% or more failure rates, a large number of students enrolled onto the subjects or both. Another reason for selecting first year subjects was also to support the undergraduates’ transitioning process from their previous level of study into their undergraduate programmes and help them develop learning skills needed for higher learning. Such support has helped with student retention beyond first year and students’ ability to move to higher level (Keup, 2013).

Programme Structure

Sunway University’s academic calendar comprise a 7-week semester that begins in January and two 14-week semesters that begin in March and August respectively. PALP-supported subjects, and as such, PALP itself, are offered in the March and August semesters. Recruitment process for peer leaders begins in January with programme promotion. Students who are interested and meet the set criteria are invited to submit their application. Criteria for eligibility are (1) completion of the first year of undergraduate studies (2) an average of B for subjects taken in the first year, and (3) at least a B for the subject(s) that the applicants wish to facilitate. Applicants are also required to include their personal statement and obtain a written support from at least one academic staff who had taught the students either during their first year or during their pre-university programmes.

There are two components to the peer leader selection process. Applicants who meet the criteria are called for an interview to determine their readiness for the peer leadership role. This is based on their academic performance (determined through their application and supporting evidence), their communication and problem solving skills (assessed during the interview). The second component is the 2-day training peer leader training programme. During this training, applicants are observed while they engage in the activities to further determine their communication and problem solving skills. In addition, their ability to work in a group is also assessed. Applicants who have successfully undergone the interview and the training programme are then formally appointed to become peer leaders of the programme. Peer learners are recruited at the commencement of the semester and peer learning sessions are then scheduled throughout the week during the semester. In performing their responsibilities, the peer leaders are supervised by the programme manager and are also given an allowance for attending trainings, meetings with the programme supervisor, session preparation and facilitation.

PALP Programme in 2016

In 2016, the Peer Assisted Learning Programme at Sunway University continued to support two schools within the university – the Business School and School of Science and Technology, with a total of 8 subjects supported. The programme had grown significantly in terms of the number of peer leaders, the number of peer learners and the number of peer learning sessions conducted within that year. The growth in number, in comparison to when the programme first began in 2013, is reflected in the table below.

Table 1: Number of peer leaders, peer learning sessions and peer learners in 2013 and 2016

	Peer Leaders		Sessions / week		Peer Learners	
	2013	2016	2013	2016	2013	2016
March	7	35	2	28	11	389
August	7	26	2	27	51	329
Total for the year	7	35	40	522	62	718

The table shows that in 2016, the number of peer leaders in the programme had increased from 7 to 35 while the number of peer assisted learning sessions had increased from 40 to 522. The number of peer learners had also increased from 62 to 718. The peer leaders for March semester that year were the same peer leaders who facilitated peer learning sessions in August but there was an attrition. A few peer leaders who moved into the final year of their study resigned from their position to focus on their final year while others cited personal commitments. Most peer leaders facilitated at least 2 groups of peer learning each semester. A small number facilitated either 3 groups per week or one group only. The maximum number of peer learners for each group was 10.

Given the increase in student involvement, as reflected by the table above, and the fact that the programme had stabilised, it was deemed important to explore the experiences of students who participated in the programme – both the peer leaders and the peer learners. However, for this study, the focus was on the peer leaders and their perception of the value of the programme to them.

RESEARCH QUESTIONS

The study was undertaken to explore the answer to the following questions

1. What benefits did peer leaders gain from their role in PALP?
2. What challenges did peer leaders face when facilitating peer assisted learning sessions for PALP?
3. How can the programme be improved?

METHODOLOGY

This study took on a qualitative approach. Thirty-five students who were appointed as PALP peer leaders in 2016 agreed to participate in the study. However, only data collected from 26 peer leaders were included in the analysis as nine peer leaders had resigned after one cycle of the programme, as mentioned earlier. Five stated the need to focus on their final year studies as the reason and 4 stated personal reasons. Data collected from these peer leaders were not included as they did not have a full peer leader experience. Three methods of collecting peer leader feedback were carried out at different intervals during the programme. The first one was in the peer form of a “one-minute paper”. This was an open-ended feedback collected at the end of the 2-day training, before peer assisted learning sessions began in March 2016. The second peer leader feedback was collected through “poll-everywhere”, an online survey response system. It was administered after a one-day professional development workshop for the peer leaders, before the 2nd cycle of the peer assisted learning sessions began in August 2016. For both, the focus was on the value that peer leaders found from the 2-day training and the 1-day professional development workshop. Participants were asked what they had learned from the training/workshop, how they could apply what they learned to their role as a peer leader and further development they felt they needed to become effective peer leaders. The third method of collecting peer leader feedback was through a peer leader satisfaction survey. This was administered through Survey Monkey at the end of 2016, after the programme had ended for that year. The online satisfaction survey contained three open-ended questions on the peer leaders’ experience in the programme, what they had gained from it and how the programme could be improved. Feedback collected from the peer leaders was also correlated with data on PALP maintained by the institution.

FINDINGS AND DISCUSSION

Peer leaders’ responses were analysed and emerging themes were identified. Findings indicated that peer leaders perceived clear benefits from the programme and at the same time encountered several challenges. These are identified and discussed below.

1. Benefits gained from being a Peer Leader in the Peer Assisted Learning Programme

Peer leaders perceived their participation in the Peer Assisted Learning Programme had helped them to be more self-aware about their own personal development needs as undergraduates and their role as peer leaders. All peer leaders reported self-improvement in 8 areas:

- (1) Confidence
- (2) Interpersonal communication
- (3) Presentation skills
- (4) Understanding of learner diversity
- (5) Mentoring skills
- (6) Planning and time management
- (7) Leadership skills
- (8) Understanding of subject matter

Peer leaders attributed the benefits they gained to the training and professional development that they had undertaken and from carrying out their role as peer learning facilitators.

In relation to confidence, 23 per cent of the 26 peer leaders reported an improvement in their self-confidence. These peer leaders, at the start of the programme, perceived themselves to be introverts who were not usually comfortable among other people. They cited wanting to improve and their belief that the programme could help them improve as part of the reasons for signing up for the programme. One peer leader, for example, stated at the start of the programme, that she needed to improve her confidence and “not be so intimidated” by others. Another peer leader stated that he had signed up to become a peer leader to push himself: He said that he needed to “develop by opening up” himself and by understanding others more. He acknowledged having “shut” himself off from others due to his constant struggle “with a lot of failures” in his past. This peer leader, at the end of the programme, stated:

I have a long way to go. I still have to force myself to talk to other people, not to be so inward. But I signed up for it, so even when I didn’t want to, I had to prepare for my sessions and go...I think it wasn’t so bad. I tried, my group was nice to me. And when they see me [at other times], they smile or wave or come and talk to me. And I have to do the same. I’m their peer leader. I’m a little bit more confident now but still feel awkward.

In contrast to the 23 per cent who needed to improve their self-confidence and did by the end of the programme, one participant who already perceived himself to have high self-confidence learned that having high self-confidence included being able to take a step back so that others could step-up. He stated the following: “One area which I received feedback on at the beginning and agreed I needed to improve on was that I tended to be too dominant in certain situations. I learned that I needed to take a step back and allow my peers to take over from time to time.”

The second, third and fourth areas of improvements identified by the peer leaders were interpersonal communication skills, presentation skills and understanding of learner diversity, which they perceived to be closely related. While only 50 per cent of the peer leaders stated that they needed to improve their communication and presentation skills at the beginning of the programme, all of them reported improvements in these areas, albeit to a varying degree. Additionally, 69 per cent perceived that they had learned to develop empathy, be more open and patient, which helped in their communication with their peers. Peer leaders attributed these improvements directly to their role as a peer learning facilitators. The following are responses extracted from different peer leaders:

It helped me to understand that everybody has different learning method and that how little things we say may have great impact on them.

I think I am now able to understand the body language and facial expressions the mentees would give when they understand or do not understand something.

People have different ways of thinking, so understanding each of their personality is very important.

As illustrated in the examples above, having peer learners who learned differently and who might have had different learning needs emphasised to the peer leaders that they needed to be more open to learner diversity. They mentioned that they were more conscious of the need to empathise and be more flexible in the way that they facilitated learning sessions and the choice of learning strategies to be demonstrated during the learning sessions. The need to explain things in different ways to support their peers and pace the sessions to fit their needs, and the effort that they had put in, contributed to the peer leaders’ communication skills and presentation

skills improvement. As stated by a peer leader, “I believe that my communication skills have improved as I try to find different ways to explain my answers if they do not understand it when I explain using the first method.” Another pointed out, “These mentees would expect us [peer leaders] to be able to lead and guide them in the subject matter. As such, I would think of ways to be able to communicate effectively and cater to the needs of each mentee.” One peer leader summarised how he learned to be more open, to empathise and be more patient clearly by saying:

I’ve learnt that easy things... for me, may not be that easy for others. It’s linked to not taking things for granted. I’ve tried to look into the perspective of my peers, that maybe a topic that is easy for me, is magnified 5 times harder for my peers. They may be uncertain, scared, upset and disappointed with themselves for not [being] able to learn the same as others. The gap between people who get things easily and people who don’t get things easily is quite huge. Thus, I’ve learnt that I should see things not just from my point of view.

In addition to improving their communication skills, presentation skills and understanding of learner diversity, 42.3 per cent of the peer leaders felt that they had learned to become a mentor or to become a better mentor. Peer leaders reported the need to be “approachable” and “friendly” with their peer learning group. They also reported the importance of “listening” to their peers to try and understand the difficulties that their peers faced, instead of making assumptions. Peer leaders also highlighted that being a mentor and a facilitator of the programme meant that they had to get their peers to interact more with each other and contribute to the sessions. They felt that as a mentor, they had learned to be “encouraging” so that there was more participation. However, they might not have been as successful as they wanted due to challenges that will be discussed in the next section.

The sixth and seventh areas of improvements identified by the peer leaders were planning and time management, and leadership skills, which were perceived to be inter-related. Sixty-nine percent of the peer leaders perceived that they had improved in these areas at the end of the two-cycles of the Peer Assisted Learning Programme. Further analysis of the data showed that the peer leaders saw the improvement of leadership skills as being directly connected to the training that they received and their role as learning facilitators for their peers. However, they did not attribute specific elements of the training or professional development that they were given as the reasons for the improvement in planning and time-management skills. Instead, this was attributed as an outcome from having to manage their own studies, assignments, other leadership roles or co-curricular activities that they might have undertaken, as well as their own personal lives. As mentioned by some of them:

It has taught me to manage my time wisely between my studies, PALP, clubs and societies as well as the relationship I have with the people around me.

As I have to juggle between my studies, involvement in clubs and societies and PALP, PALP has contributed to helping me manage my time better and taught me to plan ahead.

Time management and organisational skills are very important and being a peer leader enabled me to refine those skills.

Finally, peer leaders also perceived improvement in their understanding of the subject matter. In this area, the peer leaders reported that they had become more aware of the learning strategies that they had used because they needed to share the learning strategies that worked for them. Having to articulate the learning strategies to their peers helped the peer leaders to become more conscious of their own learning strategies. Sharing of learning strategies, either with other peer leaders or with their own peer learning group also helped the peer leaders to have a bigger selection of learning techniques that they could adopt for themselves. Twenty-seven per cent of the peer leaders felt that facilitating peer learning sessions on a basic accounting subject that they had successfully completed helped them revise the subject and understand it better. This was useful preparation for them as they had other accounting subjects to take at a higher level. As stated by one peer leader, “While guiding my peers, I happen to learn and remember new things as well and this helps me in my own studies.”

2. Perceived challenges in facilitating peer-assisted learning sessions

Based on their experience facilitating peer assisted learning sessions for two 14-week semesters, the peer leaders identified 5 main challenges that they had faced, the causes they had attributed to each challenge and the impact the challenges had on the peer leaders and their peer learning group. These are reflected in the table below.

Table2: Peer leader challenges, perceived attributed causes and impact on peer leader and peer learning sessions

Challenges	Perceived attributed causes	Impact	
		<i>On peer leader</i>	<i>On learning session</i>
Absence	Lack of commitment	Demotivated Upset Frustrated	Limited discussion Lack of participation Lack of response
Irregular attendance	Lack of interest in learning		
Unprepared peer learners	Lack of interest in topic		
Late joiners	Unstated	Challenge in addressing basic topics and inability to proceed to more challenging topics	
High student number	High maximum capacity allowed	Difficulty to manage each session and to finish completing topics that needed to be covered	

As can be seen in the table above, the peer leaders attributed each challenge to a specific cause. Peer learners' absence and irregular attendance were perceived to be caused by a lack of commitment or a lack of interest on the part of the peer learners. Peer learners being unprepared was also seen as a sign of a lack of interest in the topic.

It was noted that the causes identified for peer learners' absence, irregular attendance and being unprepared were assumed causes that might not have been verified by the peer leaders. For example, one peer leader, in referring to students' irregular attendance to the learning sessions, stated, "It showed that those students are not interested in learning." Another peer leader made a similar statement, "It shows their lack of interest..." The first three challenges identified by the peer leaders impacted them emotionally. Peer leaders reported that they felt "demotivated", "upset" and "frustrated". For example, one stated, "It was very demotivating and upsetting when a handful of mentees do not let us know [of their absence] in advance and do not come." Another felt frustrated because it meant that she could not carry out what she had planned for the learning sessions because of the absence.

Peer learners' absence, irregular attendance and unpreparedness also impacted the learning sessions. Peer leaders felt that often, discussions became limited and that there was a lack of participation or response. One peer leader made an observation that as a result of these challenges, "I feel like have to spoon feed them. It is difficult for me to carry out any fruitful discussion as there will be little to no reply." The peer leaders perceived this challenge caused them to be less effective as mentors.

The fourth challenge identified by the peer leaders was students who joined the programme late into the semester. Twenty per cent of the peer leaders reported that they had peer learners who joined their sessions late in the semester. However, in this case, an assumption was not made and no reason was given. Peer leaders felt that some of those who joined their sessions late were were also very weak. It was challenging for them to help these peer learners with the basic topics while at the same time needing to support peers who have moved ahead to other topics. The peer leaders observed that a number of them were unable to catch-up while the peer leaders themselves felt that they were in a difficult situation. For example, a peer leader stated that she felt she "did not do well enough as a mentor" to ensure that those who joined her sessions later had "a better understanding of the subject."

The fifth and final challenge identified by the peer leaders was high student number in their learning sessions. Forty-six per cent of the peer leaders felt that the number of peer learners in their sessions was too high. One peer leader stated that it was difficult to manage her session because there was "almost 20 peer learners in her group". Another peer leader cited that the maximum number allowed should be less than 10, while a third stated that it should not be more than 7 per peer leader. Peer leaders stated that a high number of mentees in their sessions meant that they were not able to "cover" or "finish" all the topics for the subjects.

Data maintained by the institution showed that of the 28 peer-assisted learning sessions that were held each week in March semester, 2016, only three sessions had more than 10 peer learners – one session had 18 peer

learners, the other two had 17 and 16 respectively. These numbers, which were higher than the maximum of 10 students per peer learning session was to accommodate some peer leaders who requested to combine their peer learners and co-facilitate their sessions with another peer leader. As such, the actual number of peer learners per peer leader was still not exceeding 10. This applied to August 2016 semester as well. Of the 27 peer-assisted learning sessions held each week during that semester, 4 had between 15-17 peer learners in the group but each of these sessions was facilitated by two peer leaders. As such, the peer leaders' perception of high student number in the peer learning sessions seemed to indicate that an ideal number per session is much lower than that set by the institution.

3. Suggestions for programme improvements

Overall, the peer leaders provided 3 main suggestions to improve the programme – (1) to reduce the number of peer learners per session; (2) to increase the time allocated for each peer-assisted learning session; and (3) to increase peer leader “payment” for their services. There seemed to be a general consensus on the main reasons for asking to reduce the number of peer learners and to increase the time allocated for each session – that there was a lot to cover but there was insufficient time and too many students. This could be linked to the challenges that peer leaders had identified earlier. Peer leaders also suggested that the “payment” or “allowance” for peer leaders be increased from the current amount, although none gave a recommendation of a suitable figure. One peer leader mentioned that “peer leaders could be motivated through an increase in the earnings per hour.” Another peer leader mentioned that “a raise in allowance” might be able to “compensate” peer leaders for their mileage as some might have to come to the campus just for their sessions when they had no lectures or tutorials. Apart from the 3 main suggestions, there were other suggestions. Peer leaders also suggested that peer leaders be given access to eLearn for the subjects they had been assigned to for the programme. The peer leaders had access to eLearn for the subjects when they were enrolled on the subjects but at the time they were facilitating PALP peer learning sessions, they no longer had access to it. As one peer leader stated, “the lecturer may have changed the learning materials, changed emphasis or they may be new materials. It would help if we know what is going on in the subject.” Another suggestion was to provide more training to help them deal with different learners better. A final suggestion was to give students who were interested to sign up as peer learners for the programme a trial class so that they understood what peer-assisted learning sessions were and that these sessions were not meant to be tutorials. This might help reduce attrition rate as only students who understood what they would get out of the sessions would sign up.

CONCLUSION AND RECOMMENDATIONS

The experience of peer leaders of the Peer Assisted Learning Programme appears to have benefitted the peer leaders in gaining better understanding of the subjects that they facilitated – which helped their own studies. Beyond that, being peer leaders seemed to have contributed towards an increased self-awareness and positivity in their personal attitudes towards other learners who may be different to them and to each other. This could be gathered from the accounts provided by the peer leaders on the different methods that they had tried to support peer learning. Finally, but equally important, the peer leaders completed two cycles of the programme with improved communication and presentation skills, were better at leadership and had improved their own efficiency in time-management and project planning. All these, combined with increased positivity in their personal attitude, are traits and transferrable skills which employers look for. The peer leaders, through their engagement in the programme, had essentially engaged in continuous learning, where they learned to become a mentor, to help others develop and to take initiative to analyse and evaluate their effectiveness in order to solve both learning problems as well as manage their peer learning group. They had also improved their mastery of their subject matter. These are some of the meta-competencies for employability (Gardner, 2011).

However, peer leaders' feedback also indicated that there are also important considerations for programme improvements, specifically in training to prepare peer leaders better for their role and to provide continuous support for them. Firstly, from the peer leader feedback, it can be deduced that some peer leaders might not have been as open and as empathetic as they believed themselves to be. By assuming that peer learners' absence, irregular attendance and lack of preparation were due to the peer learners' lack of interest and commitment, some of the peer leaders might not have considered that there could be other reasons that were related to their peer learners' workload, personal matters or even how the learning sessions were facilitated. A

request that “peer leaders should have more training” was supported by the reason that “communicating with **those peers** who are lazy to do any work by themselves is tough” [emphasis added]. Although this was the strongest statement of blame, a similar perception had been communicated by others. Secondly, the peer leaders’ choice of words indicated that some of them still viewed their role to be the teacher during their sessions and that it was their responsibility to cover all the topics, or at least, all the important topics for the subject. It also appeared that they felt their responsibility included having to explain, demonstrate or do other things that were necessary to help their peers understand the subject better. While their role carried some elements of teaching, explaining and demonstrating, in a peer learning environment, it should be a collaborative effort which they facilitate.

There are some recommendations to improve future leaders’ experience with the programme and increase the benefits that they derive from it. (1) Increase the number of interim support for peer leaders. Short sessions with peer leaders should include self-reflection and group problem-solving strategies. Such sessions might help provide needed support to peer leaders while at the same time help engage them in critical reflection in order to develop openness to different learners and the challenges these learners may have. (2) Future peer leader trainings and continuous development need to continue to emphasise the differences between peer leader role and the teacher role. As peer leader feedback has indicated, putting an emphasis on the differences may not be enough. Peer leaders need to be trained and continuously supported so that they could use different active learning strategies which enabled their peer learners to contribute to learning sessions and for the peer leaders to genuinely facilitate the sessions. With their ability to adopt more and different learning strategies, peer leaders may learn to be more flexible in managing peer learners who missed some sessions. (3) Reducing the number of peer learners per learning session from the current 10 may not be possible. It puts more constraints on physical resources such as availability of venues and scheduling more sessions which were compatible with both the peer leaders and peer learners. However, a workable solution would be to provide specific training and support for peer leaders to be able to manage the number effectively. Finally, the decision on whether to increase the allowance given to peer leaders will need to be considered carefully to ensure that the programme can continue to be sustainable as student numbers to undergraduate programmes continue to increase.

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Peculiarities of the Information Structure of Written Discourse and its Use in FLT Classroom

Golovchun A.A.

Candidate of pedagogy

al_tina@inbox.ru

Zolotukhina YE.

Kazakh University of International Relations and World Languages named after Ablai Khan

Kazakhstan

goldenear@list.ru

ABSTRACT

This paper is a report on the findings on the topic of peculiarities of the information structure of written discourse especially in the context of investigating the developing and using discourse competence in the FLT classroom. A short analysis of syntactic peculiarities of the information structure is given. Authors come to the conclusion that written discourse makes use of a variety of syntactic structures. The investigation of forms of providing discourse competence in the FLT classroom were demonstrated. The direct relationship among the three concepts as only through the use of texts skills can be integrated and only through an integrated, holistic approach to text can we develop the discourse competence in the classroom.

INTRODUCTION

Studying the ways people communicate is a very complex matter because it entails various aspects of different disciplines. Aspects of media use may also be involved as well as social and psychological dimensions. The different factors of grounding, the participants of the communication and the setting have to be considered as well as the dimensions of cognitive frames and idealized cognitive models, which language users have internalized. These complex phenomena have been the concern of discourse analysis for the past five decades. The different approaches and perspectives adopted to study human communication make it difficult to present an exact definition of discourse analysis and clear understanding what discourse, discourse analysis and its peculiarities are. In everyday language, the word *discourse* usually means conversation or discussion. However, scholars mean that discourse is far more than this. Discourse can provide all forms of communication. In general, discourse theory is concerned with human expressions, often in the form of language. It demonstrates the links such expressions and human knowledge. A shared argument is that the things people say or write draw from a pool of generally accepted knowledge in a society, while at the same time feeding back into society to shape or reinforce such knowledge. The term “discourse analysis” has come to be used with a wide range of meanings which cover a wide range of activities. It is used to describe activities at the intersection of disciplines as diverse as sociolinguistics, psycholinguistics, philosophical linguistics and computational linguistics. Scholars working centrally in these different disciplines tend to concentrate on different aspects of discourse. Identifying and analyzing structural peculiarities of the information structure of written discourse, especially the peculiarities of theme and rheme, we can go into the question of discourse competence in the classroom and the ways, how it can be developed and used in FLT classroom.

THE STUDY

Nowadays, discourse analysis is used as one of the instrument which helps the scholar to take into account the information hidden in both written and oral texts. First of all, it is necessary to understand what discourse is and how linguists are defining it. Discourse is the creation and organization of the segments of a language above as well as below the sentence. It is segments of language which may be bigger or smaller than a single sentence but the adduced meaning is always beyond the sentence. T. A. van Dijk says that “discourse is generally understood as text in social environments. Relations between sentences in a discourse cannot be described in semantic terms alone” (Van Dijk, 1977, p. 80). The later approaches to the discourse of Cook defines discourse as “*language in use, for communication*” (Cook, 1989). It shows us that discourse cannot be classified as a description of linguistic forms independent of the purposes/functions which they are designed to serve. Also one of the important definitions of the discourse is definition given by D.Schiffirin that “*discourse is utterances*” (Schiffirin, 1994). Discourse is seen as a linguistic construction that is larger than other units of language. In other words, the utterance (not the sentence) is positioned as the smallest unit, of which discourse is comprised, meaning that discourse arises as a collection of

inherently contextualized units of language use. Summarizing the above, it is necessary to say that discourse cannot be confined to any boundaries. These varieties of discourse definitions are the best proof for the describing discourse as the expression of thought through language. The study of naturally occurring connected sentences, spoken or written, is one of the most promising and rapidly developing areas of modern linguistics.

Also it is important to mention the differences in linguists' views on a question if definition of discourse is similar with the definition of the text. Actually, we can provide the information about the division linguists into two groups where one group of linguists gives us the idea that discourse can be described as a similar with text object and the second group is positioning the opinion that meaning of the discourse can be separated with the meaning of the text. According to Matthews, discourse is "any coherent succession of sentences, spoken or written" (Matthews, 2005). This definition of the term "discourse" has no clearly meaning if discourse is the text or not, however the Matthews was trying to position discourse as a written sentences that are connected one by one with its own meaning. Here is clearer position: "discourse is the text but that type of text that consists of communicative language units – sentences and its constructions with continuous semantic relations" (Thornton, 2008). This definition that was given by a group of linguists show us the new way of understanding the discourse as a text demonstrating it as a unique and separate type of text. The definition "discourse is the logically created text that exists in concrete context" shows us the varieties of usage of discourse in concrete context and situation. And the last found definition "discourse is a random text unit that consists of more than one sentence" (Coulthard, 1985) makes the shortest clear understanding of a discourse in the opportunity of being similar as a text. However, as we had mentioned before, the second group of linguists shows us the differences between text and discourse. Let's start this part with the definition of discourse given by Stubbs: "Discourse is language above the sentence or above the clause" (Stubbs, 1983, p. 149). It means that discourse can be shown just as a sentence or clause because of its wideness. Harris claimed explicitly that discourse is the next level in a hierarchy of morphemes, clauses and sentences. He also argued that what opposes discourse to a random sequence of sentences is precisely the fact that it has structure. Van Dijk distinguishes basically between common sense-definitions and theoretically elaborated definitions of discourse. While "discourse" is synonymous to social or institutional language use in everyday speech, theoretical definitions cover over three dimensions of communicative events: language use, communication of opinions and cognition, interaction. Habermas was positioning the "discourse as processes of argumentation and dialogue in which the claims implicit in the speech act are tested for their rational justifiability as true, correct or authentic" (Habermas, 1981, p. 243). On the other hand, Salkie does not differentiate between text and discourse at all: "A text, or discourse is a stretch of language that may be longer than one sentence. Thus text and discourse analysis is about how sentences combine to form texts" (Salkie, 1995, p. 53). Summarizing the above, text can refer to any written material that can be read, but discourse is the use of language in a social context; also, text can be defined as an object that can be read, whether it is a work of literature, a lesson written on the blackboard, or a street sign, but discourse was first interpreted as dialogue – an interaction between a speaker and a listener, however, text usually refers to the written material, but discourse referred to authentic daily communications, mainly oral, included in the wide communicative context.

However, our point is to discover the peculiarities of written discourse. Everyday people come into contact with written texts and interpret their meanings so as to get what they intend. We can never think of a literate man who never writes or tries to write something. Written discourse is not only permanent but also visible. An important consequence of this is that the writer may look over what he has already written, pause between each word with no fear of his interlocutor interrupting him. He may take his time in choosing a particular word, even looking it up in the dictionary if necessary. Written language makes possible the creation of literary works of art in ways comparable with the creation of paintings or sculpture. Speech, of course, retains functions which writing will never be able to fulfil, such as quick, direct communication with immediate feedback from the addressee. The speaker must monitor what it is that he has just said, and determine whether it matches his intentions, while he is uttering his current phrase and monitoring that, and simultaneously planning his next utterance and fitting that into the overall pattern of what he wants to say and monitoring, moreover, not only his own performance but its reception by his hearer. The view that written discourse and spoken discourse serve, in general, quite different functions in society has been forcefully propounded by scholars whose main interest lies in anthropology and sociology. Goody suggests that analytic thinking followed the acquisition of written language 'since it was the setting down of speech that enabled man clearly to separate words, to manipulate their order and to develop syllogistic forms of reasoning' (Goody, 1977, p. 178). But we cannot deny the fact that speech is an everyday activity for almost everyone, whereas written discourse may not be. Nor can we state that spoken and written discourse are not complementary in function and one is more important than the other.

In our research we were studying the peculiarities of written discourse and let's speak about the aforementioned definitions as an important point of written discourse. The aforementioned definitions may be used as a starting point for discourse analysis, especially in case of syntactic peculiarities of the certain text, or set of texts which are presupposed by their discourse characteristics. Thus, in accordance with the approach manifested by Cook, it is possible to analyze the extracts from the book "The Help" by Kathryn Stockett. Syntax of the given text is very specific because it is based mostly on the syntax of Vernacular English i.e. English used by Afro-Americans in the frame of certain language community. E.g.: "Miss Leefolt seen me at it too. *She ain't but twenty-three years* old and she like hearing herself tell me what to do; Miss Skeeter *real tall and skinny*. Her hair *be yellow* and cut short above her shoulders cause she get the frizz year round. She twenty-three or so, same as Miss Leefolt and the rest of em". Here we can see various discourse characteristics of Vernacular English which will be perceived by the members of that language community whereas for recipients who are outside of it those peculiarities are not clear at all. Moreover, such characteristics as compression of the text, omission of auxiliary verbs which are typical for that community can be treated as obstacles in the process of text perception by non-native speakers of English. E.g.: "Miss Leefolt *don't pay but ninety-five cents an hour*, less than I been paid in years. But after Treelore died, I took what I could. Landlord wasn't gone wait much longer. And even though it's small, Miss Leefolt done the house up nice as she can". For the recipient related to another culture such syntactic characteristics (which contain the important background information) are not familiar.

One of the most interesting points about the discourse is its information structure and its peculiarities based on the peculiarities of written and spoken discourse. Information structure satisfies two communicative goals: making the information conveyed by the discourse easier for the reader/hearer to understand and indicating what the enunciator considers to be the most important or salient items of information. Generally speaking the writer or speaker will place at the beginning of the clause what he is speaking about, the *theme*, which usually contains given elements, New elements of information concerning this theme will figure afterwards in the *rheme*. This can also be demonstrated on the basis of «The Help». Thus, in the emotional utterances given below we observe specific position of theme and rheme. E.g.: «My grass be kind a spotty and I still got a big yellow mark (rheme) where Treelore's pickup sat for three months after the accident (theme). AROUND LUNCHTIME, when my stories come on tee-vee (rheme), it gets quiet out in the carport (theme)".

The integration of the four skills in relation to texts, one of the basic tenets of modern language teaching, depends on the development of the discourse competence in the classroom. There is a direct relationship among the three concepts as only through the use of texts can we integrate skills and only through an integrated, holistic approach to text can we develop the discourse competence in the classroom. First, the discourse competence will be defined in relation to the most relevant models of the communicative competence. Second, a number of teaching procedures will be discussed to develop the discourse competence in FLT. Third, evaluation will be considered as an important aspect in the learning and teaching process, providing criteria and procedures to evaluate the discourse competence. Finally, some further issues related to the discourse competence will be studied which represent innovations for research and avant-garde language instruction. Goals, aims and objectives can help us make real the general purpose of language learning. In particular, that threefold distinction lies under the use of the communicative competence as the goal in language learning. Taking Chomsky's dichotomy of "competence" and "performance", language teaching theorists have defined competence as the main goal in language learning assuming that control of underlying rules of language is the basis of language performance (Chomsky, 1965, p. 39). "Competence" in the chomskian original referred to "linguistic competence", a set of organized knowledge which consists of several sub-competences, the phonological, morphological, syntactic, semantic and lexical components (Belinchón, Mercedes, José Manuel Igoa y Ángel Rivière, 1994, p. 261).

FINDINGS

The discourse competence had to await until the communicative competence was broken into sub-competences to appear as a goal in FLT. However, there is not a total agreement about the analysis of the communicative competence. Munby defends a model with four distinct elements: "linguistic encoding", "sociocultural orientation", "sociosemantic basis of linguistic knowledge" and "discourse level of operation" (Munby, 1978, p. 70). One of the most relevant models of the communicative competence, Canale and Swain and Canale, took up this notion of communicative competence and distinguished four aspects of communicative competence: a. Grammatical or linguistic competence, which includes knowledge of the lexicon, syntax and semantics (mastery of language codes);

b. Sociolinguistic competence, concerned with the appropriateness of communication depending on the context including the participants and the rules for interaction; c. Strategic competence, a set of strategies devised for effective communication and put into use when communication breaks down (grammatical and sociolinguistic strategies); d. Discourse competence, which is concerned with the cohesion and coherence of utterances or sentences (Canale & Swain, 1980, p. 47). The discourse competence is, then, defined as “the ability of a user/learner to arrange sentences in sequence so as to produce coherent stretches of language. It includes knowledge of and ability to control the ordering of sentences in terms of: topic/focus, given/new, “natural” sequencing: e.g. temporal: He fell over and I hit him, as against I hit him and he fell over; cause/effect (invertible) – prices are rising – people want higher wages, ability to structure and manage discourse in terms of thematic organization, coherence and cohesion, logical ordering, style and register, rhetorical effectiveness, the “co-operative principle”(Canale & Swain, 1980, p. 60).

Thus, discourse competence can be seen as the ability to understand, create and develop forms of the language that are longer than sentences (stories, conversations, letters) with the appropriate cohesion, coherence and rhetorical organization to combine ideas. The study of the discourse competence owes discourse analysis and text linguistics the repertoire of notions, concepts and terms language teaching theorists may use to understand the role of discourse in language learning and teaching. There are many introductions to discourse analysis the reader may turn to for a more detailed account of that repertoire (Martínez Cabeza, 2002) but we would like to highlight here some important concepts which may help us deal with discourse competence instruction and evaluation. Llobera summarizes some important notions in relation to the discourse competence. He starts with the distinction between “discourse conveyed in the FLT classroom” and “discourse generated in the FLT classroom”, which calls our attention towards the fact that discourse competence is a dynamic procedural competence which is constantly in action during the teaching and learning processes. Then, he goes on commenting upon some important concepts in the field of relationships between participants: status (as exemplified in the use of forms of address), social roles, distance (as related to the categories of intimate, acquaintance and stranger), politeness and face, theme and rheme, new and given information, genre, turn-taking and repairing (Llobera, 1996).

Concerning the specificity of the discourse competence, a number of exercises have been suggested that could help the transfer from text to text. Madrid and McLaren describe the following activities: completing texts with missing words, open dialogues, completing a text by choosing the appropriate information from another source, building a text by choosing the most appropriate option in a multiple-choice format, role playing and simulating, finding mistakes and differences, filling in forms, memorizing and reciting a poem, a song, etc., analyzing and interpreting discourse elements (metalinguistic activity), punctuating texts, acting out, for instance, a joke, narrating events and expressing sequence with visual support, describing with visual support, transforming colloquial discourse into narrative discourse, and arranging sentences to form texts that describe processes (Madrid and McLaren, 1995). Pérez Martín points out some examples of exercises to develop the discourse competence: lexical cohesion devices in context (e.g. use of synonyms), grammatical cohesion devices in context (e.g. ellipsis, logical connectors, parallel structures), identify the clauses which has the thesis statement, oral discourse patterns (e.g. the normal progression of meanings in a casual conversation), link a paragraph with the following one, written discourse patterns (e.g. the normal progression of meanings in a formal letter), to be able to work out an introduction/development/conclusion of a piece of oral or written language.

The section “Assessment of the discourse competence” will deal with two main topics in relation to the evaluation of the discourse competence: criteria and procedures for evaluation. About criteria, we will focus basically on the Council of Europe’s Common European Framework of Reference for Languages. About procedures, we will concentrate on portfolios as a teaching and assessment device. The evaluation of the discourse competence is one of the most challenging aspects of language teaching. Parallel to the complexity of its definition, its evaluation requires from the teacher a global perspective on the learner’s communicative use of the language. Thus, the traditional predominance of grammar in our classroom, reinforced by the liaison among grammatical pedagogical objectives, grammatical interpretation of textbooks, grammar teaching in the classroom and grammar assessment (even if these are hidden behind a “communicative look”) is confronted by the change in perspective of the discourse competence. As Llobera states, “innovation in FLT is based on a model of language which is increasingly influenced by discourse concepts” (Llobera, 1996). Furthermore, the assessment of the discourse competence may be the factor teachers need to implement a real evaluation of the four skills through the use of texts. One of the more repeated criticisms about foreign language teaching in our educational system is related to the unbalanced presence of the

four skills in the daily practice and the evaluation procedures. However, the consideration of the discourse competence as a teaching goal may help to break the uneven use of written and oral texts, of receptive and productive skills. However, evaluating any competence is not a straightforward task. As the Council of Europe states in the Common European Framework of Reference for Languages, ‘unfortunately one can never test competences directly. All one ever has to go on is a range of performances, from which one seeks to generalize about proficiency. Proficiency can be seen as competence put to use. In this sense, therefore, all tests assess only performance, though one may seek to draw inferences as to the underlying competences from this evidence’. That is, the measurement of a competence is operated at three levels: performances are tested, proficiency is assessed and competence is, inferentially, evaluated. The same happens to the discourse competence.

If variety (of texts, of activities, of topics, etc.) is a must in language teaching, it is particularly important in relation to the discourse competence. Discourse competence is deeply related to the concepts of genre and register, both of which are the technical terms used to label variety in language use. Furthermore, the Common European Framework of Reference for Languages proclaims the importance of a variety of testing techniques: “It is increasingly recognized that valid assessment requires the sampling of a range of relevant types of discourse. For example, in relation to the testing of speaking, a recently developed test illustrates this point. First, there is a simulated Conversation which functions as a warm up; then there is an Informal Discussion of topical issues in which the candidate declares an interest. This is followed by a Transaction phase, which takes the form either of a face-to-face or simulated telephone information seeking activity. This is followed by a Production phase, based upon a written Report in which the candidate gives a Description of his/her academic field and plans. Finally there is a Goal-oriented Co-operation, a consensus task between candidates”. Thus, the evaluation of the discourse competence requires a device for continuous assessment using a variety of text types and skills. The portfolio may be that tool. A portfolio is a selection of some of the learner’s task outcomes so as to document and illustrate their progress and achievement. The portfolio is a dossier where the learner and the teacher can “watch” what was done at different periods of the learning process and, thus, it is a personal document collected by the learner with the help (and the feedback) of the teacher. Brown writes that ‘portfolios include essays, compositions, poetry, book reports, art work, video- or audiotape recordings of a student’s oral production, journals, and virtually anything else one wishes to specify’(Council of Europe, 2001).

CONCLUSIONS

Summarizing the above, it is necessary to say that discourse cannot be confined to any boundaries. These varieties of discourse definitions are the best proof for the describing discourse as the expression of thought through language. The study of naturally occurring connected sentences, spoken or written, is one of the most promising and rapidly developing areas of modern linguistics. Discourse and discourse analysis engage scientists in the exploration of texts and talk. Analysis of discourse data encourages scientists to reflect upon and critically evaluate knowledge acquired in the study of, for example, syntax and semantics as well as naturally drawing students to the investigation of socially-situated language use. Discourse is the opportunity to examine how meaning is constructed and negotiated in discourse and to reflect on the role that language plays in social life. Discourse also demonstrates us the relevant theories and ways how it can be guided in the application of these theories to real life language use. After this brief research it is understandable that discourse plays different roles in different social contexts that’s why it may have different meaning and relevance when it occurs in different situations and also this different situations and the context of discourse from the scientific view shows us the importance of studying and understanding the peculiarities of information structure of spoken and especially written discourse. Written discourse is not only permanent but also visible. An important consequence of this is that the writer may look over what he has already written, pause between each word with no fear of his interlocutor interrupting him. He may take his time in choosing a particular word, even looking it up in the dictionary if necessary. Written language makes possible the creation of literary works of art in ways comparable with the creation of paintings or sculpture. Speech, of course, retains functions which writing will never be able to fulfil, such as quick, direct communication with immediate feedback from the addressee. The speaker must monitor what it is that he has just said, and determine whether it matches his intentions, while he is uttering his current phrase and monitoring that, and simultaneously planning his next utterance and fitting that into the overall pattern of what he wants to say and monitoring, moreover, not only his own performance but its reception by his hearer. The view that written discourse and spoken discourse serve, in general, quite different functions in society has been

forcefully propounded by scholars whose main interest lies in anthropology and sociology. Taking into consideration the point about developing and using discourse competence in FLT classroom, we came to such results of our investigation: the discourse competence can be defined in relation to the most relevant models of the communicative competence. Then, a number of teaching procedures will be discussed to develop the discourse competence in FLT. Also, evaluation will be considered as an important aspect in the learning and teaching process, providing criteria and procedures to evaluate the discourse competence. Finally, some further issues related to the discourse competence will be studied which represent innovations for research and avant-garde language instruction. Goals, aims and objectives can help us make real the general purpose of language learning. In particular, that threefold distinction lies under the use of the communicative competence as the goal in language learning.

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Peripheral Studies of Muslim Identity in Islamic World: Malay Muslim Case Study

Muhammad Hilmi JALIL

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
hilmi@ukm.edu.my*

A'dawiyah ISMAIL

*Faculty of Islamic Studies,
Universiti Kebangsaan Malaysia
ada@ukm.edu.my*

Jawiah DAKIR

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
jawiah@ukm.edu.my*

Wan Zulkifli WAN HASSAN

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
wenzoul@ukm.edu.my*

Noor Aziah MOHD AWAL

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
naha@ukm.edu.my*

Siti Maheran ISMAIL@IBRAHIM

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
maheran@ukm.edu.my*

Fariza MD SHAM

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
farisham@ukm.edu.my*

Mohd Irfan MOHD TERIN

*Institut Islam Hadhari,
Universiti Kebangsaan Malaysia
irfanalhikmah@gmail.com*

ABSTRACT

Muslims are facing an identical crisis as the image portrayed by current Muslim community's life seems inconsistent or in contrary with the Islamic value. These conditions creating problem of identity crisis among Muslims, which is seen to be real and clear as shown through Islamic Index, the country that has been listed as the first, parallel to Islamic index is New Zealand of all countries worldwide while Malaysia has topped the chart of Islamic countries (OIC members) parallel to Islamic Index at the 38th place which means the country inhabited by Muslim is left far behind in Islamic values aspects. This paper tries to show the form of Islamic identity deviation and the current situation of Muslims identity that marginalizes the Islamic value. The methodology used in this paper is qualitative, in which data about the marginalization of Islamic value in performing today's Muslim identity is based on data obtained from research report, academic papers, journals, books, magazines and newspapers. The results showed the Muslims identity are faced with faith problems, where faith had not been able to be the driving force to the Muslim behavior, but faith is also not able to be a barrier of sin or evil.

Key words: Identity, Image, Muslim, Islamic values

INTRODUCTION

Muslims come from the prophetic era of the Prophet Muhammad, beginning from Mecca, evolving into Medina until the foundation of the hearts of Muslims throughout the world. The early history of the emergence and development of Islam shows the essence of the Muslim identity formed through the appreciation of Islam embedded in every Muslim. The formation of Muslim identity is important in Islam, but Islam is the indicator of the identity of the Muslim community. In general, Islam is built into three main components, namely Islam (Way of life), Faith (Belief), and Ihsan (God Conscious) (Muhammad Noor Ibrahim et al, 1995). These three components are embodied in the primary sources of Islam and agreed upon by Islamic scholars who exist in the history of Islamic civilization (Nasruddin Yunus et al., 2014). The Muslim community built Islamic civilization since about 600 years (Hillenbrand, 2015) by integrating the components of Islam, Iman and Ihsan. Similarly, with the process of establishing a Muslim identity, the identity is formed through Islam, Iman and Ihsan of the Muslim (Mohd Yusof Othman, 2013).

Islam as stated in its primary source of Quran and Sunnah (Qamihah, 1984), is a religion of peace, this statement was also agreed upon by Muslim scholars (Mohd Zin, 1997). The statement also implies that a Muslim (Muslim person) must have a good identity or identity that gives rise to the benefits of goodness and well-being. According to a study conducted by Lori Peek (2005), the identity of a society can be formed and changed into three situations, first starting with the establishment of a religious identity that is attributed to one's self as a child who is influenced by the life of parents and guardians. The second is followed by the creation of a person's own identity, at this stage, one not only accepts the identity that is attributed to one's self as a child, but the person will establish his identity based on his own thoughts and lives. Having chosen identity in itself, the identity will be strengthened by continuing to learn the deepening of religious knowledge, while maintaining the identity it possesses from being determined or altered by outside elements.

After more than 1400 years, today the number of Muslims grew larger than the early days of Islam. With today's total number of Muslims worldwide 1.6 billion people (Drew and David, 2017) is undoubtedly a big challenge to different Muslim identities in one place with different places and different from time to time. If observed in the current reality of the Muslim community, it may be noted that today's Muslims are faced with a crisis of identity critique, where the images born out of the lives of Muslim societies today seem to be irrelevant or contrary to the value of prosperity. The situation reflects the continuing evolution of Muslim identity in the future, which will change and evolve to create a crisis of identity diversity among Muslims.

The problem of the identity crisis of Muslim societies seems to be true and clear, as demonstrated by the results of the Islamic Index study conducted by Rehman, SS and H. Askari (2010), where in that study, the country ranked first in line with the Islamic index is New Zealand, the Muslim nation (OIC member) in the first position in parallel with the Islamic index is Malaysia, ie at thirty eight (38), this means the country inhabited by Muslims far behind in the aspect of Islam, on the contrary the country inhabited by the people Non-Muslims appear to be higher in terms of their Islamic values degree. From the data of the study, it can be stated that the reality of development of Islamic civilization which continues today is reflected in the living condition of Muslims living in the condition of Islam, especially in the form of life systems. Ironically, a non-Muslim community who does not know and does not understand what is meant by Islam, has been viewed more closely with the practice of Islamic values.

From the above data, an interesting and important point of view is the position of Malaysia as the first and highest Islamic state of the country. What is significant is Malaysia as a country located in the Malay Archipelago, not the first country to accept the influence of Islam, nor the pure state against the origin of Islam (Wan Abdul Kadir, 2002), but Malaysia has won the first position among Muslim countries (OIC members). While the Arab world countries are well-known as the earliest Islamic beneficiaries and are purer than Malaysia, have been left behind in the positions provided by Rehman, S. S. and H. Askari (2010) above.

THE STUDY

Based on the above issue, the Muslim identity discussed in this paper focuses only on the Muslim community in Malaysia. While the track used to view and measure the identity of the Muslim community is based on the identity formed through the Islamic history, as determined by the Prophet Muhammad. Which defines the elements of Islam, Iman and Ihsan as the essence of the essence and support of every Muslim's identity. These three elements are integrated and appreciated by the term Islamic faith.

Al-Qaradawi (1997) gives 4 specific features to the Islamic faith. The first of these creeds must come from the understanding of the sensible mind, the basis of that understanding is based on the maximal divine revelation. Secondly, once understood, the belief must be believed strongly and will not be broken or impaired by any form of suspicion. Thirdly, after being believed with absolute certainty, the faith must be followed by the obedience of the heart and surrender to execute all the commands of Allah and abandon all the prohibitions of Allah without any objection. Fourth, after the accumulation of all three of the above, the owner of the faith must be eager to carry out all instructions with all the abilities.

The four characteristics of this creed will be a gauge in assessing the status of the identity of the Malaysian Muslim community, discussed in this paper. Therefore, this paper attempts to present the empirical data of the practice of Malay society as measured by the four characteristics of the Muslim faith above.

FINDING

When viewed from the aspect of Islamic history, during the time of Mecca, when Islam was very foreign in the Arab world, the Islamic teachings conveyed by the Prophet only revolved around the formation of a Muslim faith, such as believing and dying, not associating God, believing in the hereafter and Etc. In fact, the formation of the Muslim community of Mecca does not touch the aspects of sharia such as prayer, fasting, zakat and so on. Sharia affairs, just set and developed in the next era of the establishment of a Muslim community in Medina.

The formation of Islamic creeds in every Muslim in Mecca created a very strong Muslim community in their faith, without changing even though challenged or tested by various challenges and all kinds of threats. This is evident through the existence of a series of tortures of early Muslims during the time of Mecca (al-Buti, 1999). All of these events show that the faith of early Muslims in Mecca was strong, strong and steady, so that the faith could not be condemned and even kept in such a neat and intact manner, despite the numerous threats and challenges that could jeopardize security and their lives.

The result of the true and steadfast Islamic faith has given the peaceful and harmonious Medina community. Religious affairs which involve the special relationship between man and his creator that God is executed well and neatly, for example, the event when Saidina Umar al-Khattab drank wine and at that time, he recently realized the ban of wine was revealed by Allah, then Umar Continued to dump the wine without any objection and was willing to do so (Majma 'al-Buhuth al-Islamiyyah bi al-Azhar, 1992). While the affairs of human relations are peaceful and harmonious, for example, the events of the muhajirin are willing to give up all the possessions that they possess during the process of promoting Muhajirin and Ansar (Jawiah Dakir, 2008). All of this happened after the Islamic faith which was owned by the Muslims when it was held very strongly and steadily, this event also became a translation of the early faith of the early Nation of Islam (al-Buti, 1999).

One of the community groups formed with a strong Islamic faith in the early days of Islam was the youth. They also hold firmly with their Islamic faith. The faith of the adolescent when it is able to move or strive to be the factor that drives the teenager to do something. For example, the event of Saidina Ali Karramallahu Wajhah dared to risk his own life by replacing the Prophet in his bed, while at the time the bed was replaced, the idolaters were neatly designed to kill him. But Saidina Ali survived because His blanket was thrown first and the sleeping man was not a prophet. From this incident, it is understandable that a teenager named Ali is willing to risk his life because of his Islamic faith. The faith could have been a driving force for Saidina Ali to replace the Prophet's bed that might have been killed when Saidina Ali slept on the bed. Examples of such reality prove the faith that Ali's teenager possessed could be a driving factor for Ali's actions.

This shows that the Islamic faith which is owned by the early Muslims in Mecca on the other hand in Medina is a solid faith, unable to be compromised, and even the faith of the faith is capable of producing good behavior among Muslims (Zakaria Stapa 2001). This was a great impression on the life of the society at that time.

Hence, it can be understood that the spine of a Muslim's identity is an Islamic faith. Every Muslim is obliged to maintain their faith; the faith also plays a major role in forming a whole Muslim way of life. Owned Islamic beliefs have the driving force or repulsion of a Muslim to do something. Therefore, the example of the adoption and preservation of the faith which was practiced in the early days of Islam should be the follower of the Muslims throughout the ages.

Speaking of Muslim society today, especially in Malaysia, the Islamic faith brought by traders and Islamic preachers, has been accepted for a long time by Malays throughout the Malay Archipelago (Wan Abdul Kadir, 2002). In Malaysia, Islam is embodied in the Federal Constitution of Malaysia as a federal religion. Today, part of the Islamic system has been applied in Malaysia's administrative, financial, banking, business and legal

affairs. This can be seen through the implementation of the Implementation Policy of Islamic Values, the National Integrity Plan, the Islamic financial and banking system, the Tabung Haji, the zakat, the halal certificate rating and so on.

However, with all forms of Islamic religious development in Malaysia as described above, the identity of the Malaysian Muslim community is confronted with the problem of faith. The Muslim faith in Malaysia is not strong and shaky, in which the faith is incapable of being a force or a driving force for goodness and obedience to God in all manner of conduct. The severity of the social phenomenon among Muslims in Malaysia today (Zainudin Sharif and Norazmah Mohamad Roslan, 2011) reflects that their faith is in a weak and problematic situation, and it is difficult to be a driving force to practice obedience to God and to avoid all the prohibitions of God. For example, social illness called Mat Rempit (Rozmi Ismail, 2008), full of immoral and destructive practices has become a popular phenomenon among Malaysian Muslim teenagers, these negative symptoms make them involved as Mat Rempit feel proud and passionate as a mat (Muhamad Fuad Bin Abdul Karim, Rokiah Ismail and Mohamad Fauzi Sukimi, 2009). This means that Mat Rempit is proud and eager to commit immorality and is far from obedient as a servant of God. More seriously, the faith can change to a hold on other beliefs. It has been warned by recent silver mufti by calling on all parties to unite to curb the movement believed to convert Malays in Malaysia until the number of apostate Muslims reach hundreds of thousands (Sayed Hesham Idris 2016). The Muslim phenomenon of Malaysia changed the faith due to the fragility of the faith which resulted in the deviation of faith and apostasy (Jawiah et al 2011, Helwa and Jasri 2013), athies, liberalism, pluralism, secularism, and various deviant teachings (Zakaria Stapa, 2016).

It can be concluded that the Muslim faith in Malaysia is not strong, this statement is measured according to at least two conditions. First of all, in view of the characteristic of al-Qaradawi's faith, a review of the life of Muslim Malaysians today is that their faith has not been steady because they have not been able to be a trusted belief with a dead knot and will not be able to be sued. This can be seen in the apostasy phenomenon among Muslims in Malaysia, the number of thousands of apostates showing Malaysia's Muslim faith in a fragile and dangerous state. The faith is easily broken down when tested and challenged with current challenges such as romance and other religion. Secondly, the Muslim faith of Malaysia today is unable to become a force to obey God's command and abandon all the prohibitions of Allah. Malaysian Muslims are not able to refrain from being influenced by religious teachings other than Islam which eventually became influenced and accepted teachings other than Islam. If analyzed in more detail, generally the belief that it possesses is very difficult to be a repudiation to the owner in order to rage and earnestly devote to obedience to Allah SWT. Compared with the early Islamic faith of the Muslim Nation, the Muslim faith of Malaysia today is far different and is in a state of disrepute. In Malaysia today, it is difficult to find people like Saidina Umar al-Khattab and Saidina Ali as described above.

CONCLUSION

Refers to the perspective of Islamic creed, the Islamic identity in the Malaysian Muslim community today is faced with the phenomenon of Islamic marginalization in life. If left untouched, this problem will also contribute to the formation of a more complicated Malaysian future further farther from the claims of Islam. Hence, the development of Islamic identity towards the Muslim community in Malaysia needs to be strengthened from time to time so that the Islamic faith is really strong and inherent in the owner of the Islamic faith itself.

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Physical Activities and Special Education. A Case-Study With Autism Spectrum Disorders Students

Laura Sara AGRATI

DidaSco Project - University of Bari Aldo Moro

Italy

laurasara.agrati@gmail.com

Francesco FISCHETTI

University of Bari Aldo Moro

Italy

francesco.fischetti@uniba.it

ABSTRACT

Since Convention of ‘Sport in the United Nations Convention on the Rights of Persons with Disabilities’ (2007) elaborated a ‘multi-faceted’ framework for implementation, sports and physical activities - in the school context

- has been used to promote social equality and self participation of students with disabilities (European Council, Erasmus+ 2014/2020). Among traditional school practices, sports and physical activities are often connected to leisure and expressivity activities, providing only the body-material component. However, the Italian latest curriculum reforms (2007 and 2012) have highlighted the social competences related to sports and physical activities, although about the support function of physical activity to learning processes, especially in case of disabilities, there is much more to discover.

The paper presents the design-research, methodology and early results of an exploratory case-study, accomplished at the University of Bari. According to neuro-didactics studies and using the heuristic tool of active and bodily *mediation*, aimed:

- to investigate the mediation function of physical activities included within the interventions programs for student with Autism Spectrum Disorders (ASD) supporting the related learning processes;
- more specifically, to test the efficiency of ‘iconic visualizers’ (Kozhevnikov et al., 2005) – as video-modeling and flashcards - supporting the didactical communication and the understanding of motor activities performance.

INTRODUCTION

Physical activity is a key determinant of health across the lifespan and it has been recognized as an important factor to the learnings of students (Kohl & Cook, 2013; Casolo, 2017). It is well-known the importance of sports and physical activities for the development of personality of children and adolescents (Stodden et al. 2008; Lubans, Foster, Biddle, 2008), the preservation and efficiency of integrity and psycho-physical balance in adulthood, the prevention of aging and maintenance of autonomy in the senility (ACSM, 1998).

Movement is the first instrument of knowledge and relationship that the person uses (Ripoll, 1991; Newell & Vaillancourt, 2001). Through the body perceptions and movements, the child begins a great process of identification with respect to the environment, goes progressively from dependence to autonomy, expresses its own needs, responses, emotions (Vayer & Toulouse, 1982; Chunlei & Buchanan, 2014). Physical activity assumes the role of mediation for the emotional and cognitive development of children and young persons: through the performance of motor actions, reciprocal relationships are established between the motor, cognitive, emotional and social functions, so that the various motor experiences - through bodily expressiveness, play, and sport - become mediating factors for the development of mental processes, emotions, and interpersonal relationships (Colella, in Sibilio & D’Elia 2017).

Within a new ‘paradigm’ that looks at the relationship between physical and material (Thompson, 2005) and according to Embodied Cognition and Enactivism Science (Varela, Thompson, Rosch, 1992; Clark, 1997; Barsalou, 2008; Thompson, 2007) and looking on the second-generation cognitive sciences open to phenomenological reflections and neuroscience studies (Jouen et al., 2015), body and motor activities are considered as mediators between the *self* and the external reality, allowing the structuring of balanced relations between the areas of the person, the foundation for the promotion of individual health and well-being (Chunlei & Buchanan, 2014). The functionalistic approach and traditional distinction between perception, cognition and action were overcome and an idea of non-symbolic but very rooted in the sense-motor system cognition have been supported (Sibilio, 2013; Paternoster, 2010).

Linking traditional instances and innovation elements, a ‘scientific acknowledgment’ recognition of the body and movement function into the educational and didactic processes has been given (Sibilio, 2012, p.331). Since each motor and movement experiences promote multiple learning outcomes – from the cognitive, emotional and social development point of view, promotes the learning of topological concepts, problem solving, self-efficacy and social and relational skills (Lubans, Foster, Biddle, 2008; Colella, in Sibilio & D’Elia, 2017) - the

educational interventions - in formal as much as informal contexts, in normal and special needs - can not fail to consider the motor and physical activities (Bailey et al., 2006) in order to realize specific and ‘personal’ development (Perla, in Sibilio, 2017).

THE STUDY

Since Convention of ‘Sport in the United Nations Convention on the Rights of Persons with Disabilities’ (2007) elaborated a ‘multi-faceted’ framework for implementation addressed to students with disabilities in the school context, sports and physical activities has been used at first to promote social equality and self participation. In Italy, in accordance with European Council programs (Erasmus+ 2014/2020) and the latest curriculum reforms (DM 31 luglio 2007; DM 254/2012), among current educational practices, *in* and *out* of school, sports and physical activities are often connected to leisure and expressivity activities, providing mainly the body-material component and the social competences (Smith, 2002; Vazou et al., 2017).

According to neuro-didactics studies (Hebb, 1980; Kandel, Schwartz, Jessell, 2000; Sousa, 2010; Rivoltella, 2012), using the theoretical concept of *simplicity* (Berthoz, 2012; Sibilio, 2013) and an ‘heuristic tool’ of active and bodily *mediation* (Sibilio, 2011; Damiano, 2013), the exploratory case-study (Stake, 1995) is being realized at the University of Bari: the data collection has been carried out as an observatory study during the Master's internship (2013/2014); the analysis of data is still ongoing. Through a ‘mixed-method design’ (Creswell, 2003 – fig. 1) the study aimed:

- to investigate the mediation function of physical activities included within the interventions programs for student with Autism Spectrum Disorders (ASD) supporting the related learning processes;
- more specifically, to test the efficiency of ‘iconic visualizers’ (Kozhevnikov et al., 2005) – i.e. video-modeling and flashcards – used as didactical communication ‘tools’ in support of students’ understanding and performance of motor activities.

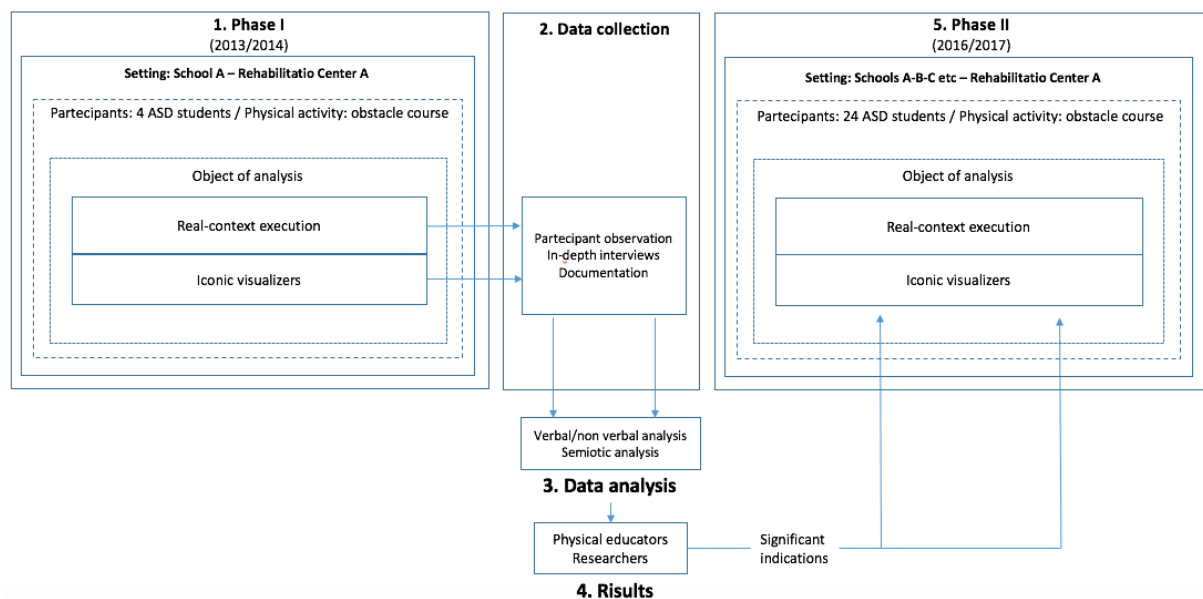


Fig. 1 – Design of research

Data collection and data analysis through a mixed method (participant observation of activities; in-depth interviews of physical educators; documentation) and a triangulation (Denzin, 2006) of verbal/non verbal and semiotic tokens (see fig. 1).

The background intervention program refers to TEACCH treatment (Mesibov, Shea, Schopler, 2004; Virsues-Ortega, Julio, Pastor-Barriuso, 2013) and, according to a ‘personalized’ approach (Perla, 2013; in Sibilio, 2017), it is implemented through the coordination of actions carried out at school and in the rehabilitation center, both attended by the ASD students involved in the study.

In the first exploratory phase of study, carried out in 2013/14, the study involved four ASD students, three male and one female, each of 9 years old, attended two different schools and the same physical activities program in the rehabilitation center. The prerequisites for participating in the study were previously being assessed at the same verbal languages and movement skills level (PVCL, Rustioni & Lancaster, 2007; Test of Gross Motor Development-2 - TGMD-2, Ulrich, 1985-2002; Burton, 1998) and history of acquiring skills with teaching procedures that included physical prompting.

The starting hypothesis is to demonstrate that through the use of ‘iconic visualizers’, within an appropriate

motor-educational intervention, it is possible for students with ASD to improve the performance of the exercise – i.e. the obstacle course –, observed by increasing the executive parameters and the summative assessment expressed by physical educators – not directly involved in the survey – at the end of a training program of 5 physical education lessons (at school) and 5 activities (in the rehabilitation center). The assessment tool was inspired by the Basic Movement Performance Profile – BMPP (Western Australia Department of Education, 2013), translated and adapted in the Italian version (see USR Reggio-Emilia, 2009). The experimental pair (EP) followed a structured protocol as:

1. Cognitive Activation Step (mnemonic and mime/movement revision of the program supported by ‘icon visualizers’)
2. Motor Activation Step (stretching exercises and moderate motor activity)
3. Training Step (three-times repetition of exercise, alternated with the companion and supported by ‘icon visualizers’)
4. Cool-down Step (stretching exercises, lashing and respiratory control)

Both experimental pair (EP) and the control pair (CP) performed the same number of lessons. The control pair (CP) attended only the following three steps: Motor Activation Step, Training Step without the support of ‘icon visualizers’ and Cool-down Step.

Although during the obstacles course activities, several mediators have been unavoidably used to enhance the didactical communication and the understanding of ASD students – adult/peer tutor modeling (Clinton, 2015), verbal prompt (Chabani & Hommel, 2014) – only the ‘iconic visualizers’ (Kozhevnikov, Hegarty, Mayer, 2002) has been analyzed. The typologies of these are various – gross motor movement cards (see fig. 3, a.), schoolbook images – taken by specific and professional tools or belonging to a personal physical educator ‘thesaurus’ (Agrati, 2017).

FINDINGS

The following results refer exclusively to a) the quantitative dimension, based on the executive parameters and the summative assessment expressed by physical educators; b) a specific aspect of qualitative dimension – the early semiotic analysis of ‘iconic visualizers’. The whole study will be accomplished later, with the analysis of in-depth interviews of physical educator. The assessment of the basic movement performance focused on 4 of BMP skills: balance on a foot (BF), line walk (LW), forward roll (FR), run (R), jump for distance (JD).

Results concerning the quantitative dimension are elaborated in three steps and refers to each skill: a. score differences (numerical delta) of ratings pre-post of EP (ΔEP) and CP (ΔCP); b. increase of EP (ΔEP) net of ‘exercise effect’ – the increase of CP ($\Delta EP - \Delta CP$) – in order to evaluate the real ‘experimental effect’; percent increase of EP net of the ‘exercise effect’. Considering both pairs ($n = 4$, EP + CP), at the end of the analysis of ratings net of the ‘exercise effect’, an average increase 0.9 scores emerged in EP, respectively for BF (0.75 – 30%), LW (1.5 – 60%), FR (0.5 – 20%), R (1.75 – 70%), JD (0 – 0%).

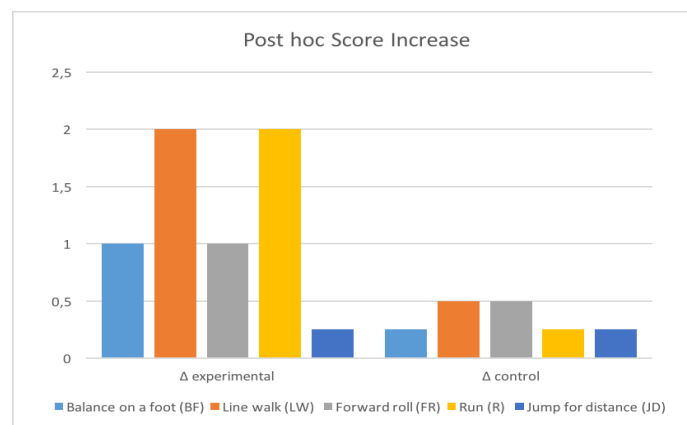


Fig. 2 – Post hoc score increase for each skill of training program

The Basic Movement Performance (2013), adapted in the Italian version, with respect to the sample tested, has proven to be a quite effective performance measurement method, quantifying both the overall result of the data and the skills that have been taken into consideration. Although the study, from the experimental point of view, has a limited number of students, as a critical element, however an indicative value of the ‘experimental effect’ (0.9 – 36%) has been obtained. Beyond the average increase, the diversification by skill – max. in ‘run’ (R), min. in ‘jump for distance’ (JP) – is to be note.

This quantitative data confirms with due ‘caution’ (Breslin & Rudisill, 2011) the efficiency of ‘iconic visualizers’ supporting of physical activities for ASD students. As studies with ASD early child (Bremer & Lloyd, 2016; Liu & Breslin, 2013), ‘results indicated statistically significant differences between protocols,

while post hoc tests indicated that the picture task card condition produced significantly higher gross motor quotient scores than the traditional protocol' (Liu & Breslin, 2013, p. 347). Therefore, it would be interesting to carry out a study to verify the real differences in the use of iconic 'mediators' - as picture task card - due to the age of students (early childhood and childhood).

This suggests further research - broader samples, skills-specific analytics - in order to give more precise answers. The indicative results and previous studies (Agrati, 2016; 2017) induces the investigation into its qualitative dimension through the specific analysis of 'iconic mediators', used in supporting the physical activity programs of ASD students. This second step is taking place on a larger sample (24 ASD student - age: 7-11 - and 24 ASD adults - age: 18-30; involved in the same training program). The following semiotic analysis (Nikolajeva & Scott, 2013) has been carried out on the 'iconic visualizers', used in the training program, and it refers only to the icon of 'jump for distance' (JD), whose ability has not increased.

Comparing three 'iconic visualizers' - see fig. 3, a. used in the experiment; b. adapted from Gross Motor Movement Cards (AfA, 2017), c. used in the study of Breslin & Rudisill (2011) - graphical and textual differences can be distinguished.

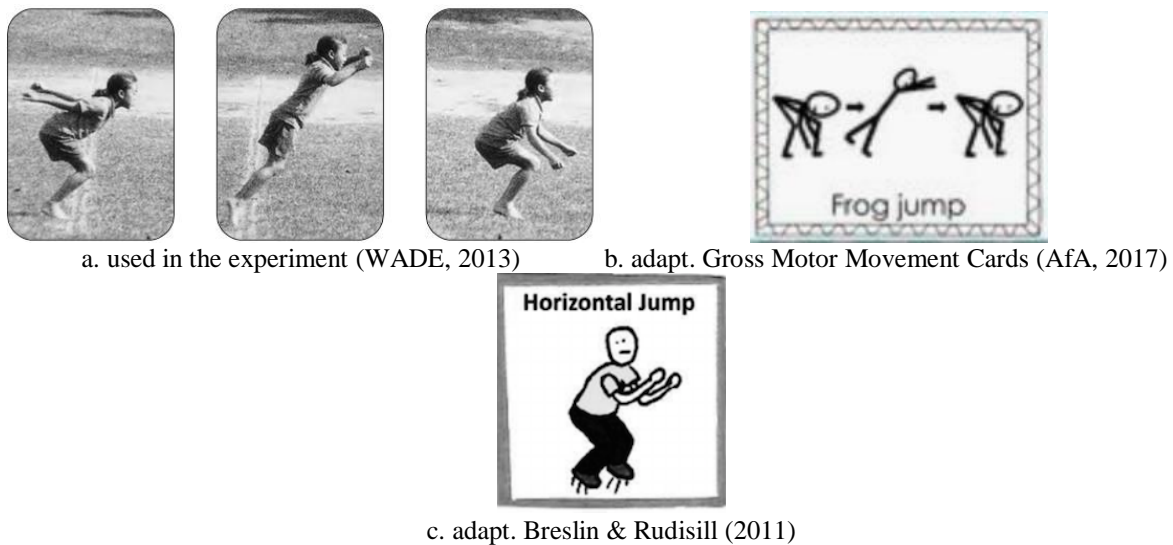


Fig. 3 – 'Icon visualizers' analyzed

The image a. is a 'picture' that reproduces a realistic situation - a jumping child - and it is articulated in three sub-pictures that express the effect of movement. The image c. is an 'icon' (Peirce, 1931-58; Eco, 1975) that represents an essential character performing a jump. It's articulated, as the image a., in three sequences and the effect of the movement is further highlighted by the directional arrows. The image c. is, also, an 'icon' that reproduces an essential character. It is not articulated in sequences. In the image a. there are no verbal elements, in b. 'Frog jump', in c. 'Horizontal Jump'.

The communicative effectiveness of these three images is not testable using only theoretical tools. For this reason, in order to verify if the different features of the 'iconic visualizers' have effects on the ASD students understanding and performance, in the second phase of this study a further experimental analysis will be carried out on them.

CONCLUSIONS

As known and widely accepted (Billingsley & Rome, 1983; Libby et al., 2008; McKay et al., 2014), according to the behavioral approach, there are four procedures for transferring stimulus control from response prompts to natural stimuli (see 'Prompt Hierarchy as Applied Behavior Analysis approach'). In general, in order to providing the performance of ASD student, this study is confirming that verbal prompts need to be integrated with images, in physical activity as well. Although this is known (Liu & Breslin, 2013), however, it would be useful to better analyze the iconic mediators in detail because - as emerging from the survey - their features may have an effect on the learning and performance of ASD students.

The idea of teaching as a 'complex adaptive system' (Sibilio, 2014) is once again confirmed: in order to meet individual differences and recognize the potential plasticity of the neurological system, teaching is 'adapted' to the personal forms of knowledge, skills, attitudes and behaviors (p. 78). From this perspective, on one hand, the teachers are called every day to explore the different and specific apprenticeships of students and to identify eventual methodological 'deviations' (Sibilio, 2017) that respond to different educational needs; on the other hand, the researchers should believe in an *in progress* knowledge and be always available to further deepen the obvious.

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Policy Analysis on the Use of an E-learning Platform at a Higher Education Institution

Ain Nurhazifah JASMEI

Cassandra Siaw Yung CHIN

Joanna Suk Shin LIM

Pei Fun LEE

Norain Awang Damit @ HARUN

Azaharaini MD JAMIL

Masairol MASRI

UBD School of Business and Economics, Universiti Brunei Darussalam

Masitah SHAHRILL

Sultan Hassanah Bolkiah Institute of Education, Universiti Brunei Darussalam, Brunei Darussalam

ABSTRACT

Learning Management System or LMS are very widely used in most higher education institutions. Change management is crucial in determining its successful implementation when adopting an entirely new LMS for the university. The objective of this study is to evaluate the adoption of an e-Learning platform Canvas in one of the universities in Brunei Darussalam. We used the Policy Analysis Process which comprised of the six main stages from verifying, defining and detailing the problem; establishing evaluation criteria; identify and then evaluate alternative policies; followed by displaying and distinguishing among alternative policies, and the final stage consisted of monitoring the implemented policy. We also explored the different types of LMS available, and identified the challenges after the implementation of using Canvas in the university.

Keywords: Learning Management System, Higher Education, Policy, Challenges

INTRODUCTION

Learning Management Systems or LMS are very widely used in higher education. Some of the perceived benefits are the capability to provide a centralized learning, ability to track and report features, evaluate capabilities, ease of upgrading and its simplified learning process. Centralized learning offers the combination of several activities including the development content of training and performance derived from a single source. Watson and Hardaker (2005) stated “web-based intelligent tutoring systems, aimed at compensating for the absence of a real world tutor have to date mostly concentrated on providing assistance in a particular subject domain and not focused on the problem of utilising content represented as learning objects across multi-subject domains” (p. 56). In the case of successful implementation, LMS further enhances the knowledge and skills of the users, it reduces time for the learning and professional development in terms of efficiency and effectiveness, and ultimately drive towards achieving the set targets and goals (Little, 2015).

The use of an LMS platform known as Canvas has since been made mandatory in one of the universities in Brunei, from the time of its implementation in recent years. Canvas is a cloud based LMS, an enterprise software by Instructure (Canvas Instructure, 2017a, 2017b). A study conducted locally in the teaching and learning of Sociology using Canvas reported satisfactory improvements in the writing skills and generated positive interests by high school students (Lamit et al., 2017). Canvas was first introduced as a pilot test in one of the faculties in the university. Canvas was adopted in the university due to its features in ease of learning which increases efficiency for every stakeholder in terms of administration management, and most importantly the study process and progress of the university's students. Since its implementation, there's no mandatory requirement for both the staffs and students to use the Canvas LMS in the university. However, only emails are sent upon instructions to all staffs and students. The stakeholders who are involved in the implementation of the university's Canvas LMS include the senior management team of the university, the focal persons from each faculty/school/institution/centre of the university coined as the Learning Technology Advisors (LTA) and the Canvas helpdesk personnel at the ICT center.

Technology is only ever evolving and therefore change can be inevitable. Planning and implementing a change can be difficult as not all changes are going to meet everyone's expectation. Hence, it is crucial that change is managed as much as possible. When it comes to the adoption of an entirely new learning management system for the university, change management is crucial in determining its successful implementation. As stated by Burnes (2003), organizations may miss out on opportunities for organizational improvement if management development is not integrated with organizational change. In other words, leadership ultimately determines whether change management is successful. Many studies have mentioned the importance of leadership in managing change. The main obstacles towards effective organizational change has been explicitly identified by

Hoag et al. (2002) as poor leadership, weak management and organizational culture. Brown et al. (2016) have also found a commonality among the studies that have been made on the methodologies of change management. One notable commonality is the relationship between leadership and management. Additionally, Edmonds (2011) noted that managers and leaders should be picked based upon their skills and level of commitment rather than the level of hierarchy.

Kotter's (1996) guide to successful change entails the organizational leaders creating 'a sense of urgency' among the organization to adopt the changes, to develop a vision and a strategy for the change and to communicate this change vision to the employees, all of which requires good leadership to achieve. Edmonds (2011) have also mentioned the importance of having a clear and concise communication with the management and stakeholders before planning the implementation of a change. Furthermore, Manning (2012) has summarised the key theories for a successful implementation of change to five points; communication, having a good and clear set of starting ideas, those who are involved need to be committed from start to finish, having plenty of resources to keep the planning and implementation of change going, and develop a detailed implementation plan.

The key findings of IBM's 2008 Making Change Work Study conducted with 1,532 participants determined that most CEOs believe that they themselves as well as the organization implements change poorly and only a handful others believe themselves and the organization to be successful in these implementations (Jørgensen et al., 2009). In the study, project leaders established that successful projects are infrequent where nearly 60 percent of them failed to completely realize their objectives whereas 15 percent have reported to completely miss all the objectives or have had management discontinue their project. The most successful segment of the participants are the 20 percent of participants who are able to successfully hit their targets within time and budget with a recorded 80 percent success rate; also known for being Change Masters, leaders who are able to execute effective change management.

Notably ineffective change management may lead to higher costs and expenses such as the waste of money in implementing Canvas if less than half of the stakeholders are using it. There is also the issue of lost opportunity for the stakeholders in utilizing the features of the application which has the potential to enhance the quality of learning. The Change Masters in the above study has identified several fundamental barriers towards change with 58 percent voting for difficulty in changing mindsets and attitudes and corporate culture at 49 percent. When it comes to the what makes change successful, 92 percent of participants believe that top management support for change is fundamental in executing successful change. Meanwhile, 72 percent of participants believe that employee involvement in decision making is another key factor, whereas honest and timely communication is agreed by 70 percent of the participants and finally an organizational culture that encourages change within the organization is another critical area that will determine the success of change management and execution.

METHODOLOGY

The following are the objectives of this present study:

- To evaluate the adoption of an e-Learning LMS platform Canvas in one of higher education institutions in Brunei known as Universiti Brunei Darussalam (hereafter referred to as UBD), with the use of the Policy Analysis Process which comprised of the six main stages from verifying, defining and detailing the problem; establishing evaluation criteria; identify and then evaluate alternative policies; followed by displaying and distinguishing among alternative policies, and the final stage that consisted of monitoring the implemented policy.
- To explore the different types of LMS available.
- To identify the challenges after the implementation of using Canvas in the university.
- To recommend any areas of improvement on the use of Canvas in the university.

This study made use of both qualitative and quantitative methods to obtain data and information in which an interview was conducted with the main administrative person in-charge overseeing the progress on the use of Canvas LMS at the university. The interview duration was about 90 minutes.

In analysing the policy for this study, we adopted the 6-steps policy analysis process by Patton and Sawicki (1986), which are:

1. Verify, define and detail the problem.
2. Establish evaluation criteria.
3. Identify alternative policies.
4. Evaluate alternative policies.
5. Display and distinguish among the alternative policies.
6. Monitor the implemented policy.

Verifying, Defining and Detailing the Problem

The current teaching and learning experience were hindered from evolving by some problems within the institution. These are the major problems that need to be addressed through the implementation of a certain change or policy.

Firstly, prior to this study, the LMS used throughout the campus is not standardized. There is no one LMS that is being used by all faculties, which implied that different faculties are using different LMS. This makes it seem like the faculties within UBD are working differently from each other and there is no sense of integration among them. Furthermore, this also means it would be more difficult for the management team to monitor the different LMS used.

Secondly, UBD has a vision to be ‘a first class international university’ and this is considered the major vision for the institution (Tan & Shahrill, 2015a, 2015b; Tan et al., 2016, 2017; Hanafi & Tong, 2017). One of the many challenges in achieving this vision is to incorporate more technological advancements that can further aid lecturers and students to have much better teaching and learning sessions. Additionally, as more and more institutions are becoming more conscious about the environment, it is also a good move to increase the use of paperless learning materials.

Thirdly, it was also mentioned in the interview that there is a lack of interaction between lecturers and students. While some students prefer to have discussions with their lecturers face-to-face, it can sometimes be difficult to do so as lecturers can be very busy with other administrative work. As a result, there is no ideal time and/or place to do the discussions. On the other hand, there are also students who actually prefer to talk or discuss with their lecturers through online platforms, for example via email. Hence, there needs to be a better platform where the different needs of both the lecturers and students can be met and where activities, such having a group discussion or an online quiz can be done more comfortably, at any time convenient to both parties.

And fourthly, lecturers are unable to monitor their students’ activity or learning behavior outside the lecture or class. Lecturers are only able to monitor students’ activity when they are in lectures but not beyond the lecture room. This problem also ties in with the previous problem. Being able to monitor the students’ activity or learning behavior such as when the students are accessing lecture notes or learning materials, or when they are actively participating in a group discussion, would be beneficial for the lecturers to identify the different needs and learning behavior of their students.

Establishing the Evaluation Criteria

In order to choose a policy, alternative policies need to be examined. Before any form of evaluation is done, a set of criteria needs to be established in order for the alternative policies to be weighed and compared. These criteria include the following.

Cost – Budget in the implementation of a new system can be allocated and the amount of budget invested needs to be able to make a sustainable change in the future.

Benefit – The policy needs to benefit all relevant stakeholders. If a system is widely used by all staffs and students, this will mean that the system is beneficial; not only to those who are using it but also to those who have invested their time and effort in making sure the system is successfully implemented.

Administrative ease – The policy needs to be implemented and monitored easily for further improvements.

Effectiveness – The policy needs to be able to meet the stakeholders’ requirements. The LMS needs to be able to be used to deliver lectures and teaching materials easily and effectively, ensuring a smooth learning process.

Political acceptability – This refers to the level of acceptance of the policy by all stakeholders.

Time to implement – In the case of implementing a new learning system, there needs to be ample time to do some in-depth research on the system first before it can be used by all. Additionally, all staffs and students would require some time to familiarize themselves with the new system. Hence, implementing the policy incrementally is the best way as learning management system can be quite evolving over time as well.

Technical ease – The policy needs to be compatible with the existing infrastructure within UBD and that there are technical skills available to cater the needs of the system.

Identifying Alternative Policies

Before settling on which policy we want to implement, we need to identify alternative policies in order to compare and evaluate so that a reasonable or rational decision can be made afterwards. There is not much alternative when it comes to teaching and learning experience through the use of LMS, other than choosing a different or a better LMS. In this case, we have two options; we can either stay using the current ones (the non-standardized LMS) or we can move to using a better system that can be used campus-wide (standardized LMS).

Evaluating Alternative Policies

The content, implementation, outcomes and impacts of each policy have to be evaluated to acquire a deeper understanding of its value and functions. Therefore, running a framework of evaluation activity is necessary. Each alternative policy mentioned previously must possess at least the basics of the following standards; utility, feasibility, propriety and accuracy. Figure 1 below shows the evaluation framework adapted from Centers for Disease Control and Prevention (2017).

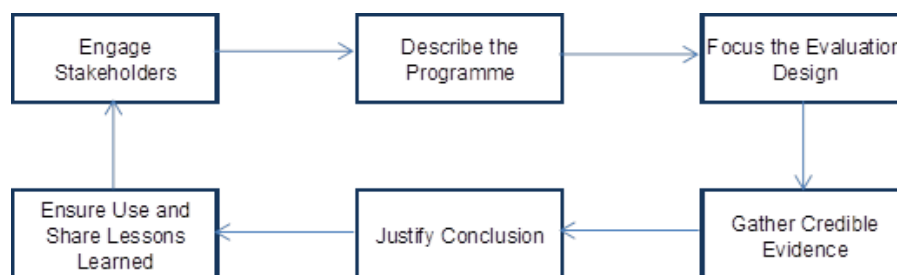


Figure 1: Evaluation framework (adapted from Centers for Disease Control and Prevention, 2017)

Stakeholders are made sure to contribute in evaluating the alternatives. Stakeholders in this case are divided into four main groups; the higher management, the research committee, teaching and non-teaching staff and students. The first two groups are the policy makers. They are the ones who gather information from the last two groups of people (acknowledged as the public) and utilize the acquired data to be considered in the evaluation of the policy. Furthermore, engaging the stakeholders is a prominent action.

Subsequently, Alternative #1 describes the several LMSs used and none can be standardized. It is unfair to completely neglect their contributions over the years because needs and expectations from an LMS are changing in time, especially with the rapid development of technology. Alternative #2 on the other hand, perpetuates finding an LMS that suits the ever-changing requirements in terms of the LMS's standards. In order to further elaborate the essence of the policies, the evaluation criteria established in Step 2 of the policy analysis process are designed to complement the analogy of the policies. We then compared each alternative based on the evaluation criteria. Table 1 shows the acceptability indication of each alternative in terms of the criteria listed (the '□' indicates high acceptability).

Table 1: Acceptability indication of each alternative

Evaluation Criteria	Alternative #1	Alternative #2
Cost	□	
Benefit		□
Administrative ease		□
Effectiveness		□
Political acceptability	□	□
Time to implement	□	
Technical ease	□	□

Investment cost, in particular, is the major concern in relation to investment on an LMS. It has to be defined before one could proceed to analyzing other factors. Thus, it is essential to justify the benefits with the cost invested on the system. The cost-benefit analysis could be used in this aspect and that is to ensure the benefits from the system outweigh the cost. Benefits gained and the effectiveness of the system must extract some measurable credible evidences or ROI. Benefits and effectiveness here refer to the positive impacts from the implemented policy in terms of making teaching and learning easier.

In justifying the conclusion, the aim of each policy is to solve the problems identified. Therefore, Alternative #1 is quickly seen as stagnant but there is still a further distinguishing that needs to be undergone in order to avoid Alternative #1 from being discarded single-mindedly. Moreover, evaluation of the two alternatives is fruitful, as we still need to look into the different LMSs that fall under each alternative. We have chosen two LMSs

(Edmodo and Moodle) that have been used within UBD as the examples of non-standardized LMS. These LMSs fall into Alternative #1. That is, if UBD was to take no action in altering its LMS. On the other hand, Canvas (an LMS) is chosen beforehand if UBD is to choose Alternative #2 that is to standardize its LMS. Table 2 shows the evaluation of each LMS. All the LMSs are compared based on the criteria of LMS Evaluation tool outlined (Longsight, 2013). According to the criteria listed, Canvas scores best between the other two LMSs. The scores obtained are from calibrating the quality of the LMSs features (FinancesOnline, 2016a, 2016b).

Table 2: Evaluation of each LMS

Criteria of LMS	Alternative #1		Alternative #2
	Edmodo	Moodle	Canvas
Pedagogical design & layout	Good	Excellent	Excellent
Content organization	Good	Excellent	Excellent
Speed of system	Good	Good	Good
Communication	Fair	Excellent	Excellent
Sections and groups	Good	Good	Excellent
E-portfolio	-	-	Excellent
Discussion tools	Good	Good	Excellent
Analytics & student tracking	Good	Good	Excellent
Cost	Quote-based	Free	Quote-based

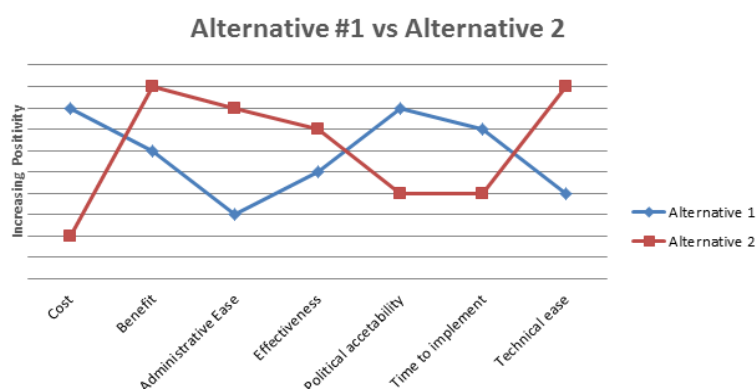
Display and Distinguish among Alternative Policies

In Table 3 below, we listed the highlighted advantages or disadvantages of each alternative policy.

Table 3: Advantages or disadvantages of Alternative #1 and Alternative #2

Evaluation Criteria	Alternative #1	Alternative #2
Cost	Eradicate the need to invest in a new system	<ul style="list-style-type: none"> Particularly high investment on system High subscription rate
Benefit	The current teaching and learning system is time consuming and not up to standard/expectation	<ul style="list-style-type: none"> Making teaching and learning easier Helps take the classroom experience into the 21st century (Canvas Instructure, 2017a)
Administrative ease	Difficult to monitor	<ul style="list-style-type: none"> Fairly easy to implement Early stage in monitoring due to limited data
Effectiveness	Much time consumed, neglecting efforts in other work or matters	Significant increase in effectiveness with increasing usage
Political acceptability	Naturally accepted with the idea of not needing to change	<ul style="list-style-type: none"> Approved and accepted by higher management Negative first impressions from potential users
Time to implement	N/A	Incremental method in implementation and updating
Technical ease	Much work needed to implement and maintain different LMSs	<ul style="list-style-type: none"> Available bandwidth within campus Desktops and necessary hardware are provided

Figure 2 illustrates the much advantages of implementing Alternative #2 compared to Alternative #1. Should we consider taking no action, there is no need to invest on another system for its research and implementation of which would take several years. Being dormant is a natural human behavior as it is not an eccentric subject to discuss. The public may resist migrating to a new system at the expense of indulging the benefits of a standardized LMS.

**Figure 2:** Comparing Alternative #1 and Alternative #2

To further justify the competency of implementing Alternative #2, we have displayed the capability of Canvas (shown in Table 4) following the LMS Evaluation Tool (Longsight, 2013).

Table 4: The capabilities of Canvas

Criteria of LMS	Canvas
Pedagogical design & layout	<ul style="list-style-type: none"> ▪ Access to contents ▪ Pedagogical tools are routinely added
Content organisation	<ul style="list-style-type: none"> ▪ Provides storage and use strategies ▪ Features are like announcement tab, feed, files etc.
Speed of system	Quite fast although depending on the bandwidth capacity
Communication	Provides the use of e-mail and threaded discussion
Sections and groups	<ul style="list-style-type: none"> ▪ Hierarchical ability to organize course content ▪ Instructor may manage sub-groups of students
E-portfolio	<ul style="list-style-type: none"> ▪ Work products are gathered to support portfolio strategy ▪ Reporting tools allow assessment
Discussion tools	Fast and functional with user profiles and pictures, increase interaction between students and instructors
Analytics & student tracking	<ul style="list-style-type: none"> ▪ Allows instructor to gather data of learning outcomes ▪ Tracks student activity and enrolment
Cost	Quote-based

The overall capability of Canvas is excellent in performance. Apart from being standardized, Canvas is one of the top-rated LMSs globally. Canvas LMS is “the enterprise software that helps take the classroom experience into the 21st century” with the goal, “to make teaching and learning easier” (Canvas Instructure, 2017b).

Decision Making

Through the process of evaluation and distinguishing, we learned that Alternative #1 does not particularly solve the problems addressed at the beginning. Moreover, it contradicts to UBD’s vision as a whole. Alternative #2 may have conformed to the standards and expectation of UBD. Canvas is highly beneficial, justifying its worth to be UBD’s standard LMS.

The below description outlines the activities in decision making by the policy makers along a timeline:

In July 2014, the two champions, with the approval of University Research Ethics Committee conducted a pilot study on Canvas. The LMS was subsequently implemented in five faculties in UBD. The stakeholders foresee the potentials of Canvas. The higher management was convinced with the capabilities of Canvas and therefore decided to implement Canvas as the standard LMS of UBD. In July 2015, upon instruction, an email was sent to notify the compulsory usage of Canvas to all relevant parties. Additionally, the use of Canvas was officially introduced at the National Teachers’ Day Exhibition. UBD refers Canvas as UBD Canvas.

Figure 3 shows the decision tree based on our findings in this report. We should note here that it is not the official chart used in the decision-making by the higher management of UBD.

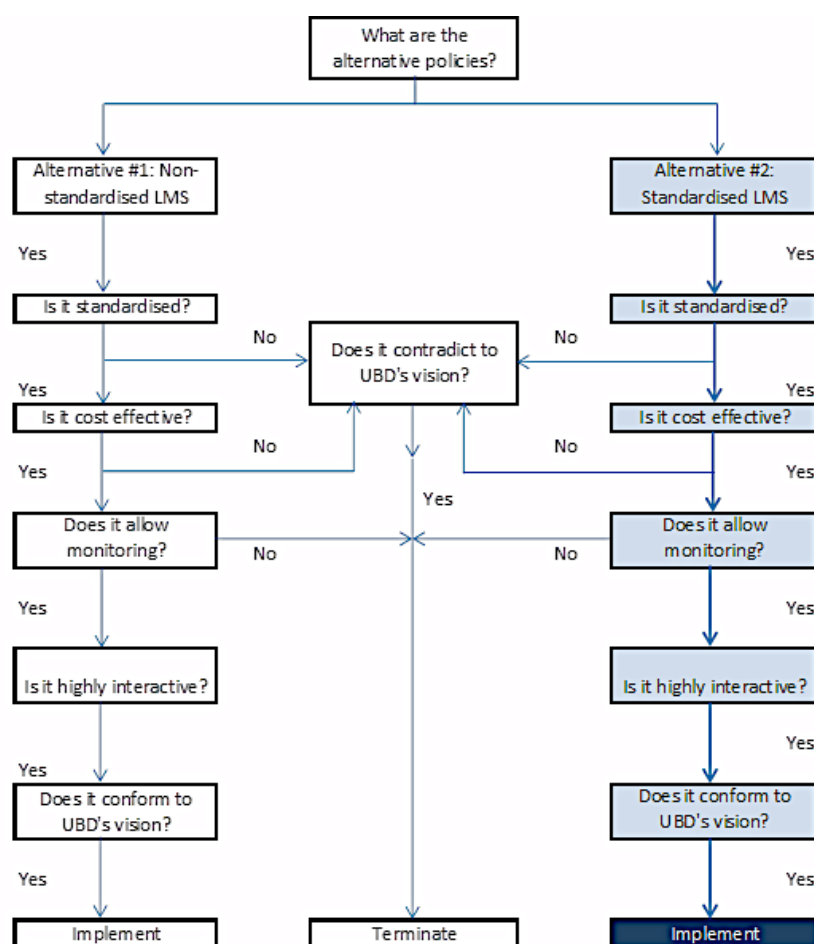


Figure 3: Decision Tree

Monitoring and Evaluation of Implemented Policy

After implementing a policy, follow-ups have to be conducted through constant monitoring in order to determine the effectiveness of the policy and its success rate. The monitoring process can be done through several steps as follows. First of all, there is a need to check if the implemented policy has achieved the expected goals or outcomes. This means that the implemented policy has helped to solve the problems identified earlier. As mentioned earlier, the four problems associated were (1) non-standardized LMS, (2) difficulty in achieving vision leading to a need in incorporating technology and learning, (3) lack of interaction between lecturers and students, and (4) unable to monitor students' activity or learning behavior. In this case, by adopting the use of Canvas campus-wide, this standardized LMS will eventually help in achieving UBD's vision by incorporating technology and education. Also, the interaction between lecturers and students can be enhanced as everyone is in the same system or platform. Lecturers can also monitor students' activity in Canvas, as well as their learning behavior.

Before any evaluation of the implementation can take place, data will be needed and hence the second step is to specify the method that can be used for data collection. Through UBD Canvas, there is a lot of information that can be extracted and utilized for academic purposes. There is also a feature in UBD Canvas, called Course Analytics, whereby lecturers have access to four main areas, namely activity or participation levels, submissions, grades and student analytics. By using the tools and features provided by UBD Canvas, a more detailed analysis can then be conducted in order to gain more information about students' online learning behavior. The data collected can then be displayed in a tabular format to allow for better visual and evaluation to take place. Several sets of data will be needed in order to make solid and valid comparisons and conclusions to determine the overall success rate.

We provide in Table 5 an example for the monitoring process, which was the data collected in order to aid the analysis for this paper. As the implementation of this policy started in July 2015 (at the time of study), only two sets of data were extracted, which was from Semester 1 (Academic Year 2015/2016) and Semester 2 (Academic

Year 2015/2016). The number of Canvas LMS users (lecturers and students only) for the two semesters indicated is given in Table 5.

Table 5: The number of Canvas LMS users

User Types	Semester 1, AY 2015/2016	Semester 2, AY 2015/2016	Difference
Lecturers	423	416	-1.65%
Students	5856	5924	+1.16%

From the data provided, minimal differences were evident in terms of the number of UBD Canvas users from the two semesters, ever since the compulsory usage was first implemented. This simply means that almost all lecturers and students are currently using UBD Canvas as their main e-learning platform. However, it should be noted that it is still difficult to judge as to what is the actual success rate as only data from the previous two semesters were provided. Only through constant monitoring and collecting of more data, then can the actual results be identified.

Challenges in the Adoption

Initially, the adoption rate of Canvas was quite low due to the resistance to change of many staff. Although many were registered automatically in Canvas, their activity levels were quite low. Zaltman and Duncan (1977) defined resistance as “any conduct that serves to maintain the status quo in the face of pressure to alter the status quo” (p. 63). As a result, a sudden change in the status quo and with no much time given to adapt to the whole concept of change are generally resisted. Furthermore, in times of change, the natural reaction is to resist because change introduces the ‘unknown’.

One critical factor that has led to the resistance of change was due to the lack of communication between the decision-makers (Management Committee) and the stakeholders (staff and students). No specific information was conveyed to the stakeholders with regards to Management’s plan for adopting a standardized e-learning management system throughout UBD. Hence, the purpose of change was not clearly understood by all stakeholders. After the implementation took place, there were also technical issues such as Wi-Fi connectivity problem and limited bandwidth throughout the UBD campus. Due to the nature of Canvas being a web-based e-learning platform, a stable Internet connectivity will be required in order to access the contents within the system. It can also be problematic if there are too many users logged-on and accessing the system at the same time.

Besides that, there is one major challenge that UBD may face in the future, which is in terms of the budget allocated for Canvas. Currently, the cost of investment spent on Canvas per year, which is to pay for a subscription fee to cater to a maximum of 6,000 users in the whole system. However, due to the fluctuating economic situation of Brunei Darussalam, there present some uncertainties as to whether the future budgets allocated may or may not be as much as it is today. Eventually, this increases the risks for implementing such an expensive e-learning management system in UBD, as opposed to other LMS that are less costly or even free to use.

Actions taken by the university

In order to reduce the after-effects from the implementation, UBD has taken a few steps to minimize the consequences. Firstly, trainings and workshops were conducted for all UBD staff at a frequent basis since August 2015 and the champions of the whole research project conducted these sessions. These trainings and workshops aimed to help and guide all UBD staff in the use of Canvas. In addition, all staff of UBD was also enrolled as ‘Student’ under one online module in Canvas itself, called ‘Canvas1’. Here, learning materials on how to fully utilize Canvas were provided and prepared by an academic staff who was well-versed in using Canvas for her modules. The learning materials provided include tutorial instruction notes and video links. On the other hand, students were also introduced to Canvas and briefed on the system during the university’s Fresher’s Week. There was also a UBD lecturer who took the initiative to deliver a Canvas workshop that was in Malay language to the staff, in order to cater to any individual whose first language may not be English or who might be more comfortable with the Malay language.

Other than that, a number of Learning Technology Advisors (LTAs) for each faculty, centre and institute within UBD were also appointed. The LTA acts as the focal person for the respective faculty, who also helped to ensure the smooth process of Canvas implementation throughout the university. The main criterion in choosing an appropriate LTA consisted of having a good background and content knowledge about Canvas. Hence, any problems encountered can be identified and then conveyed to the Management Committee for the monitoring process.

The ICT Center of the university also took part in the initiative to help any staff or student who experienced problems when assessing Canvas. One of it was the provision of a Canvas Helpdesk, which is currently handled by two technical staff. The center also dealt with the problem of overloaded access by increasing the bandwidth within the UBD campus. Moreover, the ICT staff provided an offer to all lecturers whereby should there be any lecturers who need to use Canvas during his/her class together with their students, the Center will be obliged to increase the bandwidth within the UBD campus temporarily within a specific period of time so as to cater to more Canvas users and help all lecturers in delivering smooth lectures and tutorials.

RECOMMENDATIONS

Firstly, one of the possible ways in overcoming any change resistance is by educating all relevant parties regarding the change effort beforehand. Hence, upfront communication should have been done in a more effective manner throughout UBD in this case. Timely and adequate information with regards to the whole process (from planning to implementation) should be provided to all stakeholders. Waddell and Sohal (1998) stated that one of the most critical factors that can successfully implement change in any organization is through proper and regular communication and consultation with the parties involved.

Furthermore, prior to any implementation, it is important to gather all stakeholders who will be affected by the change. By conducting interactive sessions, all parties can benefit from this by exploring the changes together and at the same time, learn more about the concept of change and change management. This will also create the sense of urgency among stakeholders that will make them more willing to adopt the use of Canvas. With that in mind, it is also advisable to include any interested participants during the decision-making process, who can contribute their knowledge, attitudes, opinions, suggestions and feelings at their own will. This eventually gives the stakeholders a sense of belonging and they will become supportive to the idea of change, which can ultimately reduce the level of resistance.

In addition, frequent follow-ups should be conducted to monitor the whole transition process. A Change Management Committee should be set up for the purpose of the monitoring process. Lecturers should be able to provide suggestions on how to improve the use of Canvas. Thus, the LTAs should enhance their interaction and communication with their colleagues to identify any potential problems. Likewise, sharing sessions between UBD staff should be held in order to share the best practices on the use of Canvas.

In terms of challenges in budget allocation for Canvas especially during the current economic situation, there are two ways in which UBD may be able to combat these problems if there comes a day when budget cut occurs. Firstly is to reduce certain subscription services to reduce the cost of subscription. The administrator can do this by monitoring the usage of Canvas and by recognizing the patterns, determine which functions are the least popular and unsubscribe to it. This idea is loosely based on the actions that have been taken by the Brunei Shell Petroleum (BSP) in the current economic downturn. For example, in the past everyone in a department is subscribed to certain software even though not everyone needed it. To save cost, BSP reduced their subscription so that only those who actually use the software are subscribed.

Another way to tackle this problem is by spreading the cost to all stakeholders. An example is by increasing the registration fee during the enrollment of a new student. This idea is inspired by the B\$60 fee per semester payable to the university's student body for all bachelor degree students. Sharing the cost among all stakeholders will ensure continuity of Canvas and make it sustainable.

CONCLUSIONS

The decision to adopt an official e-learning platform is a huge responsibility undertaken by the management team of UBD. Every decision made from the planning to the implementation and monitoring stage effects the users of Canvas. Therefore, it is crucial to ensure that the impact that the decision made is beneficial for all stakeholders. Last semester out of 1783 courses, 973 were registered on Canvas making 54 percent of the total courses. Since that was the first semester to implement this e-learning platform, a 54 percent registration is understandable as many are still unfamiliar on how to use the system. This percentage will be expected to rise to 100 percent in the future.

The criteria used to determine which e-learning platform to adopt is crucial during the planning process such as whether the cost is sustainable, how effective it should be in terms of achieving the goals of the policy and how easy would it be for the stakeholders to accept this new change. The final decision for the management team to choose Canvas as the official e-learning platform over the others is also because of its popularity in universities worldwide. (FinancesOnline, 2016a, 2016b). According to FinancesOnline (2016a, 2016b), Canvas is popular

among higher educational academic institutes such as the University of Hampshire and Kansas State University whereas Moodle is popular among businesses such as McDonald's and the Bank of America. On the other hand, the majority of Edmodo customers are primary and secondary education institutes such as Winterville Elementary School and Killian Middle School.

As Canvas is still in the early stages of implementation and monitoring, there are still some uncertainties as to how it will fare among the users. However, as discussed earlier, initiatives have been taken by a lecturer to conduct classes for other lecturers on how to use Canvas in the Malay Language. The willingness of the lecturer to teach other lecturers and the willingness of the other lecturers to attend the workshop and learn how to use it shows the determination of the lecturers in UBD to adopt Canvas as an e-learning platform.

The management team is very optimistic on the prospects of Canvas and they have all the reasons to be. Lecturers have reported to say that the use of Canvas has freed up a lot of their time in terms of organizing and distributing learning materials to students. Quizzes can also be conducted online, sparing the lecturer more time to teach during lectures. The roll call function allows them to easily track the students who attended the class and they are able to conduct audio or video lectures if classes had to be cancelled. Canvas is revolutionizing methods of learning and it is the right move towards building a knowledge society in UBD. Perhaps in the future it might ultimately be adopted as the official learning management system throughout various educational institutes in Brunei Darussalam.

Research Limitations

The primary collection of information and data for this case study was conducted qualitatively via one interview session. For this reason, these findings do not represent the view of the main stakeholders involved, which are the lecturers and students. Additionally, the current use of Moodle and other e-learning platforms within UBD, if any, were not extensively explored. The lack of other quantitative data also limits us in determining the level of acceptance of Canvas by both lecturers and students. Since Canvas was only implemented as a mandatory e-learning platform last semester (at the time of study), data comparison, which could shed light on adoption rate and level of usage between two semesters, cannot be made.

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Positive Discipline and Behavior Approach For Addressing Negative Behaviors in Education: Model of Ari Schools

Dr. Seva DEMİRÖZ

Private Ari Schools

Ankara, Turkey

sevademiröz@hotmail.com

ABSTRACT

This study deals with the model of positive discipline concept and behavior approach, applied in Ari Schools for addressing negative behaviors in schools. The approach of positive discipline concept enables a positive school environment to be sustainable, as well as minimizing problematic behaviors. It increases efficiency in training and education. Positive discipline mentality is based on a gradual system in which the persons, who will help settlement of problematic behaviors, become part of the effort hierarchically. Ensuring that students realize their negative behaviors and the results thereof and that they take responsibility in this respect, the model supports them to gain a significant life skill.

INTRODUCTION

In order to create healthy and effective educational environments in schools, it is essential to create a peaceful and reliable organizational environment. In this respect, the manner, in which the negative behaviors are addressed, is as important as the fact that the rules and principles of the classroom and school are clear-cut and understandable. That the students know and internalize what they are expected and what behaviors are required in the learning environment prevents formation of negative behaviors to a large extent. The students, who are aware of their restrictions, will not have any difficulty about what they can do or not, and feel themselves more secure.

All of the behaviors, which should and shouldn't be exhibited pursuant to the value system, thought and behaviors of educational environment and the culture of the school are called as discipline. Discipline is a system that includes the behaviors expected from students. Establishing such a system is possible only through learning to pay regard to wills and requirements of their teachers, directors and friends so that they could gain acceptance from them while it ensures satisfaction regarding their own wills and requirements. It is essential that discipline sets sights on gaining skill of controlling themselves (i.e., self-control) and self-esteem, but not developing sense of obedience in students. Concept of discipline, applied in schools, must give chance both to healthy personal development of students and active learning environments. When it comes to discipline, all of the skills, which students must acquire to control themselves and take responsibility of their behaviors, spring to mind (Durant, 2010; Eaton, 1997; Jones, 1987; Mcvitte, 2007).

The objective of model of positive discipline and behavior approach, developed in Ari Schools, based on approaches of developmental psychology, is to ensure a regular and effective environment for the students so that the activities in the learning environment could be performed in accordance with the objectives and create the environment that will help students gain the communicative skills and social skills which take an important place regarding the personal development of learners.

The objective of "positive discipline" concept is to make an efficient and positive school environment and culture sustainable, take learning and personal development to top and minimize negative behaviors. Negative behaviors are those, which arise in the form of disruption of classroom environment, rebellious attitudes and behaviors and preclusion of classroom environment and friends. The reasons for the negative behaviors of students may be numerous such as anxiety, apprehension, appeal, showing one's strength to others, learning difficulty, disability to concentrate, lack of attention, hyperactivity and inability in social skills (Bej, 2016).

In "positive discipline" approach, students are made to find the behavioral options to prevent the formation of undesired behaviors rather than suppressing the negative behavior with punishment. Students are guided about how to replace a negative behavior with a positive behavior. When the students are taught, reinforced about the proper behavioral options to meet their own requirements, it is believed that students will exhibit positive behaviors.

Positive discipline concept is based on the following thought: "discipline requires love and sympathy." Happiness and success in training and education is only possible through a positive sense of self and development of positive behaviors (Mcvitte, 2007; Stephens, 1992).

IMPLEMENTATION PROCESS

The system, applied in Ari Schools to address the problematic behaviors is called "Gradual System." In gradual system, attitudes regarding the assessment of negative behaviors of the students are handled in three stages, and the people, who are likely to help the solution of the problem, are included in the negotiations respectively. Written forms to outline and document the negotiations are filled in each stage by the respective parties.

Positive discipline approach and 'Gradual System' have been implemented at Arı Schools since 2015 – 2016 school year. So far, the program conducted to 6th (172 students), 7th (160 students) and 8th (66 students) graders, 66 teachers and 3 principals.

Stage 1

First negotiation: This is performed by the teacher, who observes, experiences the negative behavior and the student, who is the owner of such behavior. These people are granted right and responsibility to carry out the first meeting. In the negotiation, it is essential that the teacher use communication skills effectively and run problem solving steps (i.e., determining the problem, understanding the emotions to accompany the problem, delivering the results, elaborating solution options, encouraging the students for the solutions). Performing the first meeting about the negative behavior in a comfortable environment, the teacher and the student find solution for the elimination of the disrupting behavior.

Second negotiation: In the event that negative behavior still endures following the first negotiation, the teacher and the students negotiate once again and mutually sign the agreed solution thereby making it an agreement (i.e., Teacher-Student Agreement Form).

Stage 2

In the event that negative behavior, which is displayed by the student and that impairs education and training environment continues, concerned teacher fills in Student Negative Behavior form and shares the issue respectively with students' classroom teachers, psychological counselor and respective Assistant Manager and initiates the process for taking suggestions and delivers the form to psychological counselor.

Stage 2

If the negative behaviors of the student are maintained persistently, the family is informed about the negative behavior of the student and invited to be a partner for the solution of the problem. Because, cooperation and unity of attitude of parents with the school is important for the solution of the problematic behavior. Such cooperation and unity of attitude paves the way for solving the problems. If the psychological counselor and respective assistant manager is present in the meeting, Management - Pdr – Parent – Teacher Negotiation Form is filled in by the psychological counselor during the meeting and signed by those who take part in the negotiation.

Stage 3

In cases where student fails to comply with the executed agreement and all efforts are insufficient, school principal becomes part of the effort. Based on the characteristics of negative behaviors of the student other than developmental characteristics of the student, action is taken pursuant to Regulation on Reward and Punishment by Ministry of National Education. Board of Reward and Discipline or the school principal shouldn't become part of the efforts in this respect without completing the first 3 stages.

In the studies conducted with the student, it is essential to try to focus on problematic behavior rather than tending towards the personality of the student; as the student is not completely "wrong." What is defective is the behavior of the student. Psychological counsellor continues to give the essential support to the student and his/her family for changing the problematic negative behavior of the student while all these stages are applied.

Gradual system reduces class conflicts and helps development of communication of the teachers with the students. It ensures the flow of information between the teacher and the counselling center, increases sharing and supports their generating solution together. Psychological counsellors are informed about the problematic behaviors through the forms taken from the teachers, they monitor and give support for solution process. As for the students; with this method, they learn that communication is bilateral, both of the parties have a share if a problem is experienced and therefore the solution can only be generated together. Thus, their communication skills are developed. It further enables them to discuss the problem with the teachers, and gains the students the concepts of being fair and equal as well as raising awareness about being a partner of the problem.

Gradual system ensures determination of at which stage of the problems the management will become part of the activity and what their role will be. It ensures that management can maintain communication and problem solving process actively before carrying out the articles of regulation on reward and punishment.. If the problems are not solved in the process of Gradual system, the management leads the student to disciplinary board due to unfavourable behaviors. In this case, student assumes the responsibility of negative behaviors. As regards the parents being another shareholder, the system ensures that parents take place and assume responsibility in solving

the problematic behavior of the child. Just as the parents are informed about the problem, they also learn their duties about the process.

FINDINGS

Assessment of Model Implementation

When it comes to the assessments of shareholders who find take part in the solution process with the model of positive discipline concept and the gradual system that underlies the model;

Students:

Student of 6th grade, "I was interested in other things during the lesson rather than listening to the teacher. My teacher warned me several times. However, I continued the same behavior. The teacher called me for a negotiation after the lesson, we talked about this problem together and signed an agreement form. The fact that my teacher helped me to solve my problem and talked to me rather than reprimanding me among my friends was influential in that I gained an attitude towards listening to the lessons better."

Student of 7th grade, "That I was present in the negotiation performed with my family and that they helped me to solve my problem of failing to do homework at home made it easy for me to overcome this problem."

Student of 8th grade, "After I talked about my problem of being late for the classes with the assistant manager, my teacher and psychological counsellor, I realized that I had a problem to control myself regarding time management."

Teachers.

Teacher 1: "I learnt that the parents of the student, who fail to do his homework, are in a process of getting divorced. The fact that I understood that he needs much more attention ensured me to provide more different support for him."

Teacher 2: "In the process which started when a male student knocked the door and went out, it made me approach that student more different when I learnt in the negotiation, which we made to solve this problem, that the problem of this student with the authority in fact stems from his failure to make contact with his father. And this increased the success and interest of this student towards the lesson."

Teacher 3: "Feeling that I am not alone in solving the negative behaviors and feeling the support of guidance and the counselling service and management motivated me in reaching the solution."

Parents:

Parent 1: "I was invited to a meeting. An assistant manager, a Pdr specialist and a teacher took part in that meeting. I was very surprised in the beginning. Then the delivery, assessment and providing solution for the problem of my child regarding technology addiction through different perspectives of teachers, and the fact that I was guided in this process helped me to understand and be a partner for the solution of the problem."

Parent 2: "It was also a significant experience for my children to be aware of his problem without running the discipline mechanism directly, be a partner of the procedure for solving the problem and learn that problems can be solved by discussing without being harmed in all this process and even feeling himself more precious."

Parent 3: "I was called from the school due to the fact that my child insults, offends his friends. While talking to the managers and teachers about my child, it made me surprised to learn the real problem was that my child felt jealous about our new baby. The fact that I realised this reality, which I couldn't realise at home, helped me to solve the problem."

Principals:

Principal 1: "I believe that it gains the students positive and significant life skills when all concerned parts come together and talk about, discuss the problems and act together for the solution, as well as solving the problems without executing the disciplinary regulation."

Principal 2: "I believe that the solutions generated without using the Reward and Punishment sanctions develop human relations at the school and become efficient in creating positive organizational environment."

Principal 3: "I think that the leaving the first step in talking about and solving the problems to the teachers and students, who have deeper relation and communication is a much more effective way of solving the problems."

CONCLUSION

Positive discipline approach and the model of gradual system has a significant function in that students can understand and take responsibility of negative behaviors and the unfavourable results created by such attitudes. We are well aware of the fact that reward and punishment can only control the problematic behavior temporarily, however they fail to solve such completely. Making the change of problematic behavior sustainable in the desired direction is based on the fact that the individual gains the skills to talk about, discuss and solve the problem.

Positive discipline approach also contributes to the development of positive relations and communication within the school. That the individuals understand each other, solve the problems by talking supports all partners communicate openly and it has a positive impact on organizational environment and culture thereby improving their problem solving skills.

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Positive Psychology and School Intervention – What School Psychologist Could/ Should do

Jana VERNARCOVÁ

Ústav psychologických a logopedických štúdií

Pedagogická fakulta Univerzity Komenského

Bratislava, Slovak republic

vernarcova@fedu.uniba.sk

ABSTRACT

The evidence shows that positive psychology programs and interventions are significantly related to student relationships, his/her well-being, positive attitudes to learning and education and academic performance. We offer several examples of positive psychology application within common roles of the school psychologist (individual and group counseling, assessment, prevention, intervention).

Key Words: Positive Psychology, School Intervention

INTRODUCTION

Positive psychology as a branch of psychology refers to scientific understanding and effective intervention to aid, it studies what makes our lives most worth living. According to Gable, S., Haidt, J. (2005) it is the study of the conditions and processes that contribute to the flourishing or optimal functioning of people, groups and institutions. With its history dating back to works of James in 1902, Allport in 1958 and Maslow in 1968 positive psychology grew into a discipline that studies the ways how people feel joy, create healthy relationships, families, groups and institutions, show altruism.

We spend almost one fourth of our lives being educated in pre-schools, schools, and universities or via lifelong learning. The way we spend our school time may influence our way of thinking, our self-esteem, our decisions as well as the state of our *mental, psychological and emotional wellbeing*. That's why there is no doubt that the school climate is the essential determinant of successful schools and is recognized as an important target for school reform and improving behavioral, academic and mental health outcomes for students (Thapa et al., 2012).

School climate as a multidimensional product of the interpersonal relationships among teachers, students, parents, and other school administrators and staff consists in general from five basic aspects: 1 – teaching and learning process, 2 – institutional environment (e.g. academic or physical environment) , 3 – interpersonal relationships, 4 – staff relationships, 5 – safety. Positive school climate exists when all students and teachers feel comfortable, accepted, valued and safe in an environment of school and are surrounded by people who care. Research has shown associations between school climate and lower levels of alcohol and drug use (LaRusso et al., 2008), harassment (Attar-Schwartz, 2009, Vernarcová, 2016), bullying (Meyer-Adams & Conner, 2008) or academic performance (Brunclíková, Z., 2010, Hamranová & Vernarcová, 2013). Favorable school climate has been linked with higher student academic motivation and engagement, fewer student absences (Thapa et al., 2012). Not suprisingly, schools with evident positive climate have teachers who report higher level of commitment and more collegiality (Brunclíkova, Z., 2010).

Strategies to enhance school climate according to Doll (2010) include those that strengthen relationships and those that foster self-regulation and autonomy. Although there is no one quick and easy solution or program for improving school climate, according to O'Brennan (2014) we can describe common features of effective school programs. One of the possibilities that works is to move away from a reactive, punitive, exclusionary approach to proactive, positive and supportive strategies. Rewarding positive behavior rather than punishing poor behavior will give children seeking attention and incentive to behave well. Educational researchers often explore the correlation between school climate and student mental health outcomes (Ternényová & Vernarcová, 2016). All educators must be informed and be able to explain what a positive school climate is and why it is important. The key educator leaders at school should be identified and trained.

School psychologist in Slovak republic is uniquely qualified specialist working in school teams, performing professional activities within psychological diagnostics, individual or group psychological counseling, prevention and intervention. The most basic function of a school psychologist is problem solving in schools. They use special psychological methods to work with learning and behavior and to help students succeed in all fields. They need to cooperate with families, teachers, other school professionals to create healthy, safe and supportive school environment. School psychologists provide direct support and interventions to students, consult with teachers and parents, they try to improve academic achievement, promote positive behavior and mental health, create safe and positive school climate, strengthen family-school partnership.

As Gajdošová (2017) states trying to reach the aims of European and Slovak strategies for the support and developing of mental health of children and young people for next years it is necessary to innovate and modify the concept of school psychology and the services of school psychologists in schools. The *tasks of school psychologists* are as follows:

- to pay special attention to the mental health of students, teachers and other professionals working at school during the educational process
- to focus on health prevention and preventive activities at school to support and secure them, special attention should be pay to the reduction of violence against children within the family, youth violence and teenage dating violence
- to design and implement short-term, mid-term but also long-term preventive programs aimed especially on effective conflict resolution, assertiveness, empathy, crisis management, promoting safe school environments, positive behavioral support etc.
- to be able to cooperate with students, teachers, parents and other communities it is necessary for school psychologist to be a part of a multidisciplinary professional team of special education teachers, social workers, doctors etc.
- a healthy, safe and positive school places importance on the identification and diagnosis of students' positive traits, gifted and talented students and their positive personal development and growth
- to create and develop system of career guidance and counseling to help students make more informed and better educational and career choices
- to support development and implementation of programs focusing on relationships, future marriage, parenting
- to create, support and promote cultural diversity, tolerance, inclusion and inclusive education
- etc.

It seems to be useful to create multi-disciplinary teams (educators, school psychologists, counselors, special educators, other professionals) for regular analyzing of school climate and developing plans for its implementation. We have an excellent time for school psychologists to use all of their skills and knowledge in way that can benefit the whole school system.

The school psychologist is one of the most important components in creating of positive school climate.

To create *safe and positive school climate* means to promote respect, care, safety, inclusion, acceptance and engagement all school year round. These aims include tasks such as follows (see picture 1):

- respect - implement positive discipline, implement school-wide positive support
- care - assess school climate, support social-emotional learning
- safety - identify at risk students, prevent all forms of violence, minimize and manage conflicts, provide crisis intervention services
- inclusion – include students in school wide goal setting and decision making,
- acceptance – prevent bullying and victimization,
- engagement - involve parents to participate in school activities, build relationships with students and families and make time for students and other school staff to build relationships with one another, inform and engage students in informing their families about work in school using newsletters, sending photo documentation, open door days.



picture 1: promoting a positive school climate : respect, care, safety, inclusion, acceptance, engagement

THE STUDY

The Relationship Between School Climate and Mental and Emotional Wellbeing

School climate is usually described as “the quality and character of school life” and includes both physical and social aspects of school. As mentioned before it can significantly influence academic outcomes for students and teachers. Loukas (2007) acknowledges the importance of individual perceptions and therefore schools often assess how students feel about their school.

There are several assessment instruments available to examine the quality of school life with “school functioning”:

- SLSS – Student’s Life Satisfaction Scale,
- MSLSS – Multidimensional Student’s Life Satisfaction Scale,
- BMSLSS– Brief Multidimensional Student’s Life Satisfaction Scale,
- COSSS – Children’s Overall Satisfaction with Schooling Scale,
- MCI – My Class Inventory,
- VSP – A (Vecu et Santé Percue de l Adolescent),
- QSL – Quality of School Life etc.

Our study examines the *level of quality of school life* of pupils with special educational needs (SEN) compared with their intact peers. For our research we used the paper based, self-completion instrument the Quality of School Life Questionnaire (QoSL, Hlásna, 2007) with 56 items divided into 7 dimensions (2 general aspects: General Satisfaction, Negative Affect, and 5 specific aspects of schooling: Teacher – pupil relationships, School status, School success, Social support, School environment). The participants respond on a 5-point Likert scale from strongly agree to strongly disagree. The higher scores indicate better quality of school life. It has been constructed based on the theoretical definition of quality of school life describing the ‘quality of school life’ as students’ general well-being and satisfaction, from the point of view of their positive and negative experiences in school environment (Mareš, 2007). The study was conducted by surveying 136 pupils between 12-15 years (23 pupils were pupils with special educational needs). For next analyze we involved also data from 19 students educated in special primary school.

FINDINGS

Table 1 The final score for each dimension/scale - boys vs. girls

<i>Dimensions</i>	<i>Sex</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SEM</i>	<i>df</i>	<i>t</i>	<i>p</i>
General Satisfaction	boys	87	27,25(3,40)	6,47	,784	153	1,786	,031
	girls	68	25,54(3,19)	5,44	,583			
Negative Affect	boys	87	25,32(3,17)	5,85	,710	153	2,293	,040
	girls	68	27,35(3,41)	5,154	,552			
Teacher – pupil relationships	boys	87	25,64(3,20)	4,409	,472	153	2,815	,426
	girls	68	27,95(3,49)	5,816	,705			
Boys and Girls relationships	boys	87	27,51(3,43)	6,13	,743	153	2,228	,053
	girls	68	25,22(3,15)	5,308	,569			
School success	boys	87	25,83(3,23)	5,39	,578	153	1,860	,232
	girls	68	27,51(3,44)	5,78	,701			
Social support	boys	87	25,12(3,14)	5,166	,553	153	2,046	,611
	girls	68	26,97(3,37)	6,044	,733			
School environment	boys	87	26,22(3,27)	5,512	,591	153	1,410	,032
	girls	68	24,93(3,11)	5,817	,705			

M- mean, SD – standard deviation, df- degree of freedom, t-Student t-test, p- statistical significance

As published before (Vernarcová, Vancu, 2016), the aim of the survey was:

- to determine the level of quality of life of pupils with special educational needs (SEN) compared with their intact peers
- to identify factors affecting their quality of school life
- to compare how pupils differ in assessing the quality of life on the basis of gender, type of educational needs and type of school they attend (special or mainstream).

We have found statistically significant differences in 6 from 7 scales (except for General Satisfaction). Intact pupils are more satisfied with their school in general, they believe that school is useful, have more positive view of their status within their school, feel more safe and supported in school than pupils with special educational needs.

Comparing female and male students by analyzing the mean scores of these dimensions, it was found that the difference was in favor of female students (Table 1). This means that girls believe that they have a safe learning environment and the teachers exhibit supportive behaviors more than boys do.

CONCLUSION

As Lester & Cross (2015) have found, school climate factors of feeling safe at school, feeling supported, connected with school and school success are all protective of mental, emotional and social wellbeing. As Doll (2010) acknowledges, school psychologists can be important resource in creating a positive school climate. At first they can provide appropriate „research“ using reliable survey instruments to assess school climate, analyze data and suggest appropriate approaches to addressing problems. The next step is to support teachers' problem solving and team collaboration. Doll's suggestion is to continue with helping teachers and parents to implement strategies to support students' self regulatory skills and then consult on positive discipline and behavior. In different countries with different school systems there are several effective short-term or long-term wellbeing programs designed to be implemented within the framework of school legislative and school curriculum. All

educators as well as other professionals (e.g. school psychologists) have possibility to pass training courses to support health and wellbeing in their schools. Schemes of work, lesson plans, policies, resources and more on wellbeing topics are available to help and encourage schools in implementing positive school ideas.

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Preferred Value Structure By Adolescent Girls And Boys

Anežka HAMRANOVÁ

Faculty of Education

Comenius University in Bratislava

Slovakia

hamranova@fedu.uniba.sk

Blandína ŠRAMOVÁ

Faculty of Education

Comenius University in Bratislava

Slovakia

sramovab@fedu.uniba.sk

ABSTRACT

This paper intends to introduce structures of preferred values among adolescents. Value structure demonstrates motivation tendencies of a personality and is therefore useful for researchers. It is specifically important to map values in so called transition period – in a period of adolescence. The research sample composed of Slovak adolescents (N=231), of girls (N=162) and boys (N=69). The average age was of 16.7 years. Our interest was focused on gender differences. The value structure was searched using PVQ questionnaire (Portrait Value Questionnaire, Schwartz, 2003). The identified results have shown changes in the preferred value structures (statistically significant difference) between girls and boys. Our findings show that girls have higher scores in the values of conformity, power, and conservation. On the other hand, the boys in comparison to girls have higher level in the values of universalism, achievement and self-transcendence. The present study is a part of the project VEGA 1/0623/15 Value Messages Perceived by Pupils in Formal Education.

Key words: values; adolescents; gender; motivation

INTRODUCTION

Classroom Values are a significant source of motivation, giving direction to our actions. Value is often understood as subjective appreciation or level of importance that an individual assigns to certain things, phenomena and symbols or to other people (Průcha, 2008). That is why researchers pay such significant attention to value structure of a personality (Štárhoň, Juříková et al., 2015, Šramová, Džupina, Jurášková, 2013, Sigelman, Rider, 2015). It is known that a value orientation is being formed since one's birth: Therefore, the key role in every process is played by child's parents (Vernarcová, 2015), who by their attitudes, opinions, interests, aspirations and behaviour participate on formation of the chart of values of their own child. Further important institution taking part in human value formation are media (Šramová, 2014). In current informative society, media are highly significant communication tool that is being used by the recipient to create a picture about the world and enables him to confront his values with those that are being presented to him by media (Mazzarella, 2007, Pavelka, 2014). Special attention is being paid to school as an institution that participates on formation of value structure of students, doing so intentionally as well as involuntarily (Brunclíková, 2011, Ferková, 2016, Cabanová, 2013, 2015, Vernarcová, 2013). Group of same age students proved to be one of institutions influencing needs, interests, attitudes as well as values of an individual (Šramová, Džupina, Jurášková, 2013). This influence is very significant in adolescent age - in a period of identity formation (Berzonsky, 2011, Šramová, 2007), bringing changes in physical development (physical development completes, changes get slighter) as well as mental development changes: quality of thought operations changes, development of critical thinking abilities peaks (Šramová, 2007, Vancu, 2014, Šramová, Hamranová, 2015a, 2015b, Andreánska, Brunclíková, 2015). Kraus et al. (2006) sceptically describes current young people who often live from one day to another, not having any long-term goals, not maintaining greater spiritual values, not spending their time valuably. According to the author, it is a consequence of quick life pace that does not create sufficient space for continual incorporation into society. The adolescent is now more than ever confronted with great concentration of often contradictory information that are hard to handle even for an adult. This is one of the factors making

identity formation process harder, one may therefore witness higher emotional immaturity of adolescents, in comparison to their higher cognitive maturity if compared with previous generations in adolescence period. However we also can witness their interest, will, engagement and excitement for world and environmental issues that they are engaging in (Soukalová, Gottlichová, 2015).

Using digital technologies and mainly by means of social networks they not only can name the problem, but can also mobilize other people to support and help the case (e.g. in case of poverty, necessity to help someone in difficult life situation, in case of loss of close person, health issues, home losses etc.) This is the development period in which the adolescent confronts values, goals, attitudes that are being presented to him by parents, school, peers, media or other social groups (Hamranová, 2015a). All the aforementioned institutions significantly participate on socialization process. On one hand, the adolescent strives to be stand-alone, independent, on the other hand he wants to be a part of social peer groups. We therefore witness strong individualism as well as collectivism. At this point we face further often discussed problem – negative influence of communication technologies being preferred by adolescents in comparison to communication face to face. High level of digital literacy that is so typical for current generation of adolescents is being used by themselves to create social relationships in virtual reality (Šramová, Hamranová, 2015). This negatively reflects in increased social isolation, decreased ability to solve problems, decreased communication ability (as much verbal, as non-verbal), ability to create and maintain friendships (not the virtual ones), adaptation complications etc. In other words, social communication in virtual environment may have its negative as well as positive side (e.g. helping to develop social relationships) (Mazzarella, 2007; Valkenburg, Peter, 2009). In order to be able to intentionally form values of young generation, it is necessary to know them first. It is known that except the aforementioned factors, the value chart is being influenced also by culture that forms an individual as such (Schwartz, 2003). Values are also bound to gender in an adolescence period (Šramová, Džupina, Jurášková, 2013).

Schwartz (2003) identified ten basic values: *Power* (authority, wealth, social status and prestige, control or dominance over people and resources), *Achievement* (personal success and ambition), *Hedonism* (pleasure), *Stimulation* (excitement and novelty, challenge in life), *Self-direction* (independent thought, creating), *Universalism* (tolerance and protection for the welfare of all people and for nature), *Benevolence* (helpfulness for people with whom one is in frequent personal contact), *Tradition* (respect and acceptance of the ideas traditional culture or religion), *Conformity* (obedience), and *Security* (safety, harmony, and stability of society, and of self). According to Schwartz (1992, 1994) these individual values are grouped into four higher-order value types that create the value structure of an individual. These are the mentioned groups: *Self-enhancement values* (power, achievement) emphasize self-interest, social status, and prestige; *Self transcendence values* (universalism, benevolence) emphasize the welfare and interests of others; *Openness to change values* (self-direction, stimulation, hedonism) emphasize independent thought, and readiness for new experience and pleasure; and *Conservatism values* (security, conformity, tradition) emphasize self-order, and resistance to change.

The aim of our research was to find out about value preferences and value orientation of adolescents considering their gender.

We have formulated following research questions: What kind of value system do adolescents maintain? Is there a difference between value characters of adolescent girls and boys?

METHODS, PARTICIPANTS AND MEASURES

The participants of the research were adolescents attending high schools (N=231), composing of 162 girls and 69 boys. The average age of participants was of 16, 65 years.

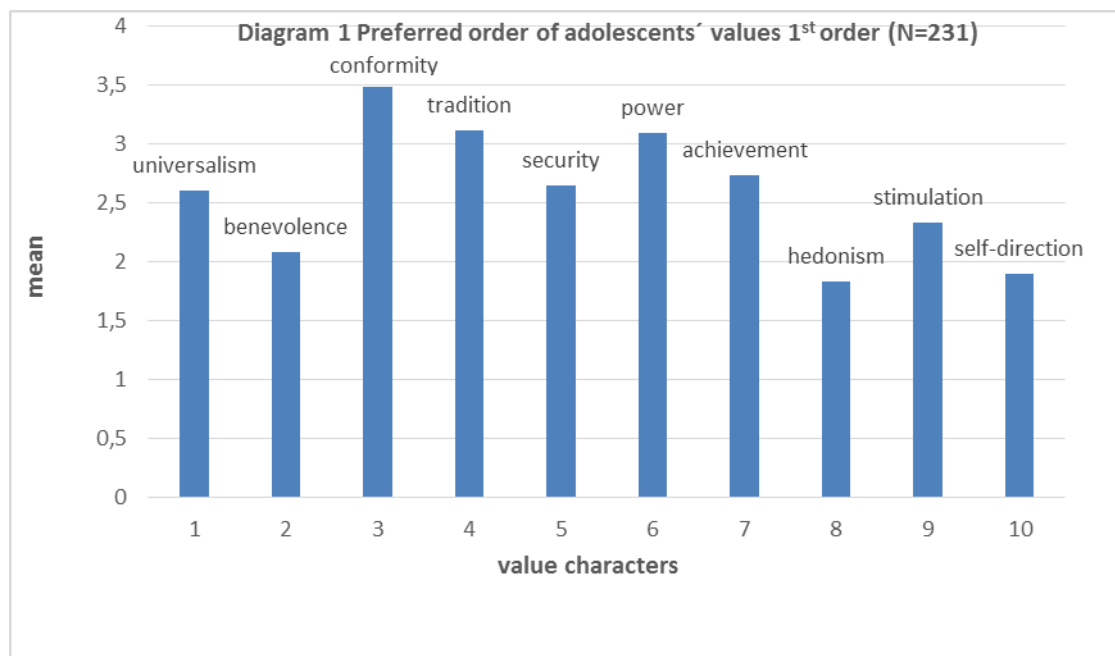
In order to measure values and to find out about the value structure of adolescent girls and boys we have used 21 item **Portrait Values Questionnaire** (PVQ, Schwartz et al. 2001) (Cronbach's $\alpha = 0.621$). Participants are asked to respond to each question "How much like you is this person?" on a scale of 1 (very much like me) to 5 (not like me at all). The questionnaire composes of ten values of 1st order: Power, Achievement, Hedonism, Stimulation, Self-Direction, Universalism, Benevolence, Tradition, Conformity, and Security. Each value type was measured by two items, except for universalism (three items). The instrument contains short verbal portraits that describe a hypothetical person's goals, aspirations, or wishes that are thought to reflect the importance of a certain value type. Ten values were possible to combine into four levels higher, i.e. 2nd order – value structure: Self-Enhancement, Self-Transcendence, Openness to change, and Conservation.

Table 1: Reliability coefficients for the 1st and 2nd order values of Portrait Values Questionnaire (PVQ)

Values- 1 st order	Amount of items	Values- 2 nd order	Cronbach's α
Power	2	Self-Enhancement	0.57
Achievement	2		
Universalism	3	Self-Transcendence	0.55
Benevolence	2		
Hedonism	2	Openness to change	0.52
Stimulation	2		
Self-Direction	2		
Tradition	2	Conservation	0.52
Conformity	2		
Security	2		

RESULTS

According to performed measurements, the adolescents prefer following values the most: *conformity* (control over own acts, tendencies and impulses – not to break social expectations or social norms, courteous and polite behaviour, honouring parents and seniors), *tradition* (respect, acceptance of customs and ideas anchored in traditional culture or religion, avoidance of extreme situations in life or behaviour, acceptance of circumstances of life), *power* (social status and prestige, feeling of strength, tendency to order and control others, demonstration of own domination), *achievement* (ambitions, achievement of own goals, demonstration of own competences and abilities, receiving recognition from others), *security* (own family and own nation, adherence to social order), *universalism* (defined by understanding, appreciation, tolerance, inner harmony, society and nature protection), *stimulation* (characterized by excitement, life challenges, life changes, courage, turbulent and exciting life), *benevolence* (readiness to help, loyalty towards own friends), *self-direction* (necessity to stay independent, to make up new things constantly) and the least preferable value was *hedonism* (being characterized by joy and enjoyment of life). (Diagram 1).



Considering preferred value structure it is obvious that the adolescents incline to *conservation* (composing of values: safety, conformity and tradition). The other value structures were *self-enhancement* (determined by success and power), *self-transcendence* (defined by values: universalism and benevolence) and *openness to change* (infused with hedonism, stimulation and self-direction). (Diagram 2).

Data describing gender differences between the groups of boys and girls in particular values and value structures are stated in Table 2. Significant higher differences of girls were measured in *conformity* ($t=2.56$; $p=0.012$), *power* ($t=3.15$; $p=0.002$) (values 1st order) and *conservation* ($t=2.15$; $p=0.032$) (values 2nd order). Significant higher differences of boys were measured in *universalism* ($t=-3.03$; $p=0.003$), *achievement* ($t=-2.89$; $p=0.004$) (values 1st order) and *self-transcendence* ($t=-2.85$; $p=0.005$) (values 2nd order).

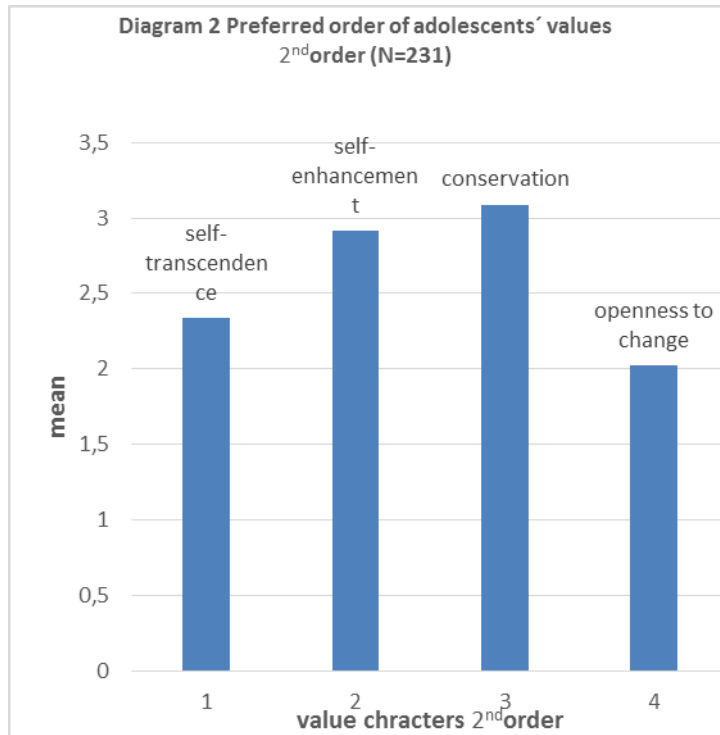


Table 2: Differences in value characters (t-test) of adolescent girls (N=162) and boys (N=69)

Values	AM girls	AM boys	t	p
1st order				
Universalism	2.48	2.88	-3.03	0.003
Benevolence	2.03	2.24	-1.64	0.102
Conformity	3.65	3.20	2.56	0.012
Tradition	3.17	3.03	1.09	0.277
Security	2.65	2.53	0.80	0.425
Power	3.26	2.70	3.15	0.002
Achievement	2.56	3.07	-2.89	0.004
Hedonism	1.82	1.82	0.02	0.987
Stimulation	2.36	2.23	0.99	0.322
Self-Direction	1.91	1.85	0.51	0.611
2nd order				
Self-Transcendence	2.26	2.56	-2.85	0.005
Self-Enhancement	2.91	2.88	0.16	0.872
Conservation	3.16	2.92	2.15	0.032
Openness to change	2.03	1.96	0.71	0.479

CONCLUSIONS

In the society, the value system of a person is constantly confronted with alternatives, outer pressures and societal changes that have great influence on young people as well as educational system.

The analysed adolescents proved the highest occurrence of following values *conformity* that includes certain level of self-discipline, courtesy and respect towards communication partners, *tradition* characterized by respect towards traditions and society culture and *power* that includes striving for dominance, control, prestige as well as for social status. The above values are natural necessity for the adolescent development period. It corresponds with the most preferred values of a higher order *conservation* (composing of tradition, conformity and security) a *self-enhancement* (composing of achievement and power). The least preferred values were *hedonism* typical for life joy, *self-direction* including striving for independence and *benevolence* characterized by readiness to help and loyalty towards friends. The least preferred value structures were in compliance with the aforementioned *openness to change* (composing of *hedonism*, *stimulation* and *self-direction*).

Our findings show that value preferences are gender determined. Girls prove significantly higher level in *conformity* that includes certain level of self-discipline, courtesy and respect towards communication partners and also in value of *power* that can be characterized as striving for dominance, control, prestige as well as for social status. The two mentioned values may be related to frequent conflicts and inner inconsistencies that are typical for psyche of adolescent girls when forming their identity. It also may be a culturally conditioned aspect, when girls are being led to have higher respect towards habitual and socially given standards, when it comes to gender. Girls, in comparison to boys, are more significant in value structure of *conservation* (composing of *tradition*, *conformity* and *security*).

Boys scored more significantly in value of *universalism* characterized by understanding, comprehension, tolerance and social justice. Further value is *achievement* typical by effort to achieve personal success and ambitions, which is typical for boys in this age. In value structure, they are stronger in *self-transcendence* (composing of *universalism* and *benevolence*), in comparison to girls.

In adolescence, the formation of identity composing of, among all, value and value orientation creation, is the most significant. It is one of the most important life milestones in identity formation process (Šramová, 2007).

According to Poliaková (2013) and Hamranová (2003), education should be a process of personality cultivation. Formation of values and value orientation of girls and boys is, without doubt, its important part. It is being proved that by understanding of the most prevailing value structure we may perform targeted influence in cultivation process respecting gender differentiation.

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Preschool Teacher Candidates' Metaphoric Perceptions About The Concept of Music

Aylin MENTİŞ KÖKSOY

*Nigde Ömer Halisdemir University Faculty of Education
Department of Preschool Education*

ABSTRACT

The general purpose of this study is to examine teacher candidates' perceptions about the concept of music through metaphors. In line with this general purpose, answers to these questions were sought: What are preschool teacher candidates' metaphors for the concept of music? Under what categories the metaphors developed by the preschool teacher candidates be grouped according to their common characteristics? This research is a qualitative study. Content analysis model was used in the study. The study group consisted of 59 senior students studying at the Department of Preschool Education of Konya Necmettin Erbakan University's Faculty of Education during the Spring semester of 2016-2017 academic year. In order to collect the data in the study, forms with the statement "music is similar to ... because ..." were distributed to the students, and they were asked to complete the statement on the form. Later, the forms with students' own statements were collected, and content analysis were done on the collected data. After examining students' completed statements, seven forms were excluded from the process since they did not give explanation. The analysis of the data was realized in four phases: naming, categorization, ensuring validity and ensuring reliability. At the end of data analysis, 52 metaphors developed by the teacher candidates were grouped under three categorical titles.

Key Words: Music, Metaphor, Preschool Teacher Candidate

INTRODUCTION

Metaphors are important to have an intuitive look at complex concepts and to learn individuals' opinions on their personal experiences. Metaphor is derived from the Greek word 'metapherein', combining the terms meta (between) and pherein (carry) words. The word metaphor therefore means the transference of a content from one thing to another (Gibbs, 1994, p.210; Nikitina & Furuoka, 2008 cited in Konaklı & Göğüş, 2013, p. 68). Metaphors are considered as one of the most important cognitive tools constructing, directing and controlling ideas about how events take place and continue. Metaphors are constructs used to describe other concepts to explain a concept, to strengthen the narrative, to enrich the language and transform the thought into linguistic action in the most effective way (Saban, 2004). Metaphors provide a broad perspective for their users. While the meaning transference in the metaphors developed make it possible to think about the relationship between the concepts, it also helps different characteristics that were not that clear to come to light (Rundgren, Hirsch & Tibell, 2009). Furthermore, while metaphors contribute to put forth how concepts that need to be analyzed are being perceived by facilitating the understanding and interpretation of concepts (Cerit, 2008 cited in Kasapoğlu 2016, p. 61), metaphor analysis research is interested in determining the metaphors and what they mean to clarify a subject by focusing in-depth on the key words and concepts individuals use while talking or interacting (Ekiz, 2009 cited in Kasapoğlu 2016, p. 61). Metaphors have different functions. According to these functions the meaning the metaphor imply can change the context to a certain degree. The meaning values of the metaphors are more intense than their true meanings. Metaphors carry relative meaning values. They can be used as tools to understand the character and the culture. They can also be used as data collection tools in various sciences (Booth, 2003, p. 14; Girmen, 2007, p. 11-12 cited in Aydinler-Uygun, 2015, p. 2). Metaphors have also been used as a data collection tool in studies on music. According to Aydinler-Uygun (2015), the studies where metaphors are used as data collection tools in music literature can be grouped under three categories. Some studies use metaphors as a tool in analyzing the expression in lyrical and instrumental music pieces. In another study, the effect of metaphors as an educational tool on the shaping and development of musical expression was tested. In another study, metaphors are used as a data collection tool to determine perceptions regarding concepts in the field of music and art education. Among these studies, Koca's study (2012) aimed to put forth preschool teacher candidates' perceptions about learning music through metaphors. In their study, Mustan-Dönmez and Karaburun (2013) examined the metaphoric expression tradition in folk song lyrics. While Özkul (2013) focused on metaphors in musical expression within the music-language relationship, Umuzdaş and M-Umuzdaş (2013) focused on classroom teacher candidates' perceptions about the music class. Furthermore, while Babacan (2014) examined the perceptions of students studying at fine arts high school about the art education class, Dinç-Altun (2014) metaphorically analyzed music teacher candidates' perceptions about the piano class. In her study, Mentiş-Köksoy (2015) determined classroom teacher candidates' perceptions about the concept of music through metaphors. Also, in her study, Aydinler-Uygun (2015) put forth teacher candidates' perceptions about traditional music genres through metaphors. Tez and Aydinler-Uygun (2016) made a metaphorical analysis of middle school students' perceptions about the music class and their music teacher. Using metaphors is a way of thought and seeing the world in general. In this sense, metaphors are a powerful cognitive tool that individuals

can use to understand and explain a highly abstract, complex or theoretical concept (Saban, 2008, p. 460). In other words, metaphors are powerful tools allowing individuals to explain their perceptions about abstract concepts with concrete concepts. In this study, metaphors are used as the fundamental data collection tool to determine individuals' perceptions about concepts. In this respect, in this study, it was believed that preschool teacher candidates' perceptions about the concept of music can be explained by transforming them into concrete concepts by using metaphors. This study was conducted in order to put forth preschool teacher candidates' metaphors about the concept of music. In line with this general purpose, answers to the following questions were sought:

- 1- What are preschool teacher candidates' metaphors for the concept of music?
- 2- Under what categories the metaphors developed by the preschool teacher candidates be grouped according to their common characteristics?

METHOD

Study Group

This research is a qualitative study. Content analysis model was used in the study. The study group was made up of 59 senior students studying at the Department of Preschool Education of Konya Necmettin Erbakan University's Faculty of Education during the Spring semester of 2016-2017 academic year.

Data Collection and Analysis

In order to collect the data in the study, forms with the statement "music is similar to ... because ..." were distributed to the students, and they were asked to complete the statement on the form. Later, the forms with students' own statements were collected, and content analysis were done on the collected data. The analysis of the data was realized in four phases: naming, categorization, ensuring validity and ensuring reliability (Saban, 2008). In the analysis of data, first, the papers filled by the students were numbered as S1, S2, etc. (Student1, Student2). The metaphors developed by the students were coded according to numbers. In the second phase, students' completed statements were examined, and the forms that the students did not provide any explanations for the metaphors were excluded from the process. A valid 52 metaphors with explanations were obtained. In the third phase, the statements completed by the students were rechecked. The metaphors developed by the students were examined according to their common characteristics. The valid 52 metaphors were grouped under three categories according to their common characteristics and justifications. In the fourth phase, data analysis process was explained in order to ensure the validity of study results, and the metaphors were listed. In addition, in the findings section, examples that were believed to best represent each of the three categories about the 52 metaphors were provided. For ensuring the study's validity, consistency between the coding the researcher did at two different times was examined in order to determine whether the metaphors were grouped under the related categories or not. For this, the researcher coded the metaphors twice in 15 days and tested her own consistency. As a result of this, the reliability coefficient was calculated to be .90. Here, reliability equals to agreements divided by agreements plus disagreements (Miles & Huberman, 1994).

FINDINGS AND INTERPRETATIONS

Table 1 - Preschool teacher candidates' metaphors about the concept of music and their percentages

Metaphor	n	%	Metaphor	n	%
friend	2		relaxation	1	
anti-depressant	1		soul	2	
love	1		food for the soul	1	
tea	1		feeds the soul	1	
chocolate	1		wind	1	
flower garden	1		windmill	1	
nature	1		psychologist	1	
our feelings	2		tranquilizer	1	
resting	1		love	1	
food	3		stress ball	1	
life	3		water	1	
life itself	1		desert	1	
medicine	1		treatment	2	
port	1		therapy	3	
massage	1		earth smell	1	
massage tool	1		sleep	1	

fairy tale	2	living	1
happiness hormone	1	living itself	1
breathing	1	eating	1
jumping from a cliff	1		
Total	52		

When Table 1 is examined, it is seen that preschool teacher candidates developed a total of 52 metaphors.

Table 2 - Categories about Metaphors

Category	n	%
language of feelings	7	
source of life	15	
peace giver	18	
Total	40	

40 metaphors developed by the teacher candidates were grouped under three categories according to justifications given by the students.

Table 3 - Language of Feelings

Metaphor	n	%
love	1	
happiness hormone	1	
nature	1	
our feeling	2	
jumping from a cliff	1	
wind	1	
windmill	1	
Total	8	

Metaphors given in Table 3 were grouped under the “Language of Feelings” category according to justifications provided by the teacher candidates. Some of the views of teacher candidates are given below as example:

“Music is like the happiness hormone because when we are sad and upset, it takes us away from that and adds happiness on top of our happiness when we are happy. And this positively affects us” (S38).

“Music is like nature because in nature there is a harmonious rhythm, too, between trees, birds, etc. Music creates a harmonious rhythm, too and makes us feel good” (S30).

“Music is like jumping from a cliff because it excites us and appeals to our positive and negative feelings” (S31).

“Music is like wind because it takes us from feeling to feeling. Just like the wind, wind leads our feelings” (S46).

Table 4 - Source of Life

Metaphor	n	%
food	2	
life	3	
life itself	1	
water	1	
living	1	
living itself	1	
food	3	
eating	1	
sleep	1	
treatment	2	
desert	1	
breathing	1	
soul	2	
food for the soul	1	
feeds the soul	1	
Total	22	

Metaphors given in Table 4 were grouped under the “Source of Life” category according to explanations provided by the teacher candidates. Some of the views of teacher candidates are given below as example:

“Music is like water because people cannot live without water. If water is need for people to survive, music is needed for feeding the soul. It connects people to life and gives life” (S26).

“Music is like food because it feeds the soul. When the soul is full, it connects to life more and becomes more harmonious” (S8).

Music is like food because when I listen to music, my soul becomes full. I look positively to life and connect more because my soul is full and satisfied” (S15).

“Music is like sleep because just like we cannot live and survive without sleep, we cannot live without music. Music is very necessary in our lives” (S38).

“Music is like life because it takes us both to past and to the future. In a very short time, it tells a whole life to us” (S39).

“Music is like treatment because when we are sad, it makes us feel better and connects us to life” (S4).

Table 5 - Peace Giver

Metaphor	n	%
friend	2	
anti-depressant	1	
love	1	
tea	1	
chocolate	1	
flower garden	1	
resting	1	
medicine	1	
port	1	
massage	1	
massage tool	1	
fairy tale	2	
stress ball	1	
earth smell	1	
theraphy	3	
relaxation	1	
psychologist	1	
tranquilizer	1	
Total	22	

Metaphors given in Table 5 were grouped under the “Peace Giver” category according to explanations provided by the teacher candidates. Some of the views of teacher candidates are given below as example:

“Music is like massage because it relaxes people and gives peace” (S57).

“Music is like a port because it is a place where people hide from the things they face and find tranquility” (S42).

“Music is like anti-depressant because anti-depressants relax the body and makes people feel better. Just like that, music relaxes the mind and gives peace” (S7).

“Music is like a friend because our friend is with us during our happy times and sad times. They relax us. Just like a friend, music always gives us peace and happiness” (S5).

“Music is like therapy because just like how people relax while they take therapy, they also find peace while listening to music” (S1).

“Music is like chocolate because just like how people become happy when they eat chocolate and find peace, they also find peace while they listen to music” (S23).

RESULT AND RECOMMENDATIONS

Preschool teacher candidates produced 52 metaphors about the concept of music. These metaphors were grouped under three categorical titles named language of feelings, source of life and peace giver. Based on these findings, it can be said that teacher candidates regard music as significant in their lives and ascribe positive meanings to the concept of music. It is very fortunate for these teacher candidates to assign positive meanings to the concept of music especially because as preschool education majors they have taken Music Education 1 and Music Education 2 courses while they were juniors and especially because music is very helpful in children’s development during preschool.

Particularly having music activities in educational planning during preschool plays a very important role in the child’s social, affective, cognitive and physical development. Therefore, music education given during this period is very crucial (Kılıç, 2011). Because of this, it is very important for preschool teacher candidates who will teach music during preschool to have positive thoughts about music. However, when the literature is reviewed, it is seen that there are limited number of studies on preschool teachers, preschool teacher candidates and music course in our country. Further studies on this subject is recommended. In addition, the metaphors obtained within the framework of the study results can be turned into scale items, and scales determining the perceptions about the concept of music can be developed. New studies examining the relationships between the metaphors developed and various variables can be conducted. Finally, metaphors can be used as data collection tool in order to determine individuals’ perceptions about different musical concepts.

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Presumptions for “International Trade” Studies – Comparison the Czech and Slovak Education System Effectiveness

Milos MARYSKA

*Faculty of Informatics and Statistics
University of Economics, Prague
Czech Republic
maryska@vse.cz*

Petr DOUCEK

*Faculty of Informatics and Statistics
University of Economics, Prague
Czech Republic
doucek@vse.cz*

ABSTRACT

The article compares the success rate of Czech and Slovak students who studied “International Trade” at the Faculty of International Relations during the years of 2009 – 2016. This comparison is used as a starting point for comparing the education systems of both countries in terms of preparedness for this type of studies. The basic source of data included the university’s internal information system that contains data concerning both entrance exam results and failed or completed studies. For the actual research, we present the research question saying that Slovak students are more motivated to complete the studies than Czech students. This is how we want to find out the effectiveness of the education systems in the Czech Republic and the Slovak Republic with respect to International Trade studies. For the primary analysis of 13,230 records, we used standard statistical functions. To calculate the parameters of the Logit model, we used the functionality of the SPSS product. We calculated the probability of successful completion of the studies only based on the records showing completed or failed studies.

Key words: International trade education, Education systems, Students

INTRODUCTION

The measuring of effectiveness and usefulness of the education systems in individual European countries is one of the important characteristics of investing public funds into the education of young people in particular. This education focuses on a variety of specializations – from technical and managerial all the way to humanities (Danel, 2016). As the European collaboration keeps growing, there is more need for professionals with interdisciplinary and multicultural knowledge and skills, which especially includes the ability to communicate in different languages for different cultural environments (Rodriguez-Muniz, Diaz, Mier & Alonso, 2016), to understand different customs and to have knowledge of statistics, management, accounting, human resources management, project management and risk management (Svátková, and Maryska, 2016, Nedomova Svatkova, 2016). Students applying to this field of study (International Trade) must pass two entrance exams. The first one is an English exam that tests the applicants’ knowledge of grammar and vocabulary as well as their ability to accurately express themselves (Zaif, Karapinar & Eksi, 2017)). The second one is a math exam that tests the applicants’ ability to think logically and to work with abstract concepts. Based on the results of these entrance exams, the best applicants are accepted to the university. The “International Trade” study field has a large percentage of foreign students who, however, study in the Czech language. This is why foreign students must also pass the Czech entrance exam (Maryska, Doucek, Mikovcová and Nedomova, 2013). Due to the similarity of the Czech and Slovak languages, Slovak students, who completed high school and passed the baccalaureate exam in compliance with the Slovak laws in the Slovak language, are not required to take this exam. By comparing the entrance exam results, we are able to compare the education systems of both countries in terms of preparedness for the “International Trade” study field.

PROBLEM FORMULATION

The goal of this article is to:

- Analyze the entrance exam results of Czech and Slovak applicants interested in the “International Trade” study field;
- Analyze the results;
- Evaluate and compare the success rate of Czech and Slovak students in studying “International Trade,” based on their entrance exam results;
- Compare the effectiveness of the education systems of both countries in terms of preparedness for the “International Trade” study field.

Furthermore, we have formulated one research question - RQ: **Slovak students are more motivated to study and are more successful because they left their country to study at a prestigious foreign university.**

MATERIAL AND METHODS (DATA COLLECTION)

All analyzed data came from the pedagogic part of UEP’s internal information system, which includes both data about entrance exams, including data about applications, and data about exams taken during the studies. In compliance with the topic of this article, we selected the data concerning Czech and Slovak applicants and then students of the undergraduate “International Trade” study program in Czech. Citizenship was the criterion for including students in our research.

We analyzed the select data, using standard statistical functions. To calculate the probability of successful completion of the studies based on the number of points obtained in the entrance exam (the Logit model - Hebák, Hustopecký and Malá, 2005), we analyzed the correlation between the entrance exam results and successful completion of the studies. The analysis included data records about failed and completed studies. We excluded the records of all students who have not yet completed their studies for whatever reason – suspension of the studies, etc. We converted the completion of studies to binary variables: successful completion – 1, failed completion – 0. To calculate the correlation values, we used the logistic regression, where the binary variable completion of study was the dependent variable and the number of points obtained in an entrance exam (PE) was only one independent quantitative continuous variable (Kuncova & Wasserbauer, 2007; Rezankova, 2010). The probability of studies completion is marked as p . Then:

$$\ln(p/1-p) = \beta_0 + \beta_1 PE \quad (1)$$

where PE is vector with number of obtained points from entrance exams,

β_0 - constant,

β_1 – increment - points from entrance exam,

p - probability of successful studies completion.

To calculate the actual correlation, we used the SPSS package function, and to accept or reject the null hypothesis of regression parameters being zero we used the Wald test (Rezankova, 2010) where we rejected this hypothesis if the Wald test was higher than zero.

The correlation (1) shows that

$$p = e^{(\beta_0 + \beta_1 * PE)} / 1 + e^{(\beta_0 + \beta_1 * PE)} \quad (2)$$

where

β_0 – constant,

β_1 – increment - points from entrance exam,

PE - is number of points obtained in an entrance exam,

p - the estimated probability of successful studies completion if a certain number of points is obtained in an entrance exam.

The values β_0 and β_1 shall be obtained from the data processed using the functionality of the SPSS product.

In compliance with the provisions of Act No. 101/2006 of Coll., on the protection of personal data, we set the data anonymous during our research in order to make it impossible to track down specific persons based on the analyzed data. The analysis was conducted for individual years as well as for the entire set of data.

GENERAL DATA CHARACTERISTICS

For our research, we identified 13,229 records about the entrance exam for the “International Trade” study field during the years of 2009 – 2016.

Table 1. The number of applicants from the Czech Republic and the Slovak Republic

Year	Czech Applicants	Slovak Applicants	Total
2009	1720	154	1874
2010	1557	172	1729
2011	1700	192	1892
2012	1589	163	1752
2013	1492	146	1638
2014	1383	132	1515
2015	1181	113	1294
2016	1381	154	1535

Of this total number, every year there are approximately 8 – 10 % of applicants from the Slovak Republic, i.e. the majority of applicants are from the Czech Republic. This fact shall affect the follow-up results of our analysis, e.g. the average of points obtained in the entrance exam for the entire data sample, etc. The following section provides other research results.

RESULTS AND DISCUSSION

The research results focus mainly on two areas, i.e. entrance exam results and the probability of successful completion of the studies. These two areas are analyzed separately for Czech students and for Slovak students.

THE NUMBER OF APPLICANTS

Table 2 shows the number of applicants from both countries during the analyzed time period from 2009 to 2016.

Table 2. Participation and entrance exam results in %

Year	CZE			SK		
	The applicant did not take the entrance exam	The applicant was accepted	The applicant not accepted	The applicant did not take the entrance exam	The applicant was accepted	The applicant not accepted
2009	18.10	43.88	38.02	13.90	29.83	56.27
2010	23.74	32.85	43.41	22.71	24.41	52.88
2011	25.00	35.33	39.67	27.89	23.81	48.30
2012	18.82	42.77	38.41	17.44	35.66	46.90
2013	21.17	42.82	36.01	17.14	31.02	51.84
2014	22.89	41.51	35.60	16.67	35.24	48.10
2015	24.52	39.16	36.33	22.03	31.64	46.33
2016	26.04	30.95	43.02	22.73	29.22	48.05
Total	22.28	38.92	38.81	20.02	29.72	50.26

On average 22.3% of applicants (20% of applicants from the Slovak Republic) did not take the entrance exam during the analyzed time period, and this percentage is getting higher over time. This is because students can apply to several universities and, if accepted to one of them, they do not take the entrance exam at the other universities. This percentage, as well as the percentage of accepted students who did not register, essentially indicates the attractiveness of this study field for students. Approximately 39% of applicants (50% of applicants from the Slovak Republic) who took the entrance exam are accepted – the trend is slightly going up, with tendencies to oscillate.

ENTRANCE EXAM RESULTS

Entrance exam results represent one of the most important characteristics of the applicants. For the purposes of our research, we evaluated mathematics and English entrance exams and used average values to compare them over time. Since the obtained values from the data sample met the normality condition, we did not use median as a comparative value. Average values of points obtained in entrance exams show descending results in mathematics and oscillating results in English.

Table 3. The number of points obtained in entrance exams

Year	CZE		SK		Total	
	MAT	ENG	MAT	ENG	MAT	ENG
2009	64.47	71.09	72.91	76.55	65.43	71.72
2010	68.04	73.43	74.93	79.21	68.82	74.09
2011	61.30	72.26	69.55	75.62	62.16	72.61
2012	58.19	71.55	62.60	73.92	58.65	71.79
2013	54.29	71.54	63.13	74.88	55.27	71.90
2014	52.22	70.06	60.49	74.33	53.12	70.51
2015	51.69	70.26	58.98	72.53	52.42	70.48
2016	52.11	72.45	56.43	73.93	52.52	72.58
Total	58.84	71.62	66.25	75.45	59.64	72.03

The average values in both entrance exams taken by applicants who failed the entrance exam were considerably lower, but the number of points obtained by applicants from Slovakia in both exams was higher by about 5%.

Table 4 and Table 5 provide very interesting information about the entrance exam results of students who start or do not start studying “International Trade.” Table 4 presents the number of points obtained in both entrance exams by Czech and Slovak students by year.

Table 4. The number of points obtained in entrance exams – accepted applicants

Year	CZE		SK		Total	
	MAT	ENG	MAT	ENG	MAT	ENG
2009	84.28	81.42	83.34	82.17	84.14	81.54
2010	82.18	80.45	84.29	83.55	82.46	80.87
2011	76.75	78.55	78.91	79.92	77.03	78.73
2012	77.64	80.18	77.44	79.86	77.62	80.14
2013	75.82	80.20	78.53	82.40	76.22	80.51
2014	74.16	77.66	76.37	80.13	74.46	77.97
2015	72.24	77.50	75.33	78.09	72.61	77.56
Total	77.53	79.36	79.59	80.93	77.81	79.56

Note to Table 4: the data for 2016 are not shown since we used at least one passed exam as an attribute for whether or not the applicant started the studies, and this information was not available at the time this article was written.

The results clearly show that Slovak students had very slightly better results in both exams; however, the number of points obtained in both exams keeps going down in the long-term.

Table 5 includes a warning.

Table 5. The number of points obtained in entrance exams – accepted applicants who did not start the studies

	CZE		SK		Total	
Year	MAT	ENG	MAT	ENG	MAT	ENG
2009	84,31	81,52	83,69	82,34	84,21	81,66
2010	82,20	80,26	84,39	82,98	82,50	80,63
2011	76,64	77,84	78,67	79,87	76,88	78,08
2012	77,76	80,00	77,04	78,52	77,67	79,83
2013	76,63	79,94	79,59	81,78	77,08	80,20
2014	74,56	77,41	75,63	78,95	74,71	77,60
2015	72,48	76,89	76,77	77,53	72,99	76,96
Total	78,44	79,19	80,17	80,71	78,68	79,40

Note to Table 5: the data for 2016 are not shown since we used at least one passed exam as an attribute for whether or not the applicant started the studies, and this information was not available at the time this article was written.

This Table shows that the average number of points obtained in entrance exams by applicants who in the end did not start the studies was higher than the average number of points obtained by students who started the studies. Therefore, we can conclude that the best applicants do not always start the studies and that some of the applicants whose entrance exam results were above-average do not start the studies and find another type of university or field of study more attractive.

SUCCESS RATE MODELING

As already mentioned in the part “Material and Methods,” the following section presents the findings based on the Logit model principles. In this case, we analyzed the probability of successful completion of the studies if a certain number of points is obtained in the entrance exams. In the first part of our analysis, we analyzed only the impact of the number of points obtained in the English entrance exam. The results are provided in Figure 1.

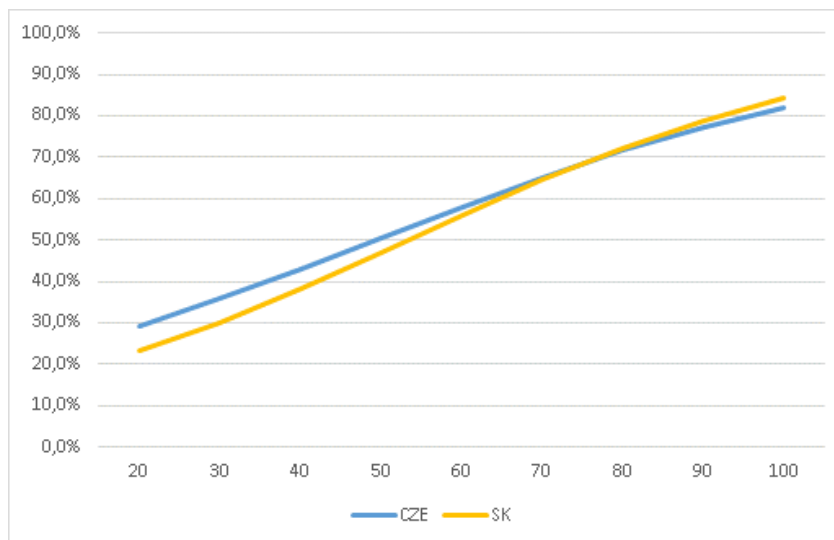


Figure 1. Logit model – English entrance exam results

The results show an interesting fact: with a lower number of points obtained in the English entrance exam, Czech students have a higher study success rate. These success rates even out at around 75 points, and with a higher number of points obtained in the English entrance exam, Slovak students have a higher study success rate. It is interesting that the model results practically show a linear correlation between the entrance exam results and the probability of successful completion of the studies, in particular in Czech students.

The relationship between mathematics entrance exam results and the probability of successful completion of the studies shown in Figure 2 is very similar.

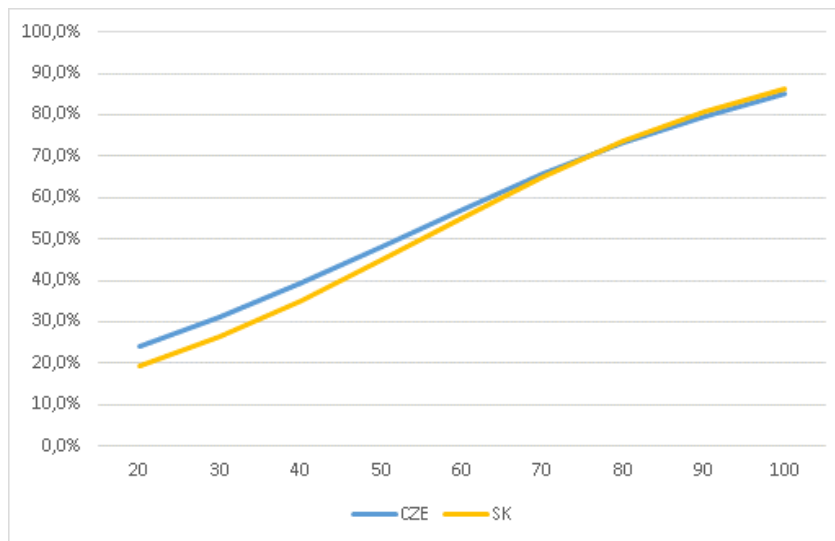


Figure 2. Logit model – mathematics entrance exam results

The discovered impact of mathematics entrance exam results on the study success rate is very similar to that of English entrance exam results. Both curves show even a smaller difference than in the case of Figure 1. The success rates of Slovak applicants and Czech applicants even out at 80 obtained points, and both curves are practically the same at a higher number of points.

In order to fully analyze the impact of entrance exam results on the probability of successful completion of the studies, we also modeled the probability of successful completion of the studies for the total points obtained in both entrance exams. The main reason was to verify whether students who did well in one entrance exam did not obtain a considerably lower number of points in the other exam, which would reflect in their study success rate. This relationship is displayed in Figure 3.

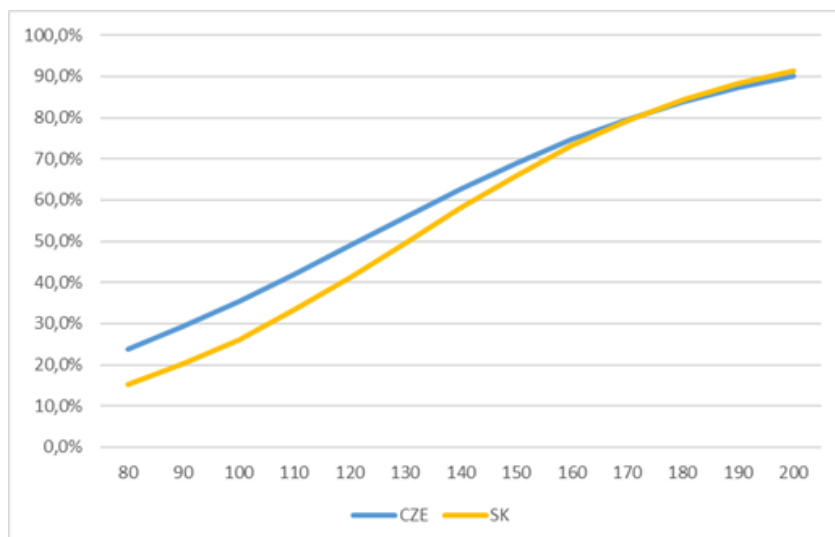


Figure 3. Logit model – points obtained in both entrance exams

The results show that the probability of successful completion of the studies evens out at 180 obtained points, where it exceeds 80%. The model results did not confirm any major difference between the results in individual

entrance exams. Therefore, we can conclude that students who are good in English are also good in mathematics and vice versa. Based on experience, it is reasonable to accept students with a 50% and more probability of successful completion of the studies, which in our case means starting with 120 points for Czechs and 130 points for Slovak students. However, this is only a theoretical thought since the faculties set one limit for all students and do not take into consideration students' citizenship.

CONCLUSIONS

Based on our findings, we can say that we were not able to prove any major difference in the effectiveness of the education systems for the "International Trade" study field between the Czech Republic and the Slovak Republic. We were not able to provide a clearly positive answer to our Research Question either.

It is startling that students who obtain less than 120 or 130 points in the entrance exam have less than a 50% probability of successfully completing the studies (if we disregard any external or internal factors).

There are several options of how to increase this probability, i.e. how to help students to overcome the pitfalls of university studies (ShuangYing, 2015). The **first option** is to implement mock exams that shall help to improve entrance exam results. This may seem unnecessary because a higher number of points obtained in the entrance exam shall not automatically increase the study success rate. Nevertheless, mock exams may remove stress and psychological barriers of students who would be interested and would start the studies (the percentage of accepted but non-registered students shall decrease). **Another option** is to make the studies more attractive for applicants so that this field of study would become their highest priority, which would reduce the number of students who do not take the entrance exam or are accepted but do not start the studies. We are planning to perform a similar analysis by gender and, based on this analysis, to make recommendations for making this field of study more attractive. Foreign universities usually have student crisis centers (Danel, 2016) that, however, are not activated unless there is some major study or personal crisis. UEP also has a similar center, but it does not get activated at all in the case of slowly accumulated study problems. The **last option** includes the evaluation of study system data (working with exercise materials, how often students connect to the computer network, etc.), monitoring of students' activities and communication with students who stop these activities.

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Primary School Students' Metaphors About the Concept of Mathematics

Nihan SAHINKAYA

*Educational Sciences Faculty
Istanbul Medeniyet University,
Turkey
nihan.sahinkaya@medeniyet.edu.tr*

Çiğdem KILIÇ

*Educational Sciences Faculty
Istanbul Medeniyet University,
Turkey
cigdem.kilic@medeniyet.edu.tr*

ABSTRACT

Metaphors, though known as language term, are used to reveal the perceptions of individuals currently. They reflect ideas and perceptions like a mirror. Use of metaphors may help to determine perceptions of individuals especially on difficult concepts. This study aimed to reveal the primary students' perceptions related with mathematics through metaphors. Study was conducted during 2016-2017 school year with 335 primary school students (182 third-graders and 153 fourth-graders) from two public schools located in Istanbul. Each student was asked to complete the blanks in given sentence of "Mathematics is like . . . , because . . .". The results collected from the students were categorized and the similar metaphors were grouped. Accordingly, thirty-five and twenty-nine different metaphors collected from third and grade students, respectively, were further analyzed. The common metaphors created by third and fourth grade students are "Game", "Life" and "Puzzle". It seems that both third and fourth grade students have positive perceptions towards mathematics and most of them find mathematics enjoyable.

Key words: metaphor, mathematics, primary school students

INTRODUCTION

Mathematics is sometimes wonderful or sometimes weird and contradictory feelings, love and hate, may appear when we work with it. Mathematics is like a stern parent, who loves you but could not express their emotion, so you have to get their permission (Ernest, 2010). Students' beliefs about the mathematics are linked with the role of mathematics in their daily life and school life. Metaphors help to understand their feelings or beliefs about mathematics (Schinck & al., 2008). Metaphor is usually known as a language term but Lakoff and Johnson (1980) stated that it is in thought and action. According to them, "*Metaphor is principally a way of conceiving of one thing in terms of another, and its primary function is understanding*". Modell (2009) described the metaphor as the currency of the mind.

Students' beliefs or perceptions about mathematics were investigated via metaphors. Using metaphors helps to understand students' internalized views about mathematics. Ninth and tenth grade students defined mathematics as useful tool for themselves and their society (Schinck & al., 2008). There are several studies trying to examine middle school and high school students (Gür, Hangül & Kara, 2014; Oflaz, 2011, Güner, 2013a) pre-service teachers and teachers' metaphorical perceptions on mathematics (Kılıç & Yelken Yanpar, 2013; Güner, 2013b; Şahin, 2013; Şengül & Katrancı, 2012; Güler & al, 2012; Güveli & al, 2011; Schinck & al., 2008), however only a handful studies (Ummannel, 2017; Tuncer & Sahinkaya, 2016) on primary school students' metaphorical perceptions about mathematics have been conducted in the literature.

In this study, it was aimed to reveal primary students' perceptions related with mathematics through metaphors. In this context, the answers of following questions were examined.

- What are the metaphors and the categories of the third grade students related with mathematics concept?
- What are the metaphors and the categories of the fourth grade students related with mathematics concept?

THE STUDY

Method

In this qualitative study, a totally of 335 (182 third grades and 153 fourth grades) students attended. The students were selected from two primary schools with middle socio-economic level located in Istanbul.

Data collection

Data were collected by researchers with one lesson hour for each class in spring semester of 2016-2017 academic-year. All students voluntarily agreed to participate in the study. Each student was asked to complete the blanks in given sentence of “Mathematics is like . . . , because . . .”.

Data analysis

The metaphors created by students were listed. Some data were eliminated because the responses were not appropriate for metaphor definition and some of the students did not complete the task. A total of 16 and 20 responses were eliminated from third and fourth grades, respectively. The responses were independently analyzed and categorized by the researchers. In order to test the reliability, the evaluations of the researchers, whether the response can be accepted as metaphor or not, were analyzed using the formula $\text{reliability} = \frac{\text{number of agreement}}{\text{total number of agreement} + \text{disagreement}} \times 100$ (Miles & Huberman, 1994). The agreement between the two researchers was calculated as 90%, which shows high reliability between coders. The metaphors and categories obtained from research data were presented in the form of frequency-distribution tables.

FINDINGS

Third grade students’ metaphors about the concept of mathematics were listed as frequency-percentages distribution and given in Table 1.

Table 1. Third grade students’ metaphors about the mathematics.

METAPHORS	f	%	METAPHORS	f	%
Game	32	19.3	Flower	1	0.6
Life	28	16.9	Language	1	0.6
Intelligence	21	12.7	Mind	1	0.6
Puzzle	18	10.8	Idea	1	0.6
Information	14	8.4	Food	1	0.6
Science	11	6.6	Watermelon	1	0.6
Friendship	6	3.6	Hair	1	0.6
Road	4	2.4	Needle	1	0.6
Problem	2	1.2	Competition	1	0.6
Brain	2	1.2	Question	1	0.6
Dream	2	1.2	Making a car	1	0.6
Exam	2	1.2	Die	1	0.6
Job	2	1.2	Mental gymnastics	1	0.6
Water	1	0.6	Tale	1	0.6
Car	1	0.6	Heaven	1	0.6
Tree	1	0.6	Physical development	1	0.6
Notebook	1	0.6	Baklava (traditional Turkish dessert)	1	0.6
Light	1	0.6			
TOTAL				166	100

Table 1 shows that third grade students produced 35 different metaphors totally. Twenty-two metaphors have frequency of 1.0, which means only one student has used these metaphors for the definition of mathematics. The

number of metaphors written only once was. The most repeated metaphors were “Game”, “Life”, “Intelligence” and “Puzzle”, which means 20% of third grade students see mathematics as a “Game”.

Third grade students’ metaphors were also categorized. Some metaphors belong to more than one category depending on students’ responses. Table 2 shows the categories and the metaphors belonging each category together with the frequencies (given in parentheses).

Table 2. The categories and metaphors of third grade students possess

CATEGORIES	METAPHORS
Informative	Intelligence (11) Science (9), Life (10), Information (14), Road (4), Idea(1), Car (1),
Enjoyable	Game (15), Life (5), Puzzle (18), Competition (1), Mental gymnastics (1), Physical development (1)
Easy	Game (30)
Existence	Life (20), Water (1) ,Exam (2), Information (1)
Happiness	Baklava (1), Food (1), Watermelon (1), Dream (2), Tale (1), Heaven (1) Friendship (6),
Complexity	Hair (1), Brain (2) Life (5), Tree (1), Mind (1), Question (1), Flower (1), Making a car(1)
Guiding	Intelligence (10), Science (2) Light (1)
Necessity	Information (5), Job (2),Notebook (1), Language (1)
<i>Difficulty</i>	Problem (2)
<i>Painful</i>	Needle (1), Die (1)

A total of ten categories were defined to better analyze the metaphors created by the students (Table 2). The metaphors of “Life”, “Game”, “Information” and “Science” were listed under more than once category. Metaphors created by students were generally listed under the categories of “Informative”, “Enjoyable”, “Easy” and “Existence”. Only few metaphors were listed under the categories of “Difficulty” and “Painful”. Hence, most of the students have positive feelings about mathematics.

Some examples of students’ responses and the category, under which it is defined, are: “*Mathematics is like intelligence because it provides information (informative)*. *Mathematics is like a science, because both of them give information (informative)*. *Mathematics like a puzzle, because game and mathematics are so enjoyable (enjoyable)*. *Mathematics is like a game, because both of them are easy for me (easy)*. *Mathematics is like life, because it is basis of everything (existence)*. *Mathematics is like a baklava, because I like mathematics (happiness)*. *Mathematics is like a hair, because mathematics may be complex as hair (complexity)*. *Mathematics is like intelligence, because it always guiding (guiding)*. *Mathematics is like information, because it is necessity to do best (necessity)*. *Mathematics is like problem, because I think that it is difficult (difficulty)*. *Mathematics is like a needle, because I feel that needle and mathematics hurts me (painful)*.”

Fourth grade students’ metaphors about the concept of mathematics were listed together with frequency-percentages distribution in Table 3.

Table 3. Fourth grade students' metaphors about the mathematics

METAPHORS	f	%	METAPHORS	f	%
Life	26	20	Intelligence	1	0.7
Puzzle	22	17	Dancing	1	0.7
Game	21	15.8	Tree	1	0.7
Stairs	14	10.5	Plane	1	0.7
Problem	12	9.0	Running	1	0.7
Mind	5	3.7	Cartoon	1	0.7
Bicycle	4	3	Labyrinth	1	0.7
Brain teaser	4	3	Step	1	0.7
Science	4	3	Earth	1	0.7
My life	2	1.5	Information Source	1	0.7
Car	1	0.7	Cooking	1	0.7
Experiment	1	0.7	Art	1	0.7
Brain	1	0.7	Poison	1	0.7
Water	1	0.7	Friend	1	0.7
Elevator	1	0.7			
TOTAL				133	100

According to Table 3, it can be said that fourth grade students produced 29 different metaphors totally. Nineteen metaphors have the frequency of one, which means they are only used by one student. The most commonly repeated metaphors were “Life”, “Puzzle”, “Game” and “Stairs”. It can be said that “Life” was produced by 20% of fourth grade students.

Fourth grade students' metaphors were categorized similar to the third grade students' responses. Some metaphors belong to more than one category depending on students' responses. Categories and metaphors and their frequencies (given in parentheses) were given in Table 4.

Table 4. The categories and metaphors of fourth grade students possess

CATEGORIES	METAPHORS
Enjoyable	Game (15), Fun (12), Problem (7), Puzzle (10), Dancing (1), Running (1)
Guiding	Stairs (7), Life (6), Problem (5), Mind (5), Science (4), Intelligence (1), Labyrinth (1), Brain teaser (4), Brain (1), Tree (1)
Formative	Stairs (10), Life (4), Game (8), Bicycle (4), Car (1), Elevator (1), Plane (1), Cartoon (1), Step (1), Friend (1)
Existence	Life (16), My life (2), Water (1), Cooking (1), Earth (1),
Informative	Experiment (1), Information Source (1)
Complexity	Art (1),
Difficulty	Poison (1)

Seven categories were selected to analyze the metaphors created by the students. “Life”, “Game”, “Information” and “Science” metaphors are listed more than once category. Most of the metaphors created by students were primarily collected under the categories of “Enjoyable”, “Guiding” and “Formative”. Only few metaphors were listed under the categories of “Complexity” and “Difficulty”. So, similar to the third grade students results, fourth grade students have positive feelings.

Some examples of students' responses: “*Mathematics is like **game**, because I enjoy with mathematics*”(enjoyable). “*Mathematics is like **stairs**, because it guides to us*” (guiding). “*Mathematics is like **stairs**, because you improve step by step*”(formative). “*Mathematics is like **life**, because mathematics is in life and everywhere in life*” (existence). “*Mathematics is like **experiment**, because it gives information*”(informative). “*Mathematics is like **art**, because art has some complex picture*”(complexity). “*Mathematics is like **poison**, because if you are not able to doing mathematics, your brain will be poisoned*”(difficulty).

CONCLUSIONS

Third and fourth students created thirty-five and twenty-nine metaphors, respectively. Both third and fourth grade students commonly used the metaphors of “Game”, “Life” and “Puzzle” to express their feelings about mathematics. For the third and fourth grade students, “Intelligence” and “Stairs” are the fourth mostly used metaphors, respectively. Metaphors produced by third grade students’ were collected within ten categories. The categories of “Informative”, “Enjoyable”, “Easy” and “Existence” have more metaphors than the other categories. Twenty-nine metaphors were listed within seven categories for fourth grade. “Enjoyable”, “Guiding”, “Formative” and “Existence” is the first four categories for fourth grade students. It can be said that “enjoyable” and “existence” are the common categories. The categories of “Difficulty”, “complexity” and “painful” refer to negative perceptions with a few metaphors for both grades. These findings are consistent with Tuncer & Sahinkaya (2016), Ummanel (2017) and (Schinck & al, 2008). Tuncer & Sahinkaya (2016) found that fourth grade students’ metaphors were categorized at the category of “joyous” primarily. According to Ummanel (2017), students have positive attitudes towards mathematics. Schinck & al (2008) stated that students thought that mathematics was a useful tool. According to metaphor analysis results, Oflaz (2011) found that students have negative perceptions on mathematics.

As a result of the study, it can be said that both third and fourth grade students have positive perceptions towards mathematics and mathematics is enjoyable for them. The reason may depend on various factors, such as students’ interest on mathematics, their teachers’ attitude, their parents’ attitude, etc. These factors and their effect on students’ perceptions on mathematics may need to be examined further. Especially, determining the reasons of the negative feelings, some students have, understanding their feelings and trying to alter their feelings are important.

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Project Teaching at University - A Tool for Presenting Proposals for Prevention and Solving the Problem of the General Public

Ing. Martina JUŘÍKOVÁ

Faculty of Multimedia Communication

Tomas Bata University in Zlín

Czech Republic

jurikova@utb.cz

Mgr. Josef KOCOUREK

Faculty of Multimedia Communication

Tomas Bata University in Zlín

Czech Republic

kocourek@utb.cz

Mgr. Eva GARTNEROVÁ

Faculty of Multimedia Communication

Tomas Bata University in Zlín

Czech Republic

gartnerova@utb.cz

ABSTRACT

Work on the "Water for All" project started in October 2016, when all 11 ateliers of the Faculty of Multimedia Communications, the Department of Marketing Communications and the Department of Theoretical Studies worked on research, analyses, graphic and conceptual solutions for the prevention of a society-wide problem - water management. The main objective of the project is to analyse, implement and present possible solutions (specific design of products or prototypes) or communication tools and their content (graphic designs, results of research on water management) but also the overlap of project teaching into the higher education process and brandbuilding of the university. A partial aim of the project and the main part of this paper is a presentation of research results and proposals for prevention and solution of the problem of water management in the Czech Republic with a warning about the loss of water in nature.

INTRODUCTION

Higher education is different from the concept of secondary education. Paul Ramsden (1992), based on the research of university teachers and students, formulated six principles of university education:

Principle 1: Quality of presentation and influencing of study interests of students. The university teacher should have the ability to select and present the curriculum so that it is interesting and stimulating for students. From a learner's point of view, it is essential that the teacher can choose key and crucial themes, structure them in overviews, refer to literature, research, application, practicality, and use experience. During a lecture the teacher should focus on key issues and structures, perceive student incomprehension, and adapt the lecture to it.

Principle 2: Interest in students, respecting students and their teaching. University teachers should be aware of whom is the lecture intended for and to what extent students are ready for difficult themes they intend to present. They should therefore know their learning backgrounds and educational needs, leave room for questions, perceive misunderstandings and mistakes, help to correct them and adjust their teaching.

Principle 3: Appropriate assessment and feedback. Teachers set their requirements for student performance, usually as a range of knowledge and skills within a given discipline or course/ subject. The assessment has a partial (e.g. during a credit test) or a summarizing character (e.g. at a state examination). Assessment requires a considerable focus of the teacher, ability to compare and differentiate, and to be objective. In order to prevent mistakes in the evaluation, it is recommended that teachers set out clear rules, requirements and evaluation

criteria and familiarize students with them in a timely manner. Feedback to students brings into focus whether the results of their study effort and content comprehension correspond to set learning requirements. The most effective feedback is included in the course. It can take the form of a discussion, pre-test, post-test, computer program, specifically targeted individual or group study tasks, a consultation interview and the like.

Principle 4: Clear objectives and intellectual stimuli. Teacher's teaching activities and student's learning activities should form a complementary pair in terms of educational goals. Therefore, the objectives must be formulated not only in binding higher education documents, but also in the design of teaching in individual disciplines or courses/ subjects. They should also be clear in individual teaching units and themes. The more they are specified and better expressed, the more they facilitate the study of students, motivate for learning and give direction to the study effort.

Principle 5: Independence and active involvement of students in lecture. Independence is one of the characteristics of university studies. Students assume responsibility for their learning outcomes. Independence, however, cannot be confused with the loneliness and the helplessness of students. Students need guidance, help and support of their teachers. The student should study, think, ponder, discover. In the classroom the teacher should create the conditions for these intellectual activities, i.e. to assign individual or group activities, to give space for their presentation, opposing and peer evaluation. Each college teacher should have a set of teaching methods based on the activity of the students in the discipline they are teaching. A prerequisite for success is the deep knowledge of their field, thorough preparation of study tasks, communicative and managerial skills, ability to improvise.

Principle 6: Learning from students. To learn from students means to recognize them as developing personalities, to explore their study possibilities and styles, educational interests, to estimate their responses, to identify their educational needs and interests, to take into account their opinions and criticisms, and then include them in the teaching strategies that need to be improved all the time and that way continually professionalize. If the teacher creates the right conditions, then the students bring their ideas and solutions to the lesson.

Vašutová (1999) reports frequent dissatisfaction with the traditional Czech university education, in which the monologue of the university teacher is dominated and the passivity of the students is tolerated. In higher education, there is a need to create such learning conditions for students that their educational needs and individual profile and abilities will be respected. At the same time, students should not be just consumers of presented knowledge, but they themselves should be involved in their discovery, acquisition and usage. To such approaches, the conditions are given by group project teaching.

Project teaching is based on a project method (Kratochvílová, 2006). The project is understood as a complex task in which students solve a particular problem (problem task, problem situation, etc.). Using this teaching method, students are encouraged to independently process certain complex tasks or solve problems associated with life reality. A characteristic feature of project teaching is a goal, which is represented by a specific output, i.e. a product or a practical solution to the problem. Projects often take the form of integrated topics, they use inter-subject relations.

The aim of the project teaching is to present information in context and to present phenomena in an interdisciplinary way. It is a unique system of teaching, which is focused, among other things, on preparation of students for practice.

Characteristics that the project should include, inter alia Coufalová states:

- The project is based on needs (the need to gain new experience, responsibility for own activities, ...) and interests of students, as well as society.
- The project is based on a specific and up-to-date situation that is not limited to the school environment.
- The project is interdisciplinary.
- The students' work in the project brings a specific product, i.e. the output that the project participants present.
- The project allows the school to be integrated into the life of the community or the wider public.

Project teaching is a heuristic method. The core of heuristic methods (from the Greek word *heuréka* - I found, I discovered) is the problematic situation the student solves independently, with the gradual help of the teacher. Maňák and Švec (2003) define this situation as a penetration of a difficult, unclear and new situation. J. Skalková (1999) states that awareness of the problem situation is the beginning of all thinking. The knowledge and skills that a student discovers and gains during problem solving are more permanent than seemingly easier and faster memorized, pre-prepared, right solutions.

The main principles of successful heuristic methods include:

- activity - students must themselves actively seek, discover and solve;
- motivation - Students gain their own inner interest in solving tasks, problems;
- phase progress - students learn to organize their thinking according to the heuristic model, learn regulation and self-regulation during solving problems and creative work.

An efficiently managed project within the project teaching should go through the same phases as for instance a business project, i.e. planning, implementation and controlling phase. At the beginning, it is important to specify the aim of the project, to formulate objectives and results of the project (i.e. measurable outputs and their meaning/ purpose). It is also necessary to plan partial questions, themes and activities related to them. After that, the project itself is carried out and, finally, the assessment of whether the objectives have been achieved. The evaluation should ideally take place in the mutual dialogue of the teacher with the students, but also between the students, so that they can critically develop some activities and inspire each other to solve them.

Positive Implications of Project Teaching on a Student:	Positive Implications of Project Teaching on an Educator:
<ul style="list-style-type: none"> - gaining stronger motivation to learn; seeing the wider impact of their work and their contribution to the practice - assuming greater responsibility for the outcome of the work; - students' autonomy is developed as well as team competencies; they learn to collaborate with operatives from other fields, - learning to work with different sources of information; - learning to solve problems; construct their knowledge, - gaining organizational, management, planning, evaluation skills; - getting a global overview of the problem; - developing their communication skills across the team, disciplines and with the educators; - learning mutual respect; - developing creativity, activity and fantasy. 	<ul style="list-style-type: none"> - learning a new role, a counsellor role; - learning to perceive the student as a whole. There is a change in their thinking about students; - expanding their repertoire of teaching strategies; - using new assessment and self-assessment options; - expanding their organizational skills.
Negative Aspects on a Student Side:	Negative Aspects on Educator's Side:
<ul style="list-style-type: none"> - time demands of the project solution; - students are often not equipped with necessary competencies. 	<ul style="list-style-type: none"> - time demands of the project preparation; - evaluation difficulty.

Table 1: Positive and Negative Aspect Implications of Project

Universities should be actively involved in creating conditions and removing obstacles to human development in all countries of the world. They should teach their graduates responsible citizenship in a globalized world in all its complexity, interconnection and interdependence of individual components (Ecrigas, 2008). However, current attempts to address the major global challenges (poverty, hunger, war, disease, natural degradation and global

climate change) are ineffective, and the consequences of these problems prevent any development in most of the human population. For decades, there have been talks about systemic changes leading to sustainable development. Work on the project, leading to the prevention and partial solution of a societal problem, is the essence of this contribution, which is linked to the "Water for All" project, realized at the Faculty of Multimedia Communications of Tomas Bata University in Zlín from September 2016 to June 2017. Since then, each person in the Czech Republic consumed about 25,000 liters of water. Through design, film and marketing effectuated in 11 art ateliers and at the department of Marketing Communications, the project tried to communicate to the public that this number is too high. The unifying element was water, the fragility and importance of which the students tried to express in their work.

The Water for All project took place under the patronage of the Ministry of the Environment and had two main objectives. The first was to increase the awareness of the need for water management and to raise a debate on the subject with the general public. The second objective, which is also reflected in the name of the project, was cooperation, not only between the students themselves, but also between the Faculty and the city of Zlín, the production and non-profit sectors and the general public. The entire project was launched on September 21 at a conference entitled Expert Block: Water for All. Water management professionals presented their work to give visitors the opportunity to take a look at the topic from different perspectives. For example, Josef Nistler, Director of the Department of Water Protection of the Ministry of the Environment, Mark Rieder of the T.G. Masaryk Water Research Institute, or publicist Vladimír Kořen, took part in lectures. At the end of the conference, the speakers met in a panel discussion where they discussed, among other things, topics suggested by participants and students. The project involved 450 faculty students and created 360 unique outputs: a collection of clothes with print inspired by satellite images of drying Aral Lake, mobile applications that show users the source of drinking water in nature; a series of posters that highlight the necessity of water management, as well as architectural modifications of the river Dřevnice and Kudlov dam. Students of the department of Marketing Communications worked on a pilot survey, the partial results of which are the essence of this paper. The selected outputs of the project can be viewed at www.vodaprovsechny.cz.

METHODS

As was said before, The "Water for All" project has been structured into several phases:

1. Presentation of the problem to students in the form of an all-day conference with experts from various fields (geologist, designer, urban architect, water management expert, non-profit organization promoting the idea of efficient water management, etc.)
2. Creating a source information disk (library) where secondary analyses and materials on the topic, website, and corporate identity of the project are shared.
3. Regular consultations of the problem at the ateliers and the Department of Marketing Communications in the subjects. Assignment of seminar papers in relation to the project.
4. Processing whole-faculty and external presentations of product concepts on the topic "water management" in ateliers, exhibitions and results of a pilot survey at conferences.
5. Establishing further collaboration with companies and organizations to develop campaigns and prototypes of water management products.
6. Project evaluation.

By solving own research monoprojects, students can be brought to basic research attitudes. Students acquire following skills: • to separate and formulate a question; • prepare the data collection tool to an adequate question or problem; • find a suitable way of processing this data; • interpret findings in a way that does not exceed the validity of the data, and at the same time goes beyond a mere description of the collected data. The research conducted by students of the department of Marketing Communications was elaborated by the method of action research. Action research is understood as a systematic reflection of professional situations that is being conducted to innovate these situations. The term action research refers to action and its exploration, with the actor being a student in the role of a researcher. Action research demonstrates that the democratic participation of students becomes a practical reality in a 21st century higher education institution. It proves that research methods become the property of everyone. Systematic data collection and critical analysis can be effectively implemented not only by researchers but also by students. Students participating in action research observe, ask questions, analyze, share opinions, and evaluate results. Action research is described as a practical research that is being implemented by students as opposed to academic research conducted by academic

researchers. Stephen Kemmis (1983) defines action research as a form of self-reflection. It has a character of cyclical interventions rather than one-off interventions. Each intervention is evaluated in order to plan further steps. It improves the quality of pedagogical work and the results achieved (Schmuck 1997). The goal of action research is also to improve the students' professionalism, develop their thinking and skills, improve their decision-making processes, influence students' value orientation and strengthen their hope and belief in improving their experience. Action research within the "Water for All" project aimed to prepare and pre-test a questionnaire, which they then distributed to a pilot sample of university students, evaluated it and interpreted the results. The pilot questionnaire survey was conducted on a sample of 370 university students (258 women and 112 men) with the aim to identify the main motivations and attitudes of young people to water management.

FINDINGS AND DISCUSSION

As part of the hypothesis formulation, students assumed that respondents would be more sensitive to local water management, i.e. they would be more interested in how to address the prevention of water loss in the Czech Republic compared to the world's sustainability issues in the landscape. So, among other things, they formulated a battery of research questions where they asked, among other things: "Do you think people in the Czech Republic/ the world behave indifferently to water consumption?" and "Do you think the state (Czech Republic)/ world organizations engage in analyses and water management strategies?" It was measured on Likert's scale of consent.

Due to a narrowly age-profiled sample of respondents, the results were sorted according to gender to make it clear whether men respond to social problems more sensitively than women or not. Two hypotheses have been defined:

1. H_0 : "The perception of the issue of water management in the Czech Republic is not gender-dependent."
2. H_0 : "The perception of the participation of organizations (both world and Czech) in solving water scarcity is not gender-dependent."

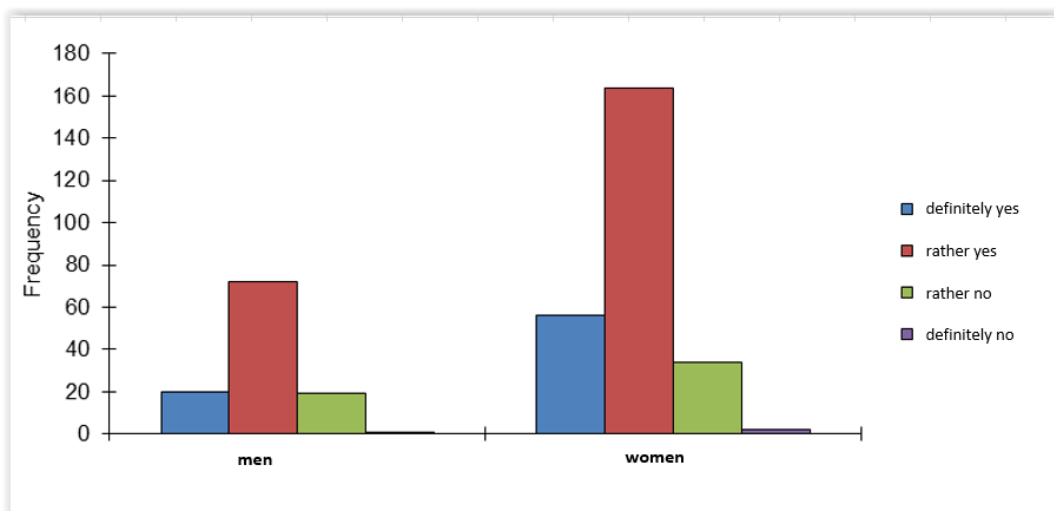


Figure 1: Indifference in Czech Republic

(Pearson) Chi-square Test	
H_0 : Variables are independent (no interaction between variables)	
H_1 : Variables are dependent (interaction between variables)	
Chi-square	1,35536
DF	3
p-value	0,716031

Table 2: Independence of indifference in Czech Republic and sex

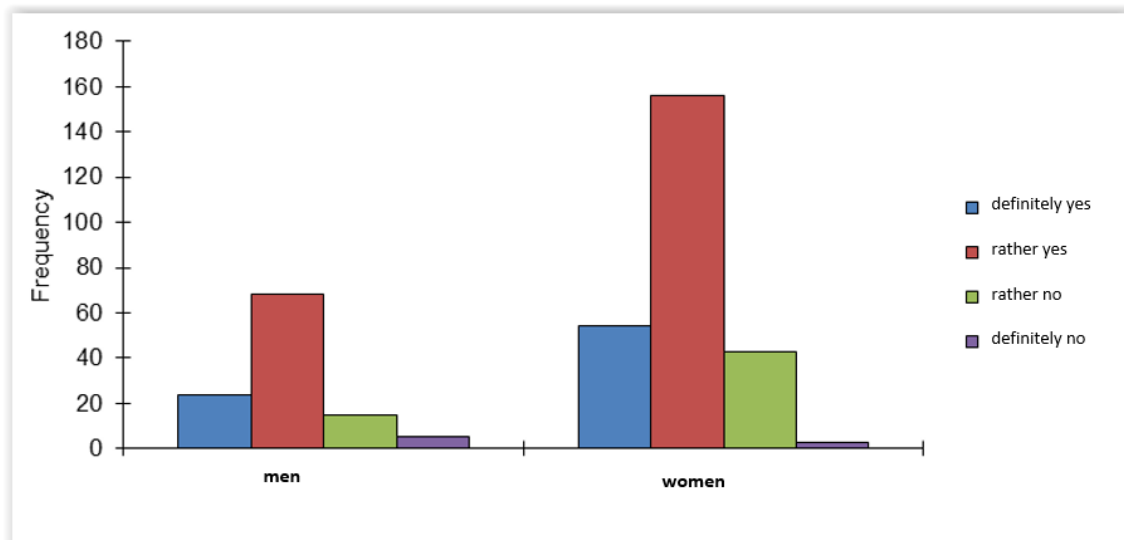


Figure 2: Indifference in world

(Pearson) Chi-square Test

H_0 : Variables are independent (no interaction between variables)

H_1 : Variables are dependent (interaction between variables)

Chi-square 4,462617

DF 3

p-value = 0,215649

Table 3: Independence of indifference in world and sex

(Pearson) Chi-square Test

H_0 : Variables are independent (no interaction between variables)

H_1 : Variables are dependent (interaction between variables)

Chi-square 4,614515

DF 3

p-value = 0,2023

Table 4: Independence of Strategy in Czech Republic and sex

(Pearson) Chi-square Test

H_0 : Variables are independent (no interaction between variables)

H_1 : Variables are dependent (interaction between variables)

Chi-square 4,588924

DF 3

p-value = 0,204494

Table 5: Independence of Strategy in world and sex

Within the analyses, contingency tables were created and frequency charts of individual variables and hypotheses were tested by the Chi-square test, with all p-values being higher than 0.05. From the above tests, the distribution is defensively gender-independent (at least according to our sample, which can testify to the judgment of young students of art-oriented schools in general). Therefore, there is a premise that young people perceive the issue of water management very actively and independently of gender. Their perception is slightly more sensitive to the prevention of water spill from nature in the Czech Republic. 5 % of respondents mentioned companies and corporations as organizations responsible for water management, 5% mentioned the world's organizations, 7 % government of the Czech Republic and the appropriate ministries. Most of them, however, determined themselves being responsible, or more precisely each individual, in 81 % of cases. A key factor in our adaptation to changing environments will therefore be the ability to change people's thinking. History is known for civilizations that have had to cope with the change of their environment during two generations. Thilo Lehmann from the Vienna City Hall talked about change of mindset at the Conference about Water. According to him, the change of mindset, took place mainly at the municipality itself. In 2011 and 2014, Vienna suffered heavy rain that caused great damage. "Certainly, more capacity for sewerage could be built. But it is very expensive and people are annoyed when the city is dug up," says Lehmann. And so the municipality decided to simply not let the rainwater into the sewer, except for the historic center, where the spatial possibilities simply do not allow for another solution. (Martin Mach Ondřej, © 2017) A survey of people on a representative sample could bring inspirational ideas not only for organizations and cities that deal with management but the results will be used to educate and motivate these people to take interest in this society-wide problem and for proposals for its prevention or solution.

Czech university students perceive the society-wide problem of water management very sensitively. Their perception is not gender-dependent. They are slightly more aware of the problem of water scarcity in the world, which is very alarming due to the fact that the Czech Republic has only 2 % of surface water. Schools, the state, and non-profit organizations should therefore communicate more intensively about the prevention of this problem and the responsibility of each individual for its solution.

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Promoting Academic Integrity in Secondary Education

Bagus Hary PRAKOSO

The Center for Educational Assessment

Ministry of Education and Culture

bagushprakoso@gmail.com

ABSTRACT

One of the decisive issues of school integrity index is connected to assessment parameter and concept of integrity emerging social and cultural impact. This is a fascinating issue to challenge with a vast concept of integrity that will be explored as consistency across context, coherence between values and action, stability over time, permanence across roles, and union of ethical perspective. To overcome that issue, the purposes of this study are to analyze academic integrity in the secondary education and to make recommendation for policy makers in order to enhancing academic integrity. The author utilized Soft Systems Methodology (SSM) as research method, and supporting program of Integrity Index of National Exam (IIUN) for secondary education in Indonesia as singular case study. Study result shows that employing Integrity Index of National Exam by measuring the structure of answer on national exam is quite effective to enhance academic integrity for particular scope. However, it requires improvement for the instrument that conceptually feasible, legitimate and politically sustainable.

Keywords: academic integrity, Soft Systems Methodology, Integrity Index of National Exam.

INTRODUCTION

Amidst critical remarks on integrity concept, it seems that Palanski and Yammarino (2007) noted on integrity is proved. They stated that “integrity suffers from significant problems, ... to many definitions and too little theory.” That statement supported by Dunn (2009) who concluded that “integrity will next be explored as consistency across context, coherence between values and action, stability over time, permanence across roles, and union of ethical perspective.” To explore those statements above, this study provides practical issue challenging with conceptual issue of school integrity.

In practice, it is connected with National Assessment Program, in which Ministry of Education and Culture (MEC) assisted by the Center for Educational Assessment (CEA) carrying out Paper Based National Exam (UN) for secondary education. The aim of that annual program is not only for enhancing academic achievement, but also for enhancing honesty and credibility of Indonesia education. To succeed it, MEC has employed Computer Based National Exam (UNBK) as optional program and Integrity Index of National Exam (IIUN) as supporting program.

As an optional program of the UN, Computer Based National Exam receives positive trending response from secondary schools in term of participation, risk, feed back, quality of preparation, process, and result. In short, UNBK program that really depends on educational technology and e-assessment is able to overcome the issue of academic achievement and integrity.

As a supporting program, Integrity Index of National Exam has been successfully proved to be an instrument to enhance school integrity through conducting Indonesia national exam honestly. The instrument actually aimed to reducing cheating index based on the answer pattern analysis. This policy is quite effective to diminish the systematic dishonesty for 41,7 per cent in senior high school on science program, and for 37,8 per cent in senior high school on social program. It can be noted that there was improvement of integrity index on 24 from 34 provinces observed (<http://www.cnnindonesia.com/nasional/20160510011843-20-129580/indeks-integritas-sma-meningkat-nilai-ujian-nasional-turun/>)

However, IIUN as an innovative program, faces analytical remarks of debatable criteria and its instrument. It emerges the main reason for some principals that they do not have confidence in the assessment result. Some principals are anxious about the impact of negative reputation from society towards their schools with low integrity index. MEC stated that the transparency of criteria to determine school integrity index, aiming to avoid interventions from certain stakeholders that disrupt the assessment (http://www.kompasiana.com/ramdan69/menyoal-objektivitas-indeks-integritas-sekolah_5584ec8183afbd4912df8a1f).

The concept of assessing IIUN that has been implemented is slightly different from academic literatures. Carter (1996) who developed working definition of integrity, summarizing into three abilities such as “ability to discern what is morally right from morally wrong, ability to consistently act on those convictions, and ability to openly articulate that one is acting according to his convictions and these convictions are the result of moral reflection and evaluation.” The other study recommended the need to employ qualitative study to determine specific differences of perception about academic dishonesty (Boehm, Justice, and Weeks, 2009).

Regarding the previous studies above, the position of this study is to enrich context of academic integrity through confronting conceptual model of academic integrity, with perceived reality by using systems approach. The purposes of this study are to analyze academic integrity in the secondary education and to make recommendation to policy makers for enhancing academic integrity.

RESEARCH METHOD

This study employed Soft Systems Methodology or SSM (Checkland and Scholes, 1990) by implementing the seventh cycle stages: (1) problem situation considered problematic; (2) problem situation expressed; (3) root definition of relevant purposeful activity; (4) conceptual models of the named in the root definitions; (5) comparison of models and real world; (6) changes systematically desirable, culturally feasible; and (7) action to improve the situation (shown in **Figure 1**). SSM as described by Checkland and Poulter (2006) is an action oriented process of inquiry into problematical situations in the everyday world; users learn their way from finding out about the situation to defining and taking action to improve it.

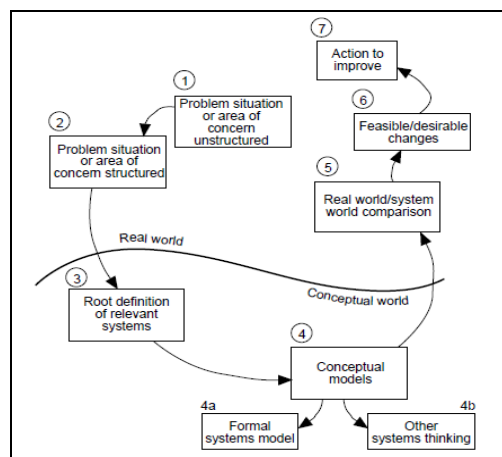


Figure 1. Seven stages of SSM

Study of literature has been conducted towards documents related to regulation and policy of IIUN (Integrity Index of National Exam), and papers related to academic integrity. To enrich data, a series interview were undertaken from various informants who have expertise in educational evaluation and integrity concept, from various academic backgrounds and professions. They are researchers, teachers, lecturers, practitioner, and school heads that have received integrity school award.

CASE STUDY

National Exam (UN) consisting of paper based test and computer based test that implementing national policy of the Constitution number 20 year of 2003 about National Education System. The purpose of UN is to measure

national achievement of graduate competency on certain subjects referring to graduate competence standard (Constitution on National Education System article 7 and 58, and Government Regulation (PP) 19/2005 jo PP 32/2013). Previously, UN program was only employing paper based test, but since 2015, MEC has employed computer based test (UNBK) for secondary schools (senior, junior, vocational, and Islamic high school).

According to Director of the CEA, there are some benefits employing UNBK nationally such as “minimizing human and technical errors in term of preparation and implementation, facilitating process on collecting and assessment, accelerating announcement of national exam result, and promoting effective, efficient, and transparent program.” On the other hand, the result of UN is utilized as one of considerations for mapping of program quality and or education unit, selecting further level of education, and developing and awarding assistance to education unit in order to enhance education quality (Government Regulation No. 13/2015).

The reason behind of the MEC policy concerning UN instrument, is to stop cheating in the implementation. The analysis of cheating is measured through the structure of the UN’s answer whether “pattern or disorder and systematic or unsystematic.” Based on its structure of UN’s answer, it can be identified the student work or collaboration.

FINDING AND DISCUSSION

The Stream of Cultural Enquiry and the Stream of Logic-Based Enquiry

The Stream of Cultural Enquiry consists of stage 1 and 2 of SSM (Checkland and Scholes, 1990). In these stages, there are social and political analysis to capture, informally, the main entities, structure and viewpoints in the situation, the processes going on, the current recognized issues and any potential ones (Checkland and Poulter, 2006). The result of these stages is expressed in rich picture where all relevant stakeholders are identified and related concerns are investigated (shown in **Figure 2**).

The Stream of Logic-Based Enquiry: Root Definition and Conceptual Model consists of stage 3 and 4 of SSM (Checkland and Scholes, 1990). At these stages, the relevant systems are selected, named, modeled and compared with perceptions of the real-world situation (Checkland and Scholes, 1990). As part of the process of modelling of the system, and in order to articulate what is the scope and component of it, CATWOE analysis is made firstly. The following table represents a description of CATWOE for the case in question (shown in **Table 1**).

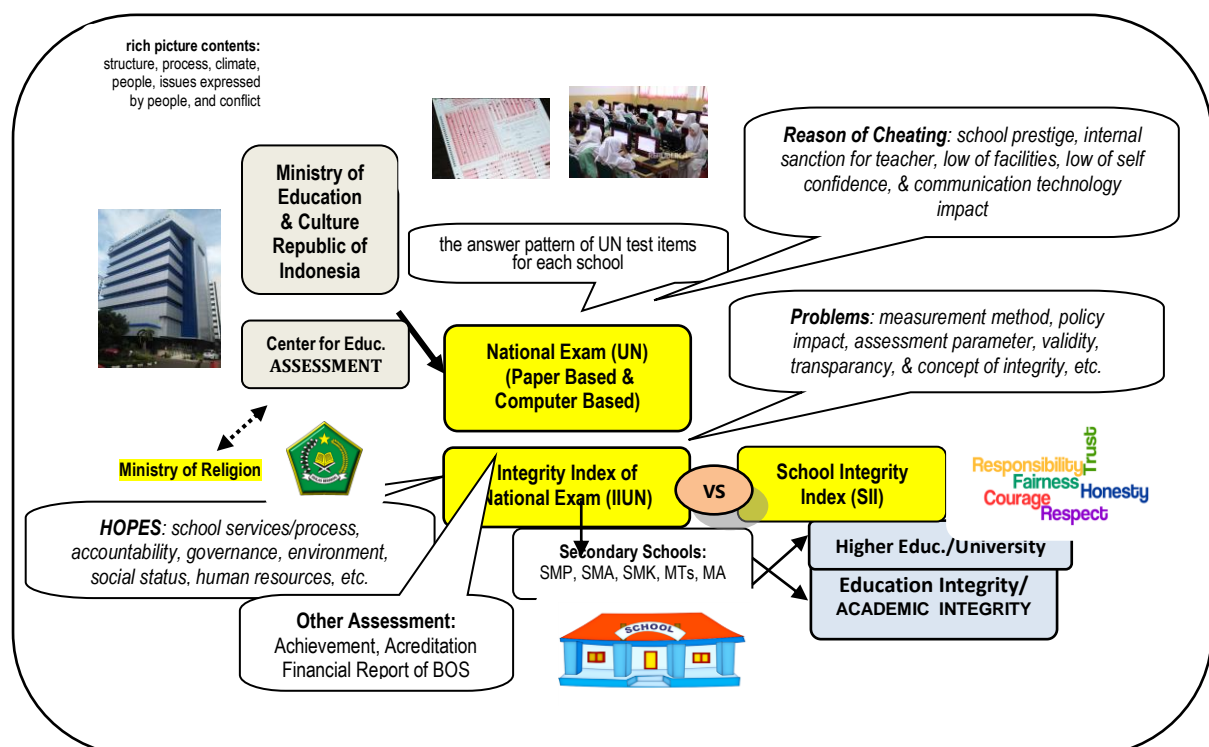


Figure 2. Rich Picture of Integrity Index of National Exam (IIUN)

Table 1. CATWOE Analysis

CATWOE	In the context of analyzing academic integrity
Customer	Ministry of Education & Culture, students, parents, teachers, principals, university
Actor	Director of the Center for Educational Assessment (CEA) and researcher
Transformation	Incompatible instrument transforms to representatively compatible instrument to measure academic integrity for generating equality and opportunity
Weltanschauung (world view)	Understanding and implementing the comprehensive concept of integrity are necessary for enhancing academic integrity
Owner	Center for Educational Assessment as technical institution
Environmental constraint	Political will and organization mind-set

Utilizing the above elements, a Root Definition (RD) has been constructed by utilizing Checkland and Poulter's PQR formula. The root definition expresses the main purpose of the activity system. The main element of RD is its transformation process in which a defined input is transformed into a defined output. Root definition for this case is a program which is managed by the Center for Educational Assessment (P), through developing concept and instrument of academic integrity (Q), in order to enhance academic integrity in secondary education (R).

Stage four is constructing conceptual model (shown in **Figure 3**) comprising a representation of the minimum activities necessary to carry out the needed transformation within the stated worldview and identified at the CATWOE. To complete the analysis of the problem situation, it takes verification whether conceptual model is successful or unsuccessful, it utilized three different account namely efficacy, efficiency, and effectiveness (Checkland and Scholes, 1990).

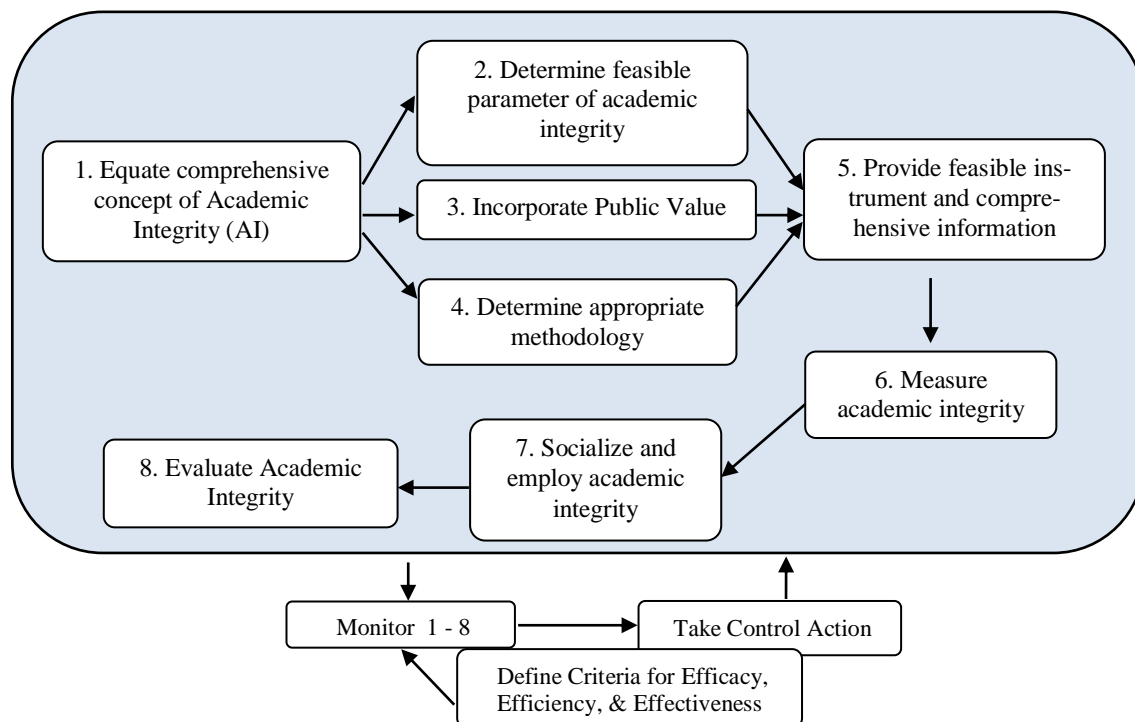


Figure 3. Conceptual Model of the system to construct academic integrity in secondary education

Comparing Model with Perceived Reality

At stage 5 is doing comparison between the real world, where the area of concern exists, and the systems world, where the root definitions and conceptual models have been built (shown in **Table 3**).

Table 3. Comparing the activities in systems world model with the conceptual activities in the real world

No	Activity	Does it Exist?	Description
1	Equate comprehensive concept of academic integrity (AI)	Partially	Using partial concept and purpose
2	Determine feasible parameter of academic integrity	Partially	Using limited parameters
3	Incorporate public value	Partially	Focus on certain areas
4	Determine appropriate methodology	Partially	Focus to use quantitative approach
5	Provide feasible instrument and comprehensive information	Partially	Merely use national exam data

Table 3. Comparing the activities in systems world model with the conceptual activities in the real world

No	Activity	Does it Exist?	Comments
6	Measure academic integrity	Partially	Answer pattern of national exam, and using statistical algorithms model
7	Socialize and employ academic integrity	Partially	Together with UN announcement, & granting integrity award for selected schools
8	Evaluate academic integrity	Partially	Partially evaluated

Pertaining activity to equate comprehensive concept of academic integrity, empirically stated that integrity index which based on one variable (answer pattern) of national exam is not yet fully reflected the integrity concept. As stated by Hadiana (February 2017) that “to measure integrity requires instrument that enable to measure integrity for student, teacher, organization culture, and school management. In short, it requires comprehensive concept of integrity incorporated in its instrument.” In understanding integrity concept, it can not be addressed only to some elements or stakeholders. That is supported by International Center for Academic Integrity, that integrity encompasses a number of values and ideals that should be upheld by all educational stakeholders (http://www.academicintegrity.org/fundamental_values_project/index.php).

In determining feasible parameter of academic integrity, a teacher of sociology at senior high school (SMA) in Pasuruan East Java (Bakhri, February 2017) stated that “the ideal integrity parameter is based on the objective condition of each school. Government should rethink to generalize integrity parameter in which the objective condition of each school is different. Measuring honesty could not depend on cognitive value or knowledge only. Honesty factually related to the aspect of student attitude in accomplishing the test items.” That statement can be understood that school with particular condition and culture will also have particular achievement. This is what Jennifer L. Kisamore et al (2007) stated on influence of integrity culture to intentions to cheat.

Their statements on concept and parameter of integrity have been justified by Barnard, Schurink, and Beer (2008) that “integrity is conceptualized as a multifaceted and dynamic construct based on a moral foundation and inner drive that managed by cognitive and affective processes manifesting various integrity-related behaviors.” Furthermore, they have formulated a conceptual framework that integrity incorporates a number of competencies i.e. self-motivation and drive, moral courage and assertiveness, honesty, consistency, commitment, diligence, self-discipline, responsibility, trustworthiness, and fairness.

Incorporating public value to enhance academic integrity that will generate significant output is a necessity. This

activity responds to the macro and meso levels. In macro level, it's responding to public involvement in empirical data and research based policy management, and developing coordination and collaboration across sectors at national level (MEC Strategic Framework 2015 – 2019). In meso level, there is a requirement "to develop honesty indicator portraying the whole school ecosystem consisting of student, teacher, and education unit" (Hadiana, February 2017). The others, "for those allowing to determine honesty of students are their schools and teachers accompanying them during three years of the learning process, not in accomplishing national exam with multiple choice items" (Yustina, February 2017).

Conceptually, as Kelly et al. (2002) described that "public value is a contribution that created by the public sector in social, economic, environmental welfare sphere for community." Generally, it can be defined as what the public demand related to spending of money and freedom that will be attained. As an initiator of public value theory, Moore (1995) stated that public value provides "a framework that helps us connect what we believe is valuable ... requires public resources, with improved ways of understanding what our public value and how we connect to them."

Amidst the stance of pros and cons in responding integrity index of national exam relating to assessment of the integrity parameter and the impact that might be emerged, it requires a robust understanding of public value concept. This is pivotal concept for the CEA as a public sector in delivering school integrity index for heterogeneous schools in term of facility, capacity, management, goal, achievement, constraint, and socio culture. In short, in contributing to the public demand, CEA and MEC require strong mandate supported by the consistent and enthusiast support. This is supported by Moore and Khagram (2004) that "any successful organization must ensure that there is an alignment across its (public) value proposition, organizational capabilities, and sources of support and legitimacy is one that is likely to hold for profit making businesses as much as governmental agencies and non-profit organizations."

Determining appropriate methodology to incorporate various data and information is strongly encouraged. The previous data used in IIUN was dominated by quantitative data sourcing from the UN results. As stated by Yustina (February 2017) "computer based national exam (UNBK) can be an awesome instrument to develop school integrity. However, measuring integrity index through analyzing the answer pattern of national exam could not generate benefits at all. It requires school, teacher, and student integrity." To respond it, it requires to analyze various data that integrate quantitative and qualitative data through a transformative process (Driscoll, L. D., Salib, P., Rupert, D. J., 2007). Then to measure it, it can utilize "mixed method research which provides greater depth and breadth of information which is not possible utilizing singular approach" (Almalki, S. 2016).

The step of measuring academic integrity is definitely complicated. The current measurement is merely based on the answer pattern of national exam. That is the easiest way to collect, score, generate data, announce the result, and award the school selected. However, how to meet the normative criteria as stated by Hills and Sullivan (2006) that the method of measurement should be related to some items whether appropriate, holistic, democratic, trustworthy, and generating public value? The fundamental differences between the MEC process that has been conducted and the conceptual model at this stage relate to the constraints of time, budget, scope, resource, and accountability.

To provide reliable instrument and comprehensive information, UNBK can be acknowledged as reliable instrument in promoting student honesty in the form of test accomplishment. To sharpen its function, "it is very necessary to provide computer based test for various tests and subjects" (Yustina, February 2017). However, this instrument has disadvantage side of "how to assess the attitude i.e. good intention and good process" (Safari, educational assessment researcher, February 2017). Both statements are similarly confirmed with a survey by Watson and Watson (2011) in Michael, T. B., and Williams. M. A. (2013) reporting that students admitted to higher rates of cheating in face-to-face course in online classes.

To socialize academic integrity, MEC announces the UN result which is equipped by IIUN report. Besides that, MEC has selected secondary schools in all Indonesia's provinces which have consistency in school integrity performance during the last five years. The total of 503 schools have been selected to grant Integrity School

Award from president. The question is how to meet the criteria of qualities, services, outcomes, and trust related to public value implementation by organization (Kelly, G., Muers, S., and Mulgan, G. 2002).

The method of determining school integrity that focuses only on the cognitive aspects in the examination, it will always gain continuous opposition from stakeholders who demand public values in term of equality, accountability, and legitimacy. In the long term this has an impact on the difficulty of obtaining outcomes and trust. To meet outcomes and trust, it requires to employ academic integrity through employing many aspects, approaches, and stakeholders at all levels. This was what an expert in educational socio-assessment (Witjaksono, March 2017) stated that “at school which has integrity, all activities such as curriculum, pedagogy, and assessment, are undertaken at inside and outside of school environment, includes UNBK which is represented through IIUN, will be undertaken based on school culture which is enacted referring to school of ethics.”

In the context of stakeholder engagement, there has been a fact that “many principals want to show their quasi-achievements to the upper officer of education which called *Dinas Pendidikan*, then *Dinas Pendidikan* also wants to show its achievements to the head district or province which called *Bupati* or Governor” (Yustina, Feb. 2017). The other stated that it “requires the change of mind-set for students, teachers, and parents” (Suryadi, National Education Standards Board, February. 2017).

In implementing evaluation on academic integrity there are interconnected concepts and intercepted practices between public value and the program itself that ideally uneasy to employ. However, conceptually, it should consider to what Grimsley and Meehan (2007) stated “it requires to focus on the concept of public value taken to include dimensions of outcomes, services, satisfaction, and trust”. Practically, Franz, et. al. (2014) concluded that the “process should not be black and white but reflect the current and potential value of a program as well as program changes and improvement needed.”

To meet those demands, MEC as the holder of public authority in the education sector, often only prioritizes pragmatic approach with limited and short-term outputs. As the institution of education policy authority, MEC urges to move on from a pragmatic approach to a comprehensive and integrative approach which has more ability to fulfill the public values.

Recommendation for Actions

Stage 6 and 7 of the SSM are giving for change and actions to improve the problem situation. Concerning to conceptual model (Figure 3), the author has recommendations of way to improve implementation conceptual model of the system to construct academic integrity in secondary education (shown in **Table 4**).

Table 4: Recommendation for Actions

No	Activities	Description
1	Equate comprehensive concept of academic integrity (AI)	Encourage to equate comprehensive concept of AI through the organized discussion across discipline/profession
2	Determine feasible parameter of academic integrity	Encourage to determine feasible parameter of AI through the organized discussion across discipline/profession
3	Incorporate public value	Encourage collaboration work across functional area
4	Determine appropriate methodology	Encourage to use mix method
5	Provide feasible instrument and comprehensive information	Encourage to collect various data and information
6	Measure academic integrity	Encourage collaboration work across functional areas
7	Socialize and employ academic integrity	Encourage to use various media and strategies
8	Evaluate academic integrity	Encourage to optimize program evaluation annually

CONCLUSIONS

This paper argues that the application of Soft Systems Methodology (SSM) can explore academic integrity practices through comparing conceptual model with actual situation in order to generated debate with the stakeholders. Study result shows that employing Integrity Index of National Exam (IIUN) in secondary education by measuring the structure of answer on national exam is quite effective to enhance academic integrity for particular scope. However, to enhance academic integrity in secondary education that conceptually feasible, legitimate, and politically sustainable, it is necessary to accomodate expectations of the stakeholders through employing holistic assessment relates to concept and procedure, and objective assessment relates to school characteristics.

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Promoting Students Metalanguage Awareness Through Genre Pedagogy

Murti Ayu WIJAYANTI

Indonesia University of Education,

Bandung, Indonesia

University of Sultan Ageng Tirtayasa, Serang, Indonesia

murtiayuwijayanti@gmail.com

Wawan GUNAWAN

Indonesia University of Education,

Bandung, Indonesia

Emi EMILIA

Indonesia University of Education,

Bandung, Indonesia

ABSTRACT

This paper draws on a study focusing on the use of genre pedagogy to prepare students for writing research proposals. This study aims to examine whether genre pedagogy can promote students' metalanguage awareness which will finally lead them to be able to write research proposal. The study was conducted in one university in Banten, involving fifteen students taking Research on ELT course unit in their third year. The data were collected through classroom observation and documents analysis. The classroom observation result shows that genre pedagogy can promote students' metalanguage awareness through the use of linguistic features and the teaching of various texts. Further, the result of the analysis of students' research proposal shows that the students have a good control of the schematic structure and linguistic feature. Based on those two findings, it can be concluded that the process of teaching by the exposure of various related text examples can promote students metalanguage which can lead them to write good research proposals.

INTRODUCTION

As one of academic texts, a research proposal, as Swales (1990) posits is the 'occluded' genre; that is, genre which is difficult for students to write, but plays an important part in the students' lives. Thus, the study on how to compose a good research proposal is an urgency. However, the study on the teaching of writing a research proposal in Indonesian context is very limited. Most of studies are conducted to find out the students' problems in writing research proposal (Widiastuti, 2010, Yusuf, 2013). The others examine the factors affecting the students' problem in writing research proposal (Dwiandini, et.al.). Therefore, the present study aims at investigating how genre pedagogy can help the students write research proposal as well as promote students metalanguage.

One of the basic principles of genre pedagogy is that learning to write involves learning to use language (Hyland, 2007). As genre teaching will focus on how texts are grammatically patterned combined by the choice of vocabularies that can create meaning, learning to write will be also intended to learn to use language. In the learning process, teacher and students explicitly discuss on how to use language. Therefore, genre pedagogy in some points might help students improve their metalanguage awareness.

There are three main theories used in the study: SFL genre pedagogy, metalanguage, and academic writing. For the last decade, the teaching of second or foreign language writing focuses on genre and context of writing. The central belief in this approach is that the students do not only write, but they write to achieve some purposes as an attempt to communicate with readers (Hyland, 2003). Rooted from the work of Systemic Functional Linguistics (SFL) which is developed by Halliday (1994), this genre pedagogy is motivated by language and literacy education (Feez, 2001).

Metalanguage in Cambridge Advanced Learner's Dictionary & Thesaurus is defined as "a specialized form of language or set of symbols used when discussing or describing the structure of a language". Metalanguage used in the present study is the technical term used to describe and analyze language (Crystal, 1985, 1997). Despite the criticism that as the use of metalanguage in the language teaching will make the students able to talk about language rather than to communicate (Halliwell, 1993), the advantages of metalanguage in language teaching outweighs its disadvantages. Hu (2010) posits several advantages of using metalanguage. First, the use of metalanguage can help students develop their metalinguistic awareness. Second, danger might arise when teacher and learners try to avoid

technical terms. Finally, metalanguage can be used by teachers to help their learners use their grammatical rule that they have learned with new structures. The advantages of using metalanguage in this study is believed to finally lead the students be able to write research proposal. Therefore, it is an urgency to investigate how genre pedagogy can promote students metalanguage awareness. Finally, the theory of academic writing used in the study is that of Swales, 1990; Swales and Feak, 2004; Paltridge and Starfield, 2007; Emilia, 2008

THE STUDY

The study was conducted in one university in Banten, Indonesia, involving fifteen students taking Research on ELT course unit in their third year. The study used a case study design as it tried to understand the case in depth and natural setting (Punch, 2009). Further, a case study design is suitable with this study since as one of qualitative studies, the aim of this design as suggested by Punch (2009) is "... to understand the case in depth, and in its natural setting, recognizing its complexity and its context..."(p.119). The researcher acted as the teacher in implementing genre pedagogy to the teaching of writing a research proposal as one of academic texts.

The data were collected through classroom observation and relevant documents analysis. Students' research proposal documents were analyzed in terms of elements and linguistic features by using theories of English academic writing (Swales, 1990; Swales and Feak, 2004; Paltridge and Starfield, 2007; Emilia, 2008).

FINDINGS

1. Students' Metalanguage Found in the Implementation of Genre Pedagogy to the Teaching of Writing Research Proposal

The results of observation shows that in every teaching cycle, the students produce metalanguage. Following is the students' metalanguage found in every teaching parts. There are three teaching parts:

1.1 The teaching of 'Introduction' part

Below are the students' excerptst containing metalanguage found in the teaching of 'Introduction' part:

- (1) *I am not really sure about the use of past tense in the background part.* (Student C)
- (2) *Bu, can we use pronoun I in background part?* (Student G)

Example (1) showed that student C doubted about the using of past tense in background part. Student G in example (2) also showed her uncertainty about the using of pronoun I. These are examples of how they unconsciously discussed about grammar which means that they talk about metalanguage which leads to their language awareness.

1.2. The teaching of 'Literature Review' part

Below are the excerpts of students metalanguage found in the teaching of 'Literature Review' part.

- (3) *Bu, how to paraphrase? Do we change all?* (Student B)
- (4) *I think D uses so many words "state" in his literature review. She can use other words like claim, posit, etc.* (Student E)

Just as the teaching of previous part, students metalanguage were also found along the discussion of this teaching part. Example (4) showed how student B questioned the way to paraphrase. Thus, she wanted to know the way to construct a new sentence to paraphrase which meant on the grammar. Example (5) showed his criticism about the use of certain words or diction.

1.3 The teaching of "Research Methodology" Part

Following are the excerpts of students metalanguage in the teaching of 'Research Methodology' part:

- (5) *I think D made mistake. She write research design in past tense. She should use future tense because it is proposal.* (Student H)
- (6) *'Observation conducted toget the data'. I think C should use passive sentence.* (student A)

Example (6) and (7) shows the students awareness on the use of correct grammar. As students wrote research proposal, they should use future tense and student H criticizes her friend for using past tense. Student A in example (7) also shows how should a sence was constructed correctly by using passive voive instead of active sentence.

2. The Analysis of Students' Research proposal Schematic Sructure and Linguistic Feature

This part presents the analysis of schematic structure and linguistic feature of students' research proposal.

2.1 The Analysis of Schematic Structure of Students Research Proposals

Document analysis shows that most of the students' research proposal were written based on the guidelines given during the process of teaching research proposal usng genre pedagogy. The following tables show the schematic structure of research proposals produced by the students at the end of the teaching of research proposal using genre pedagogy.

Table 1 Analysis of Schematic Structure of Introduction

Elements		Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 6	Proposal 7	Proposal 8
Background	Establishing research territory	√	√	√	√	√	√	√
	Establishing niche/ gap	√	-	√	√	-	√	√
	Establishing purpose	√	√	√	√	√	√	√
Research Question		√	√	√	√	√	√	√
Research Objective		√	√	√	√	√	√	√
Research Significances		-	√	√	√	√	√	√

Table 2 Analysis of Schematic Srtucture of Literature Review

Elements	Proposal 1	Proposal 2	Proposal 4	Proposal 5	Proposal 6	Proposal 7	Proposal 8
Definition	√	√	√	√	√	√	√
Concepts	√	-	√	√	-	√	√
Notions	-	√	-	-	√	√	√
Models	√	√	√	√	√	√	√
Relation between variables	√	√	√	-	√	√	√
Stages	√	√	-	√	√	√	√
Related studies	√	√	√	√	√	√	√

Table 3 Analysis of Schematic Structure of Research Methodology

Elements	Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6	Proposal 7	Proposal 8
Research design	√	√	√	√	√	√	√	√
Research site and participants	√	√	√	√	√	√	√	√
Data collecting technique	√	√	√	√	√	√	√	√
Data analysis technique	-	√	√	√	√	√	√	√

Table 1, 2, and 3 are the analysis of every part of the students' resarch proposals . The tables show that most of the students' research proposal have fulfilled all elements of research proposal (Swales, 1990; Swales and Feak, 2004; Paltridge and Starfield, 2007; Emilia, 2008). Thus, the students have a good control on the schematic structure of this text. Only few students miss few elements, such as move 2 in research background.

2.2 Analysis of Linguistic Feature of Students' Research Proposals

2.2.1 Examples of Linguistic Feature Analysis in Inroduction Part

- (1) Numerous studies have investigated the extensive reading in tertiary level and get positive result. However, less study has been conducted in the secondary level, so the researcher will try this method at school environment. (proposal 1)
- (2) Among four skills, writing is one of important skill that should master by the students. In language learning (proposal 7)

The underlined word in example (1) shows the linguistic feature of move 2 in research proposal background: establishing niche/gap using the word 'however'. This word is used to to show the gap or contrast the previous research

(Swales and Feak, 2004). Example (2) shows the using of word ‘is’ as the sign of present tense for move 1 in research background to establish territory (Swales and Feak, 2004).

2.2.2 Examples of Linguistic Feature Analysis in Literature Review Part

- (3) *Brown (2001) states that speaking is an interactive process of constructing meaning that involves producing and receiving and processing information* . (proposal 2)
- (4) *According to Thornbury (2002:13) “Without grammar very little can be conveyed, without vocabulary nothing can be conveyed”.* (proposal 3)

Example (3) shows that the student is able to use quotation. She uses present-reference to state generally accepted knowledge of the field (Feak and Swales, 2009). Whereas example (4) shows how the student uses direct quotation.

2.2.3 Examples of Linguistic Feature Analysis in Research methodology Part

- (5) *Corresponding to the research question and purpose, this study use an experimental study for reason: the researcher try to predict as "Experimental Research - An attempt by the researcher to maintain control over all factors that may affect the result of an experiment. In doing this, the researcher attempts to determine or predict what may occur" (Key, 1997).* (proposal 1)
- (6) *It is related with the aim of the researc her to conduct pre-test and post-test in this research, because the researcher wants to know the students' reading comprehension before and after the treatment* (proposal8)

Example (5) and (7) show that the students have good control of linguistic feature in writing research methodology part. They do not only describe, but also justify by giving arguments. It is in line with the linguistic feature of research methodology part as suggested by Swales and Feak (2004) and Emilia (2008) that this part provides an explanation why the research method is chosen.

CONCLUSIONS

The findings of the present study are students metalanguage is promoted during the process of teaching research proposal using genre pedagogy and the studens have good control on the schematic structure and linguistic feature of research proposal. First, students metalanguage are found in every stage of teaching research proposal, i.e. the teaching of introduction part, literature review part, and reserach methodology part. Second, based on the document analysis, it is found that the students have good control of schematic structure and linguistic feature of research proposal. Most of them are able to produce proposals fulfilling the major elements of this academic writing. Further, most of the proposals perform good linguistic feature of research proposal. Based on those two findings, it can be concluded that the process of teaching by the exposure of various related text examples can promote students metalanguage which can lead them to write good research proposals.

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Prospective Teachers' Metaphors on Scientific Literacy and The Nature of Science

Ijlal OCAK

Faculty of Education, Afyon Kocatepe University, Turkey

ijlalocak@gmail.com

ABSTRACT

The aim of this study is to identify the metaphorical perceptions of the prospective teacher regarding the nature of science, scientific knowledge, scientists, scientific literacy and science. In the research, the case study was used as a one of the qualitative research methods. The participants of the research are 219 prospective teachers who are studying in science education and elementary mathematics teacher education department of Afyon Kocatepe University. A questionnaire prepared by the researcher and consisting of five open ended questions of the form "Science like because" was used as data collection tool. The analysis of the data was done by content analysis. Analysis of the data while the concept of science is mostly likened to nature, scientific knowledge is likened to the universe. Prospective teachers likened scientists most to the "sun". "Teacher" metaphor was most established in metaphor related to scientific literacy. While producing the most "book" metaphor for scientific literacy, the nature of science is most likened to the "universe". The metaphors created and the answers about why they are created show that the concepts of scientific literacy and science are not perceived and understood enough by prospective teachers.

INTRODUCTION

It is very important to give science education to children who will be adults in the future when technology and science are going very fast. Most of the countries' educational systems have important priorities such as educating especially creative and critical thinking skills, problem-solving and science-literate individuals. According to Köseoğlu et. (2008), it is emphasized that "all citizens should be literate in science" in the curriculum prepared in Turkey and especially in 2004 and afterwards. Lederman (2004) states that perceptions of nature of science are the most important dimensions of science literacy. For this reason, in order for students to be able to make conscious personal and social decisions by using scientific knowledge, it is first necessary to understand how scientific information is structured and, accordingly, to deeply understand the source and boundaries of this information. According to Wong (2002), the fact that the nature of science is taught to students in a good way will also help them understand the vital importance of knowledge, which leads to the change of societies and the understanding of science and technology will enable the production of new information and more advanced technologies. It is very important to define and perceive science within scientific concepts and literary literacy and its important dimension. Science is the act of searching for truth. Science is the combination of experiment-based methods that select the universe or a part of events as subjects, and regular information that try to draw conclusions from reality (TDK Glossary of Terms, 2017). Nevertheless, when considered as a structure and content, science is defined as "a set of proven systematic information that is valid". Karasar (2015), who does not try to reach agreement on an unchangeable definition of science, stated that it could be enough to define it as systematic information which is accepted as scientific knowledge. In the absence of a full definition of scientific literacy, in many literatures, scientific literacy means that one can ask questions about the situation that one is worried about as a result of his daily experiences, which means that he can answer or make decisions about these situations (National Research Council (NRC), 1996; Bell, 2008). One of the most important dimensions of scientific literacy is that of describing the nature of science, Lederman and Zeidler (1987) suggested that the nature of science and the values and beliefs involved in the developmental process of scientific knowledge and scientific knowledge are implied. In the educational literature, science refers to epistemology and sociology of natural science, or beliefs and values inherent in scientific knowledge and its development (Lederman 1992, Ryan and Aikenhead 1992). Scientific literacy and understanding of the nature of science is also important for the understanding of scientific knowledge and scientists. One of the elements of science that is the process of thinking about the nature of knowledge, preventing the accumulation of existing knowledge and producing new knowledge is scientific knowledge (Tan ve Temiz, 2003). Scientific knowledge arises from the collection, organization and interpretation of facts. According to Başdağ (2006), scientific information is validated information and includes facts, concepts, principles, natural laws and theories. According to Ortaş (2004), a scientist is a person who thinks universally, is objective, has a high moral responsibility, is enlightened, has a high level of anticipation, is responsible for all human beings and nature, is open to criticism and has the courage to tell the truth.

Although Lederman's (2007) perception of the nature of science has long been regarded as one of the most important components of scientific literacy, research shows that students do not have a sufficient understanding of this issue. The most important reason of the inadequacy in this issue is thought to be the teachers responsible for education and training. This situation has caused attention to concentrate on the teachers, and their opinions about the nature of science have been tried to be determined. Reviewing the literature in the world and in

Turkey, many studies emphasize that both students and teachers are insufficient in understanding the nature of science (Bell etc. 2000, Lederman, 1992; Sarıbaş ve Köseoğlu, 2006).

In this study, it was aimed to reveal the perceptions of "Science", "Scientific Knowledge", "Scientific Literacy", "Scientific Literacy" and "Nature of Science" by the metaphors of the prospective teachers who are studying in the departments of science and elementary mathematics teacher education.

THE STUDY

In this study descriptive survey model and qualitative method are used. The research is based on a case study aiming to draw conclusions about a particular situation. The participants of the study constitute 219 prospective teachers who attended Afyon Kocatepe University Mathematics and Science Education Teaching and Elementary Mathematics Education Branches in 2016-2017 academic year. The simple random sampling was used. Data was collected through the participants' completion of the prompt "Science is like . . .because". Research is conducted on 219 prospective teachers' metaphors about "Science", "nature of science", "scientific knowledge", "scientists", "scientific literacy" and "science".

To analyze the data, content analysis, basically inductive approach is used. According to Elo and Kyngas (2008), in content analysis, the aim is to build a model to describe the phenomenon in a conceptual form. Both inductive and deductive analysis processes are represented as three main phases: preparation, organizing and reporting. The preparation phase is similar in both approaches. The concepts are derived from the data in inductive content analysis. Besides, according to Saban (2008) data analysis take place through the five stages:

1. Coding/Elimination Stage: All the metaphorical images supplied by the participants are simply named/labeled.
2. Sample Metaphor Compilation Stage: A sample expression for each identified metaphor is selected by going through all the metaphorical images that are identified in the previous stage.
3. Sorting and Categorization Stage: For all the metaphors which are identified in students' answers, the conceptual categories are constructed. This part can be called as inductive content analysis.
4. Establishing the Inter-Rater Reliability Rate: Accordingly, the metaphors are classified by the independent coder and the level of agreement between his individual rating and this researcher was 0.94. (i.e., Reliability = Agreement / Agreement + Disagreement = $96 / 96 + 4 = 0.96$). According to Miles & Huberman (1994), if the reliability rate is above the seventy percent, the research can be counted as reliable.

FINDINGS

The categories of the results of the content analysis of the responses given by prospective teachers to science, scientific literacy, the nature of science, scientific inquiries and questions about scientists and the metaphors they produced are given in the following tables.

Prospective teachers produced 145 different metaphors in six categories, namely "elements of nature", "human concepts", "philosophical approaches", "space", "knowledge" and "original answers". While 36 metaphors were included in the most "philosophical approaches" category, 65 metaphors were produced in the "nature elements" category as the number of metaphors. Metaphors and categories that prospective teacher produce about science are given in Table 1.

Table 1. Metaphors and categories that prospective teachers make about science concept

Categories	Metaphors
Nature elements	nature (18), tree (7), water (3), living being (2), sky (2), a plant (2), an unexplored island (2), a forest (2), a flowing river (1), a herb (1), natural disasters (1), iron (1), sea (1), an endless nature (1), an eternal forest (1), migratory birds (1), rainbow (1), a plane-tree (1), a rooted-tree (1), marble (1), fruits (1), seed of fruit tree (1), fruit kernel (1), ocean (1), natural environment (1), constantly evolving tree (1), nature (1), seed (1), mound (1), endless sky (1), endless ocean (1), endless rain forest (1), a long way (1), forest (1).
Human concepts	a baby (4), a child (4), a car (2), human (2), buildings (2), human body (2), a machine (2), daily necessities (2), fashion (1), continuously developing devices (1).
Philosophical approaches	art (3), light (2), an empty plate (2), a candle in a dark room (2), a changing pattern (1), bottomless pit (1), dominoes (1), the reality on the earth (1), the meaning of the world (1), the extreme bloody life struggle (1), philosophy (1), to open the light to the future (1), to a comprehensive process (1), Reality is everything is transparent (1), Definite knowledge (1), life (1), guide to understand the life (1), the past of life (1), a day in the life (1), treasure (1), human beings develop themselves (1), Human instinct (1), that the whole existence of the human being has become clear (1), wondering (1), case statements (1), bright lamp (1), a travelling car (1), an infinite space (1), an endless well (1), an endless sea (1), existence (1), cases in the every field of life (1), regeneration (1).
Space	Sun (11), universe (10), space (7), Earth (6), cosmos (1), endless universe where we live (1).
Information	technology (7), doing experiments (3), information (2), experiment (2), reading-writing (2), encyclopaedia (1), research and inquiry (1), all of the lessons especially science (1), searching (1), magnifying glass (1), result of experiment (1), science (1), laboratory for observations (1), invention (1), information awaiting our exploration (1), book (1), library (1), laboratory (1), objective knowledge (1), school (1), solving problems (1), systematic knowledge (1), an experiment (1), a book with useful information (1).
Creative answers	light (4), recycle bin (2), constantly evolving dynamic structure (2), I cannot give an example (1), an empty box (1), descendant tree (1), grandfathers (1), blue (1), the clothes are new and the clothes we bought when the better (1), film (1), raw material (1), snowball (1), Holy Quran (1), fun fair (1), babushka doll (1), bükme with lenticular (a special dish in Afyonkarahisar (1), pyramids in Egypt (1), candle (1), music (1), cry (1), game (1), stairs (1), blue (1), problem (1), cell phone (1), telescope (1), the nerves in the body (1), meal (1), cooking (1), a newborn (1), signs at the road (1).

When Table 1 is examined, "nature" (n = 18), which is included in the category of nature elements, is the most created metaphor from the metaphors set by prospective teachers. Secondly, in the "space" category, the sun (n11) was followed.

The first grade students of science teacher also referred to science as "nature" metaphorically. For example, S17 "science is similar to nature because it explains that it gains meaning when it searches". Prospective teacher produced 141 different metaphors in seven categories of "nature concepts", "philosophical approaches", "space", "information and science", "occupation", "emotional elements", "other". There are 35 different metaphors in the "other" category and 35 different categories in the "nature concepts" category. The "nature concepts" as the number of metaphors are ranked first with 68 metaphors. The metaphors created for the concept of nature of science are given in Table 2.

Table 2. Metaphors and categories of prospective teachers about the concept of nature of science

Categories	Metaphors
Nature elements	forest (13), tree (7), nature (6), ecosystem (5), environment (3), nature(3), rainbow (2), sky (2), seasons (2), seed (2), soil (2), flowers(1), natural resources (1), nature (1), apple (1), fruit of a tree (1), plant (1), a big forest (1), clouds in the sky (1), spring (1), processed material (1), our nature (1), view (1), fruit (1), daisy (1), wind (1),water (1), flowing river (1), endless ocean (1), rain forest (1), rain (1), our living space (1).
Philosophical approaches	Human's nature (3), knowledge that arises from the reality (2), unprocessed fashion (2), research journalist (1), light (1), naturalness in the science (1), conscious man (1), science as a way of knowing (1), real life (1), strange thing (1), going in a dark street (1), curiosity (1), kitchen (1), answer for the what question on searching the cases (1), learning way (1), Indian fabric (1), eternal human (1), art (1), a treasure filled with secrets (1), a child asking questions (1), everything that has lost its coherent reality (1), time (1).
Space	cosmos (11), space (5), cosmos (4), Earth (3), planet (2), Moon (1), Sun (1), Solar System (1).
Information – Science Concepts	ham matter (4), book (4),technology (4), computer (3), school (3), education (2), Maths (2), literacy (2), history (2), encyclopaedia (1), astrology (1), bacteria (1), computer (1), science for the study of the full range of knowledge (1), academic research (1), a very hard encyclopaedia (1), experiment (1), computer programme (1), scientific information (1), science (1), cell wall (1), concept mapping (1), navigation (2), phenomenon (1), a planned lesson (1), schema (1), dealing science in detail (1), history (1).
Profession	teacher (7), a detective trying to find the source of science (2), astronaut (1), cook (1), gardener (1), critics (1), a gardener who develops science (1), a little inventor (1), a profession that requires patience (1), writer (1).
Emotional Elements	white (1), feeling (1), second spring (1), resembles a smug (1), curiosity (1), suspicion (1).
Others	human (6), big family (3), life (3), natural disasters (2), human mind (2), machine (2), light (2), pyramids (2), life (2), resembles Afyon air that may changes (1), excuse (1), chameleon (1), unprecedented (1), old-age people's work (1), lover of science (1),dealing with science (1), a child since he has set up many hypotheses and worked on it (1), factory (1), movie content (1), things that are constantly changing in our lives (1), past of everything (1), medicine (1), human brain (1), human necessities (1), women in the neighbourhood (1), person questioning everything (1), Rıdvan Elmas (1), umbrella (1), ball (1),country (1), Rubik's Cube (1), smart people (1), father (1), camel in the desert (1), man who dedicates his life to a certain purpose (1).

While the most metaphor “forest” (n=13) was created by prospective teachers, second metaphor was “universe” (n=11).

The first grade students of science teachers also metaphorically say "forest" about the nature of science. For example, S37 " is similar to the natural forest of science because it is very diverse. Prospective teachers are divided into eight categories produced 141 different metaphors, namely "instrument-instrument-instrument", "nature element", "child", "philosophical approach", "occupation", "space", "science and information terms". In the "other" category with 30 different metaphors are in the first rank. The metaphors created for the concept of the scientist are given in Table 3.

Table 3. Metaphors and categories of prospective teachers about the scientist concept

Categories	Metaphors
Devices- Tools	machine (5), computer (2), robots (2), lamp (1), car (1), car headlights (1), magnifying glass (1), rudder (1), book (1), book-notebook (1), generator (1), pencil (1), microscope (1), a never ending clock (1), continuous producing machine (1), cell phone (1), brick (1), lamp (1).
Natural Elements	seed (6), fruit tree (4), bee (3), plane (3), plant (3), flower (2), ant (2), fruit (2), lion (1), herb (1), walnut (1), flower (1), sea (1), Poles (1), rock (1), liquid (1), water (1), fox (1), soil (1), home (1), an ant (1).
Children	a little kid (10), 3-5 year-old child (5), a child (5), a curious child (5), a child who is curious about everything (2), a dreamer child (1), a lost child (1), bicycle riding child (1), a newborn baby (1).
Philosophical Approach	people have a wide imagination (2), a surprise box (2), a hungry wolf (1), a hungry being (1), knowing the root of science (1), an empty pool (1), Mecnun in the desert (1), person saving the world (1), answer in the most difficult crossword (1), actors in a movie (1), life (1), person searching the realities in the life (1), treasure (1), human's patience (1), an island full of books (1), non-functional ads (1), a leader (1), curious man (1), a super hero (1), life (1), a guide man (1), round magic village (1).
Profession	teacher (5), astronaut (4), artist (3), journalist (2), a curious journalist (2), soldier (1), science people (1), a conscious teacher (1), farmer (1), detective (1), critics (1), a good observer (1), explorer (1), a recreational vehicle (1), a man working in the laboratory (1), adventurers (1), green grocer (1), musician (1), artist (1), writer- poet (1).
Space	Sun (10), stars (4), space (2), Earth (1), cosmos (1).
Sciences	library (9), research (4), science (1), brain (1), reading a hypothesis (1), a book reader (1), examination of a small part of the machine (1), crossword (1), studying (1), a hardworking student (1), Maths (1), reading writing (1), technology (1), a new journal (1), objective research (1).
Others	light (3), mother (2), camel in the desert (2), factory (2), smart man (2), a different being (1), following science news (1), someone trying to get information (1), growing (1), the person who finds something and explains it (1), a person who reads a lot of books (1), genius (1), a thinker (1), mice (1), people's skills (1), human being (1), a good student (1), need (1), a great honor for humanity (1), Uncle Hasan in the coffeehouse (1), reading book (1), a curious man (1), a curious student (1), leaders (1), artwork (1), questioning-searching-wondering man (1), water monkey (1), song (1), hands (1), arms (1).

Among the metaphors for prospective teachers for the scientist, "little boy" and "sun" (n = 10) were the most created metaphors.

The first grade students of science teacher also said that metaphorical perception about the scientist is mostly "teacher and a small child". For example, S11 states that "a scientist is similar to teacher because the goal is to teach something". S33 says that "Scientist is like a little child because he is curious about everything, researches and inquires".

Prospective teachers created a total of 137 metaphors in five categories, namely "occupation", "philosophical approach", "nature element", "instrument-tool-instrument", "science and information concepts", "other" related to scientific literacy. The "science and information concepts" category ranks first as both metaphor type (n = 37) and metaphor (n = 77). The metaphors created for the concept of scientific literacy are given in Table 4.

Table 4. Metaphors and categories of prospective teachers about scientific literacy

Categories	Metaphors
Profession	teacher (12), carpenter (3), cook (2), educator (2), journalist (2), researcher (1), philosopher (1), scriptwriter (1), traveller (1), carpenter (1), profession (1), engineer (1), conductor (1), writer (1), director (1), teacher (1).
Philosophical Approach	a hungry man (4), light (4), interpreting the information correctly (2), Mecnun in the desert (2), being curious (2), enlightenment (1), first steps of a baby (1), a leaking pool (1), proved truthness (1), critical thinking individual (1), understanding a different language (1), past and future (1), living life (1), art (1), passion (1), a pen (1), exploring new things (1), an essential necessity (1), a hard match (1), infinity (1).
Natural Elements	tree (2), sea (2), leaves in the wind (2), sunflower (1), changing weather (1), nature (1), Earth (1), sea (1), turtle (1), coal (1), cabbage (1), soil (1), flower (1), cosmos (1), fruit (1), seed(1)
Tools- Devices	computer (6), encyclopedia (3), closed box (2), machine (2), puzzle (2), sewing machine (1), newspaper (1), glass (1), pencil (1), keyboard (1), pencil case (1), compass (1), clock (1), generators (1).
Scientific Concepts	book (25), library (6), equation (4), objective research (4), Maths (3), journal-newspaper (2), real information (2), reviewing articles (2), knowledge steps (1), reading science (1), scientific result (1), scientific ways(1), experiment (1), dynamic process (1), doing experiments (1), experimental data (1), reading journals(1), knowledge in the books (1), thought and skills (1), education (1), science literate individuals (1), reading formulas (1), a comprehensive book (1), light (1), book with lots of information in it (1), human brain (1), concepts (1), unexplored atom (1), knowing how to read (1), one who reads (1), a process (1), technology (1), using technological devices (1), theoretic knowledge (1), speaking foreign language (1), discovering new things (1), love (1), vitamin (1), learning information (1).
Others	primary school child (4), person with certain knowledge (3), child (3), conscious book reader (2), raising a reading generation (2), student (2), family (2), mother (1), addiction (1), baby (1), a vertical bar (1), diamond (1), truthiness (1), the process of defining everything that exists in the world (1), developed university (1), travelling (1), food (1), hobbies of humans (1), a skilful person (1), reading books (1), pure mathematics (1), the lottery (1), scenario (1), cigarette (1), doing sports (1), like an ant (1), working constantly (1), unicorn (1), understanding foreign language (1), new student (1), love (1), feeding (1).

Prospective teachers constituted the most " book " (n = 25) and teacher (n = 12) metaphor related to scientific literacy.

Most of the second grade students of science teacher states “book” metaphorically in related to scientific literacy. For example, S16 says that " Scientific literacy kit is similar, because there are many topics in books that we do not know much about. It is known as long as you read it in scientific literacy." prospective teachers produced 134 different metaphors in six categories, namely "elements of nature", "philosophical approach", "concepts of science and information", "mine", "food" and "other" related to scientific knowledge. The metaphors constructed for the concept of scientific knowledge are given in Table 5. Most metaphor types (n = 36) and number of metaphors (n = 55) are in the categories of science and nature.

Table 5. Metaphors and categories of prospective teachers about the concept of scientific knowledge

Categories	Metaphors
Natural Elements	cosmos (3), tree (2), sea (2), ocean (2), soil (2), a flower (1), leaves (1), fire (1), moonlight (1), spider (1), flower (1), sea (1), nature (1), Earth (1), sky (1), stars in the sky (1), Sun (1), turtle (1), stone (1), seasons (1), river (1), seed (1), stars (1), clover (1).
Philosophical Approach	infinity (3), unchanging lines (2), educator (2), reality (2), constitutional rules (1), child waiting to be understood (1), knowing to know (1), a leaking pool (1), information about the future (1), reflects reality exactly (1), a secret treasure (1), life that we live (1), fineness (1), an unfilled ad (1), boiling water (1), hard to read and hard to understand article (1), immortality and metamorphosis (1), part of a puzzle (1), endless river (1), consistency (1), a pen (1), time (1).
Science Concepts	encyclopaedia (5), technology (4), phenomenon (3), theory (3), doing experiment (2), real knowledge (2), coming out reality completely (2), proved thought (2), law (2), certain knowledge (2), objectivity (2), paradigm (2), researched and tested information (1), knowledge (1), information essence (1), learning and searching knowledge (1), science (1), scientific result (1), who helped us, who we know (1), facts with fixed rules (1), information in the course book (1), proved truths (1), thoughts accepted by everyone (1), laws accepted by everyone (1), proved experiments (1), complex information net (1), concept (1), mathematics theory (1), objectivity (1), school (1), regeneration (1), bounded area (1), continuity (1), developing concept with technology (1), puzzle (1), provable information (1).
Mine	water (7), gold (5), diamond (1), pure water (1), jew found from the ground (1), salt (1).
Food	fruit (2), walnut (1), tea (1), favorite fruit (1), vinegar (1), meal (1).
Others	light (4), friendship (3), child (2), human (2), closed box (2), teacher (2), gun (2), mother's milk (1), a certain accumulation (1), changing weather (1), a vertical bar (1), effort (1), answer in the most difficult crossword (1), newspaper (1), life (1), medicine (1), primary school teachers (1), pearl (1), internet (1), generator (1), pencil (1), pencil case (1), stairs (1), fashion (1), written music (1), origami (1), student (1), professor (1), page (1), scenario (1), password (1), theatre (1), unicorn (1), recipe (1), star scientist (1).

The "universe" (n = 8) and "water" (n = 7) are among the metaphor created by the prospective teachers related to scientific knowledge.

The fourth grade students of science teachers also used metaphorically the most " water " statement about scientific knowledge. For example, S 23 says that " Scientific knowledge is similar to the water and it finds its way forward".

CONCLUSIONS

It has been found out that 219 prospective teachers produce a large number and variety of metaphors for each concept, as a result of analysis of science, science people, scientific knowledge, nature of science, and metaphors produced by elementary school mathematics prospective teachers in the research.

When we look at the metaphors created about the concept of science, it is seen that those who have high frequencies (such as nature, universe) are more in the definition of science and others are the metaphors of functioning of science (solar, technology, holding candle in the darkness). Teachers often produced realistic metaphors about this concept. Bıyıklı etc. (2014) studied secondary school and secondary school students' metaphors about the concept of science. According to the findings of this research, middle school and high school students produced 153 metaphors related to the concept of science. It has been seen that the metaphors produced by both middle school and high school students have a positive structure when the numbers and qualities of the metaphors produced by middle school and high school students differ. Aktamış (2016) states that the three metaphors with the highest frequency value and the highest frequency of knowledge in the metaphors of secondary school pupils related to the concept of "science", most of which are understood as "Dynamic Structure" "Science, technology and experiment". When metaphors produced by scientific knowledge are looked at, metaphors are produced by metaphors related to the functioning of proven scientific knowledge such as "real", "experiment", "technology" while producing metaphors in which space and space elements of scientific information such as "universe" and "water" are obtained by participants. At the same time, written material in which information such as "Encyclopedia" is included is a metaphor. In general, it can be said that prospective teachers have created metaphors about the nature of realistic and scientific information and the way of getting it.

Turgut (2009) pointed out that prospective teachers gave evidence that their scientific wisdom approaches are in line with realist understanding and that they believe in the existence of a scientific method with certain steps to bring accurate wisdom. While the other half believes that scientific knowledge will not change, Kaya et al. (2013) thought that primary school students would change the scientific knowledge of about half of the students over time.

When metaphors produced by prospective teachers about scientific literacy are evaluated, "book" and "teacher" are the most produced metaphors but not fully reflecting scientific literacy. Generated metaphors, such as a conscious book reader and a right interpretation of the scientific information, reflect scientific literacy more realistically.

Although a large number of metaphors are given, metaphors produced show that prospective teachers do not have enough perception about this concept. Generated metaphors related to the nature of science, which are in significant dimensions of scientific literacy, are more like metaphors produced about science and scientific knowledge. "Forest" metaphor is the most produced metaphor. In Lederman (1992), science is expressed as stereotypical beliefs and values in the development of science or scientific knowledge as a way of acquiring a natural knowledge. When looking at this definition, it seems that the prospective teachers' metaphor for this concept is far from the scientific belief and epistemology. In most of the research, it is stated that student and prospective teachers are not well aware of the nature of science and have widespread misconceptions. Aslan et al. (2009) stated that science and technology teachers have insufficient and inadequate views on the nature of science, the nature of observations, the nature of observations, the nature of scientific information, the nature of propositions, theories and laws, and science and technology in the study of science and technology teachers. Doğan Bora (2006) stated that high school 10th graders had many misconceptions about the nature of science, and they had traditional views about the definition of science, the characteristics of scientists, and the basic assumptions of science. Mıhladı and Doğan (2017) and Çınar and Köksal (2013) have achieved similar results to those mentioned above in their studies.

Prospective teachers are more likely to produce metaphors (such as computers, teachers, machine ants, bees) related to the functional and operational characteristics of scientists. Metaphors (such as small children, journalists, curious little children) are particularly noteworthy about the features of science, such as curiosity and research. While there are positive metaphors about the scientists, no negative metaphors have been found. However, Doğan et al. (2006) states that more than half of the students in their study have expressed insufficient views about scientists. In his study Aktamış (2016) indicates that secondary school students have metaphors such as "Researching, Interrogating, Efforting Person" and "Beneficiary" related to "Science People" concept. When the frequency values of the generated metaphors are examined, the three metaphors with the highest frequency value; "It seems to be" detective, professor and invention". In the same work ant, tree, oxygen, candle, sun, light etc. produced metaphors resemble the findings of our study. Kaya et al. (2013) stated that primary school students in general have similar characteristics such as inventing inventions, engaging in science, trying to be beneficial to humanity and working hard. Şenel and Aslan (2014) stated that pre-school prospective teachers had no negative metaphor in the metaphors for the concepts of "Science" and "Scientific People" and that they only had unrealistic, traditional perceptions for both concepts.

Köseoğlu et. (2008) declares that the nature of science is clearly emphasized and it is inevitable to be taught with opportunities to think deeply on learners. Köseoğlu et. (2008) suggests that teachers should take continuous professional development seminars to ensure that reforms play a role as key elements in science education reforms and that the reforms that require significant changes in the teaching of science classes in the classroom can be successful, and that the development of instructional materials on science teaching nature for both teachers and prospective teachers. As a result, it can be said that the prospective teachers who will be tomorrow's science and mathematics teachers do not have a sufficient level of opinion especially about nature of science and scientific literacy. Apart from the theoretical lessons, these can be applied to understand this concept and its contents. It seems difficult that a teacher who is not proficient in science and related concepts educate a science-minded and science literate student.

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Protection and Promotion of Mental Health

Jarmila KRISTOVÁ

*Faculty of Nursing and Professional Health Studies,
Slovak Medical University in Bratislava, Slovak Republic
jarmila.kristova@szu.sk*

Zuzana BACHRATÁ

*Faculty of Nursing and Professional Health Studies,
Slovak Medical University in Bratislava, Slovak Republic
zuzana.balajova@gmail.com,*

Emília MIKLOVIČOVÁ

*Faculty of Nursing and Professional Health Studies,
Slovak Medical University in Bratislava, Slovak Republic
emilia.miklovicova@szu.sk*

ABSTRACT

The content focus of this conference contribution is the issue of mental health and possibilities of its promotion. WHO says that there are more than 450 million people with mental disorders in the world and 350 million of them suffer from depression. WHO estimates also point to the fact that depression along with cardiovascular disease will be the most commonly occurring diseases in the year 2020 and it will be the main cause of sickness absence in Europe in near future. The mental health is important not only for individuals, but it has growing importance in terms of economic growth and social development. WHO said that the programs of promotion of mental health are extremely important. It was mentioned in “*European policy framework for supporting the government and social activities for health and well-being*” already in the year 2013. Is necessary, that each state of EU involve, in accordance with their specific needs, social components which can participate in the promotion of mental health of inhabitants. Important social sector in all areas of prevention of mental diseases and disorders is nursing. Nurses, as the largest group of health professionals, form a significant potential in promotion, protection and development of mental health of the population of all ages. A research study is aimed to determine the effect of work on psyche and mental health, job satisfaction of interviewed employees and promotion of mental health. 262 respondents participated at the study, they were employed in different professional spheres in Slovak Republic. Two questionnaires were used to map the data: Meister questionnaire for subjective assessment of mental stress at work and questionnaire. The conclusions of the study showed job satisfaction of 54.2% of respondents surveyed. Inadequate surviving of work load was registered at 59,54% of respondents and inadequate surviving of work load statistically occurred in helping professions ironically ($p = 2,9 \cdot 10^{-5}$).

Key words: Mental health. Work environment. Nursing.

INTRODUCTION

According to MedlinePlus (2017) mental healthsanity includes emotional, psychological and social well-being. The World Health Organization (2009) describes the mental health as “a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community”. Mental health affects the way of thinking, acting and coping with all kinds of life events. It is important in every period of life.

Mental health has an increasing importance in terms of the global economic growth and social development. Bowis, the European Parliament’s rapporteur for mental health issues, said that the mental health disorders are the fastest-growing diseases affecting every fourth person in the world and not a single EU member state can deal with this problem. He also pointed out that even if health is not really an EU competence, health and safety at work is (EURACTIV, 2006).

As a reaction to the increasing global incidence of psychiatric illnesses, several major world and European studies and conferences were initiated:

- 1999 – WHO: Health for all in the 21st century (target 6: Improving mental health – to improve the psychosocial well-being of people, increase their ability to cope with stressful life events and reduce the suicide rate by at least a third by 2020),
- 2005 – The European Commission published *the Green paper – Improving the mental health of the population: towards a strategy on mental health of the European Union* (target: a debate on promoting the mental health with a wide range of relevant parties),
- 2007 – WHO: *Global plan of action on workers' health 2008-2017* (target: health promotion at workplaces),
- 2008 – the European Conference on Mental Health: *European pact for mental health and well-being* (targets: to highlight the importance and relevance of mental health and well-being of the European Union, its member states, interest groups and citizens, to deal with the mental health issues at workplaces, among young as well as elderly people and prevention of depression and suicide),
- 2009 – Brussels Conference – *European pact for mental health and well-being* under the auspices of the WHO also dealt with the mental health at workplaces (target: to develop activities for promoting mental health and well-being at workplaces),
- 2013 – WHO in *The European policy framework supporting action across government and society for health and well-being* (target: support of the mental health promotion programmes); (ILO, 2000),
- 2013 EU–OSHA Düsseldorf: International Congress (target: management of health protection at workplaces and psychological stress therapy),
- 2014-2015 EU–OSHA: Europe-wide campaign in 30 countries "Healthy workplaces manage stress" (targets: to improve the understanding of work-related stress and psychosocial risks at work, to support the management of these risks, to prevent significant negative impacts, to provide a support and guidance to employees and employers, and to promote the use of practical and simple tools to handle the work-related stress (WHO, 2017),
- 2016 – Brussels: International Congress (targets: to develop a strategy for the positive elimination of mental disorders that account for approx. 22% of all disabilities in the world today; to focus the attention of EU member states with regard to their specific needs on the effective prevention of mental disorders and mental health promotion (European Commission, 2016),
- In 2002, the National mental health programme for the Slovak Republic was drawn up in compliance with the *Mental health action plan for Europe*. Its aim was to develop a system of mental health care that will both effectively promote the mental health and lead to the liberation of people with the mental disorder from isolation. (Ministry of Health of the Slovak Republic, 2004). The importance of strengthening the mental health support programmes is emphasized also in the document published by the ministry in 2014 – *Strategic framework for health for 2014-2030*.

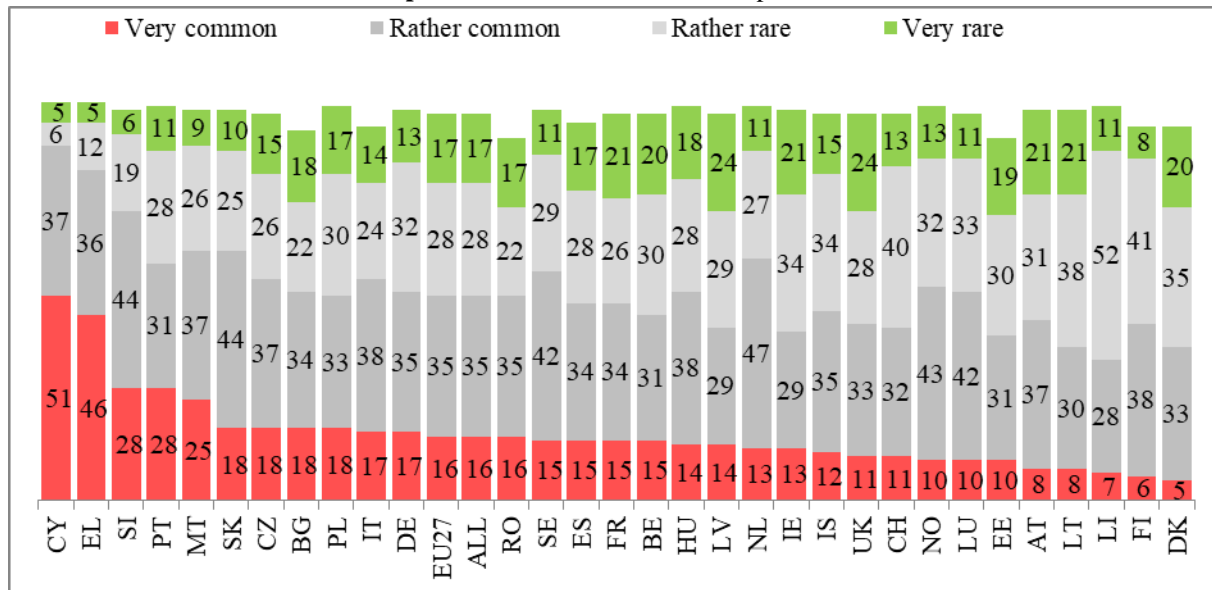
Mental health is affected by a number of psychosocial factors. One of the major determinants of the mental health is the workload and stress at work that is documented by the above-mentioned studies and conferences dealing with the mental health at workplaces. Among the work-related psychosocial risk factors, that have a major impact on the physical and mental health of employees, belongs (McNeely, 2005; Jettinghoff and Houtman, 2009):

- work on shifts,
- too busy or inadequate work schedule,
- failure to perform work,
- high demands on work,
- high workload, short deadlines, insufficient information,
- insufficient organizational justice,
- unsatisfactory teamwork,
- bad interpersonal relationships,

- insufficient social support,
- work in isolation,
- reduction of staff levels,
- lack of resources.

Graph 1 is an informative overview of the occurrence of work-related stress in European countries. The statistical results from UE-OSHA study (2013) are alarming. Work-related stress is the most prevalent in Cyprus, Greece, Slovenia, Portugal and Malta. The lowest rate of work-related stress is in Denmark, Finland, Italy, Lithuania and Austria.

Graph 1 Work-related stress in European countries



Source: UE-OSHA (2013)

In the context of psychosocial risk factors and increasing incidence of mental illnesses, the importance of mental health promotion is increasing. Its primary global socio-economic goal is to preserve, improve and eliminate the risk factors coming from various individual, working, social, economic, political and other areas. EU-OSHA (2013) has included the social support, sense of belonging at work, meaningfulness of work, finding a purpose of person's own work, ability to make decisions about work and organize work at one's own pace among the elements protecting mental health at work.

MENTAL HEALTH NURSING

One of the major social sectors in all areas of prevention of mental illnesses and disorders is the nursing care. Five million nurses working in the European region play an important role in improving the health of individuals, families and communities. They represent the largest integrated group of healthcare workers and they often provide the first contact with the health and social system (Farkašová, 2006). Already in 2000 at the WHO conference "Nurses and midwives: a force for health" in Munich, it was reported that nurses are one of the key sources in a strategy based on the principles of primary prevention and public health support. In the Slovak Republic, this role of nurses is declared in § 2 par. 1, letter s) indecree no. 364/2005 Coll. that determines the extent of nursing practice provided by the nurse independently or in cooperation with the doctor and the extent of midwifery practice provided by the midwife independently or in cooperation with the doctor: "... the nurse is involved in the protection, promotion and development of public health". In relation to this thesis, the nurse is able to support the symbiotic nature existing between health and work. The primary (universal) prevention is aimed at the elimination of situations endangering mental health. The secondary prevention can detect and cure the mental problems early enough to avoid temporary or permanent changes in mental health. The tertiary prevention includes a whole set of strategies aiming at the prevention of deterioration in health and reduce the consequences of mental disorders. The nurse should be prepared

to promote the mental health at three levels: individual, family and community. The role of nursing can be fulfilled through education that is today understood as a controlled and documented activity of a nurse. The primary educational goal is to understand and acquire new information and skills, to create a personality structure with values, attitudes, emotions and intentions, and achieve changes in person's behaviour and action. An educational plan containing the following components is essential to successfully meet the goals for mental health promotion:

a) **conditions for the realization of education:**

- environment – institutionalized (primarily ambulatory health care and family, community or work environment),
- time duration and number of educational units (sessions) as needed by the individual, family, community, employee/employees,
- selection of methods – monologic (explanation), dialogical (interview), printed word (bulletin, leaflet, reference to professional literature),
- form – one-to-one (individual, employee), group (family, community, employees),
- principles of education – purposefulness, succession, individual approach, activity, combination of theory and practice,
- phases of education – motivational, cognitive, performing, controlling,
- adaptation of communication based on the intellect of the educated person/people

b) **nursing diagnosis (NDg) (Nanda 2015-2017)**

- NDg1 – stress overload 00177
- NDg2 – ineffective coping 00069
- NDg3 – readiness for enhanced resilience 00212
- NDg4 – readiness for enhanced coping 00158
- NDg5 – deficient knowledge 00126
- NDg6 – readiness for enhanced knowledge 00161
- NDg7 – ineffective health maintenance 00099
- NDg8 – risk-prone health behaviour 00188

c) **educational units (EU):**

- EU1 – mental health,
- EU2 – work stress coping strategies.

Universal interventions of the nurse to educational units:

- to monitor the mental health of the individual, family and community, to identify stress symptoms of the employees and find appropriate solutions to mitigate the stress,
- to identify the at-risk individuals, families and communities using the assessment scales (Diagnostic and statistical manual of mental disorders, Minnesota multiphasic personality inventory – MMPI, Verbal association tests and sentence completion tests, Beck depression inventory, Zung self-rating depression scale, Liebowitz social anxiety scale),
- open communication on the problems and stresses arising from the work,
- to participate in organizing the supervising meetings at workplaces,
- to cooperate with a team of mental health professionals (psychiatrist, clinical psychologist, supervisor, social worker),
- to initiate and participate in the mental health research for all age groups.

Specific interventions/recommendations of the nurse to educational units:

- to inform/raise the level of knowledge of the individual, family and community about the mental health, its individual and social significance, protection and promotion,
- to recommend realization of coping strategies with the individual, family and community that can be helpful to deal with the workload (coping focused on valorisation, problem-oriented coping, emotion-oriented coping, trying to control the feelings in relation to the stressor and to maintain the emotional balance thanks to the emotional “discharge” and regulation,
- to help to identify the work plans and specify strategies for their implementation,

- to help to clarify the value of time for the mental health of the individual, family and community,
- flexible work plans and working hours,
- possibility to work from home,
- written lists of work assignments,
- flexible schedule of work breaks,
- to provide information about helplines as another possibility of promoting and protecting the mental health.

THE STUDY

Targets

The aim of the empirical research was to:

- map the psychosocial workload of respondents,
- compare the psychosocial burden of respondents by their gender, occupation and residence,
- determine the level of job satisfaction of the respondents,
- verify the differences in the level of job satisfaction of the respondents according to their gender, occupation and residence,
- verify the coincidence of psychosocial workload with the job satisfaction.

RESPONDENTS AND METHODS

The selected group consisted of 262 respondents. Their inclusion into the group was conditioned by a permanent job and willingness to answer the questions. The survey was attended by 130 (49.62%) respondents performing “assisting professions” and 132 (50.38%) respondents working in the industrial sectors. 128 (48.85%) men and 134 (51.15%) women participated in the survey, from which 194 (74.05%) said that they live in the city and 68 (25.95%) in the village. We used a standardized measuring tool to obtain the data – Meister questionnaire for assessing the psychological burden at work (decree of Ministry of Health of the Slovak Republic no. 542/2007 Coll.) Meister questionnaire is a standard method aimed at measuring the subjective psychological burden at work. It contains 10 questions that help to identify three factors: the overload factor, monotony factor and the factor of nonspecific burden (stress response). Each factor is characterized by some of these attributes: time pressure at work, low job satisfaction, high responsibility, dull work, problems and conflicts, monotony, nervousness, being fed up with work and tired, long-term tolerability. Respondent expresses his/her attitude towards the statement on the 5-point rating scale: yes, completely (5 points), rather yes (4 points), (3 points), rather no (4 points), not at all (1 point). We also added a scale of our own design that focuses on assessing the degree of job satisfaction to the Meister questionnaire. In this part of the questionnaire, respondents expressed their job satisfaction in five work area through the 5-point scale (5 – high job satisfaction, 1 – high job dissatisfaction).

The questionnaire was anonymous, voluntary and distributed electronically via www.surveymonkey.com in May-June 2016, and its response rate was 78.92%.

We used descriptive statistics for the interpretation of results, and for the testing of independence of two categorical variables, we used the χ^2 test. A two-choice T-test was used for assessing the difference between two average results of the independent groups and the correlation of selected variables was assessed by Pearson’s linear regression test. We considered $p \leq 0.05$ to be significant. SPSS Statistics was used for the statistical evaluation.

FINDINGS

When diagnosing the impact of work on the employee’s psyche, we evaluated Meister’s mental load factors and the way of coping with the burden. Chart 1 provides an overview of the descriptive characteristics of each statement in the Meister questionnaire.

Chart 1 Overview of the descriptive characteristics of each statement in the Meister questionnaire

Statement	Characteristics	Profession	Median	Standard deviation	Minimum	Maximum	Critical median value
I'm often pressed for time at work	Time pressure	Assisting	3	1.24	1	5	3.0
		Industry	4	1.3			
Job is not satisfying for various reasons	Low job satisfaction	Assisting	3	1.15	1	5	2.5
		Industry	3	1.31			
My work psychologically burdens me because of high responsibility associated with serious consequences	High responsibility	Assisting	3	1.28	1	5	3.0
		Industry	3	1.28			
My work is mundane, little incentive, rather dull	Dull work	Assisting	2	1.31	1	5	2.5
		Industry	2	1.32			
Conflicts or problems often arise at my work and I'm not able to let it go even after the work shift ends	Problems and conflicts	Assisting	3	1.33	1	5	2.5
		Industry	3	1.29			
I hardly keep my attention and readiness at work because there is often nothing new and decisive going on	Monotony	Assisting	1	1.28	1	5	2.5
		Industry	2	1.39			
My job is psychologically so demanding that I feel nervous and agitated after a few hours	Nervousness	Assisting	3	1.26	1	5	3.0
		Industry	3	1.23			
I'm doing some work but I want to do something else after a few hours	Repulsion	Assisting	2	1.35	1	5	3.0
		Industry	3	1.34			
My job is psychologically so demanding that I feel lifeless and tired after a few hours	Exhaustion	Assisting	3	1.33	1	5	3.0
		Industry	3	1.2			
My job is psychologically so demanding that it is probably not possible to do it for years with the same performance	Long-term tolerability	Assisting	3	1.47	1	5	2.5
		Industry	3	1.3			

Based on the analysis of median values in each part of the Meister questionnaire for assessing the psychological burden at work, we can conclude that the most oppressive factors for respondents working in the industry, that exceed the critical values (standardized values set by W. Meister), are the following four areas: time pressure, low job satisfaction, problems and conflicts and long-term tolerability. For respondents performing assisting professions, the most oppressive factors were these three areas: low job satisfaction, long-term tolerability, problems and conflicts. Critical values were reached by respondents working in the industry in the following areas: high responsibility, nervousness, repulsion and exhaustion. In case of respondents with assisting occupations, critical values were found in these areas: time pressure, high responsibility, nervousness and exhaustion. For the group of respondents working in the industry, the least oppressive areas were the following areas: mundane work and monotony, and for the second group of respondents: mundane work, monotony and repulsion.

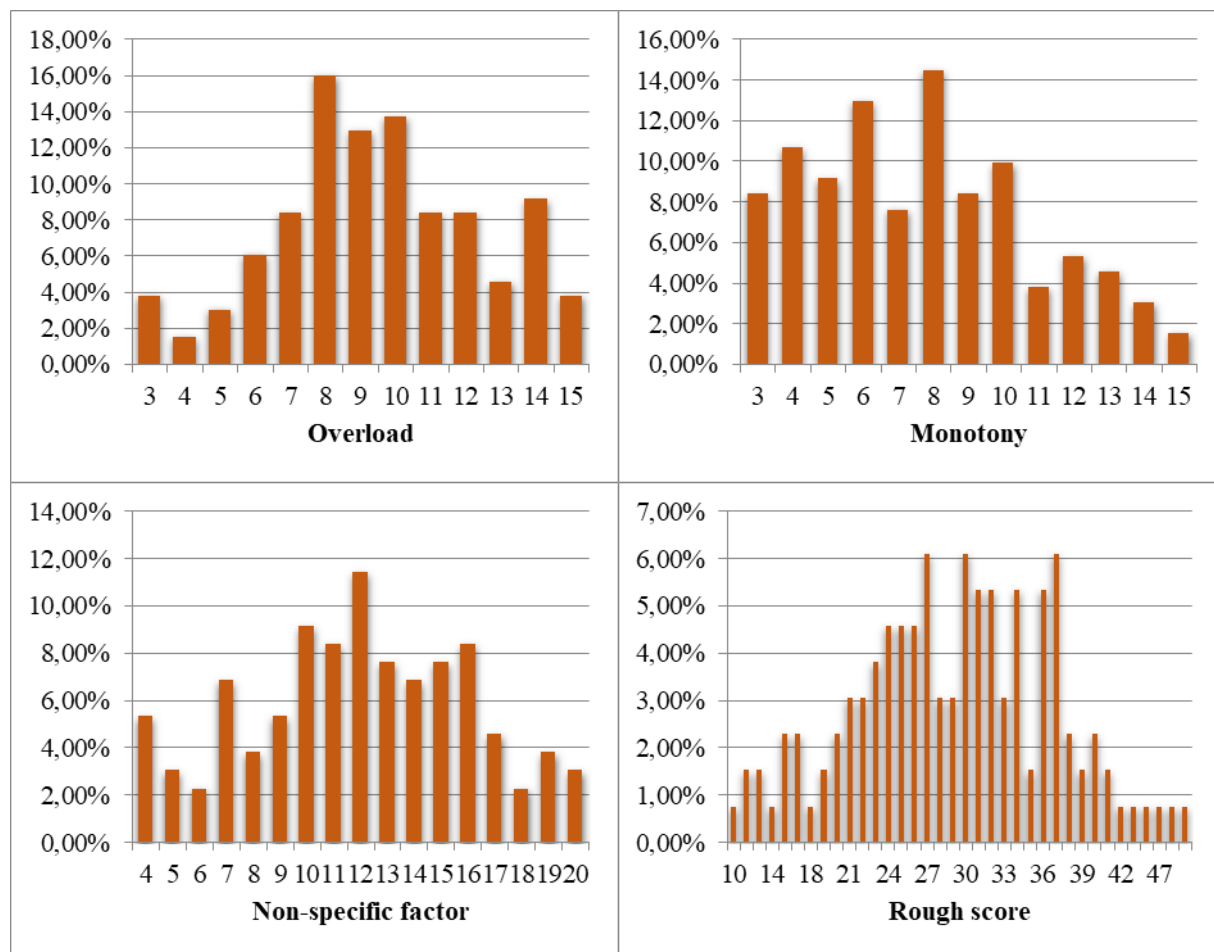
Then we assessed all factors of the psychological work-related burden as you can see in the overview of the descriptive characteristics of each factor in Chart 2.

Chart 2 Overview of the descriptive characteristics of each oppressive factor

Meister oppressive factors	Statements	n	\bar{x}	Median	SD	Min. value of selected sample	Max. value of selected sample	Maximum for Meister oppressive factors
I. Overload	1+3+5	262	9.49	9	2.96	3	15	15
II. Monotony	2+4+6	262	7.67	8	3.13	3	15	15
III. Non-specific factor	7+8+9+10	262	11.95	12	4.15	4	20	20
RS Rough score	I.+II.+III.	262	29.04	30	8.03	10	49	50

In the group of participant, the oppressive factor overload has the average value 9.49 (maximum 15), monotony 7.67 (maximum 15), non-specific factor 11.95 (maximum 20) and in the rough score, respondents reached the average value 29.04 (maximum 50).

Graph 2 gives an overview of the Meister oppressive factors and the attitudes of individuals categorized into degrees of the rating scale. In case of 10 (3.82%) respondents, the oppressive factor overload is at the maximum level (15). Monotony was indicated as a factor at the maximum level (15) by 4 (1.53%) respondents, and according to 8 (3.05%) respondents, the non-specific factor is at the maximum level (20).

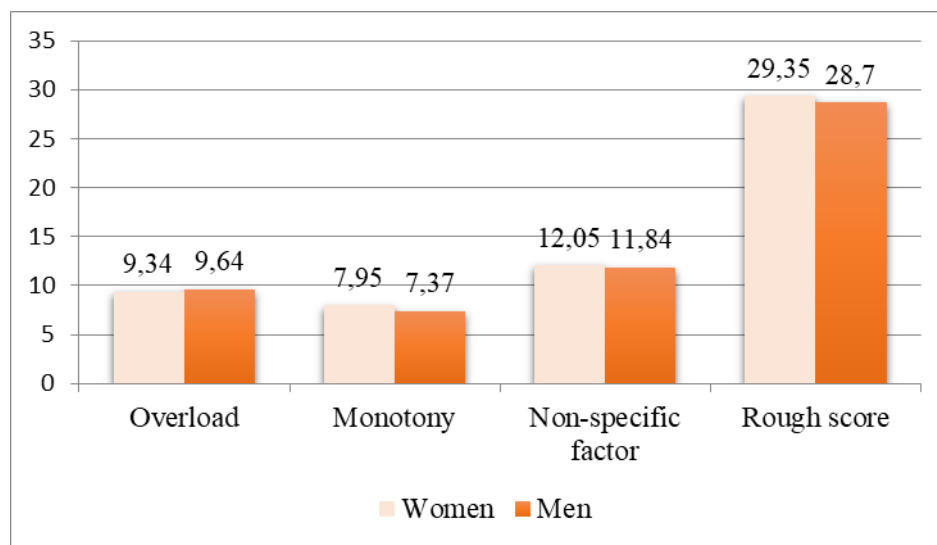


Graph 2 Meister oppressive factors – attitudes of individuals categorized into degrees of the rating scale

No statistically significant differences were found between men and women when comparing the evaluation of the Meister oppressive factors (Chart 3, Graph 3). We also found out that men and women show critical values only in the area of rough score. Within the individual factors, the critical values of the averages were not exceeded.

Chart 3 Comparison of the subjective workload evaluation by gender

Meister oppressive factors		Women				Men				p
		n	\bar{x}	SD	Critical value	n	\bar{x}	SD	Critical value	
I.	Overload	134	9.34	3.02	10	128	9.64	2.8	12	0.41
II.	Monotony	134	7.95	3.11	9	128	7.37	3.14	8	0.13
III.	Non-specific factor	134	12.05	4.43	14	128	11.84	3.85	12	0.67
RS	Rough score	134	29.35	8.57	29	128	28.7	7.44	26	0.51

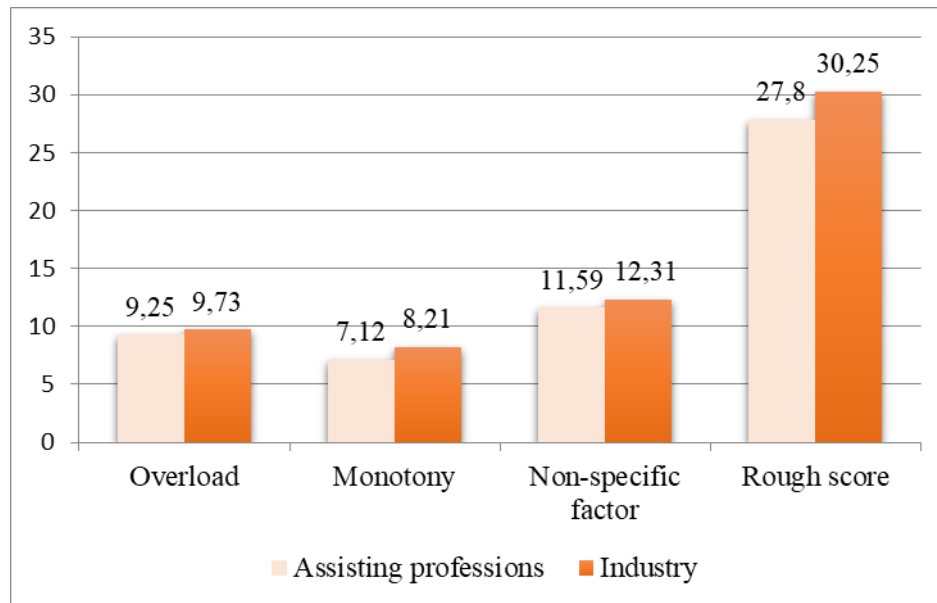


Graph 3 Comparison of the subjective workload evaluation by gender

Regarding the profession of respondents, our analysis showed some statistically significant differences in case of two factors between respondents performing the assisting professions and the respondents working in the industry. Low stimulation occurred mainly among respondents working in the industry ($p = 0.004$). They also achieved a statistically higher rough score ($p = 0.01$) than respondents with assisting occupations. Considering the level “overload” and “non-specific factor”, no significant differences were found among these two groups of respondents (Chart 4, Graph 4).

Chart 4 Evaluation of workload by profession

Meister oppressive factors		Assisting professions			Industry			p
		n	\bar{x}	SD	n	\bar{x}	SD	
I.	Overload	130	9.25	2.78	132	9.73	3.10	0.18
II.	Monotony	130	7.12	2.92	132	8.21	3.25	0.004
III.	Non-specific factor	130	11.59	4.21	132	12.31	4.08	0.15
RS	Rough score	130	27.8	7.59	132	30.25	8.29	0.01

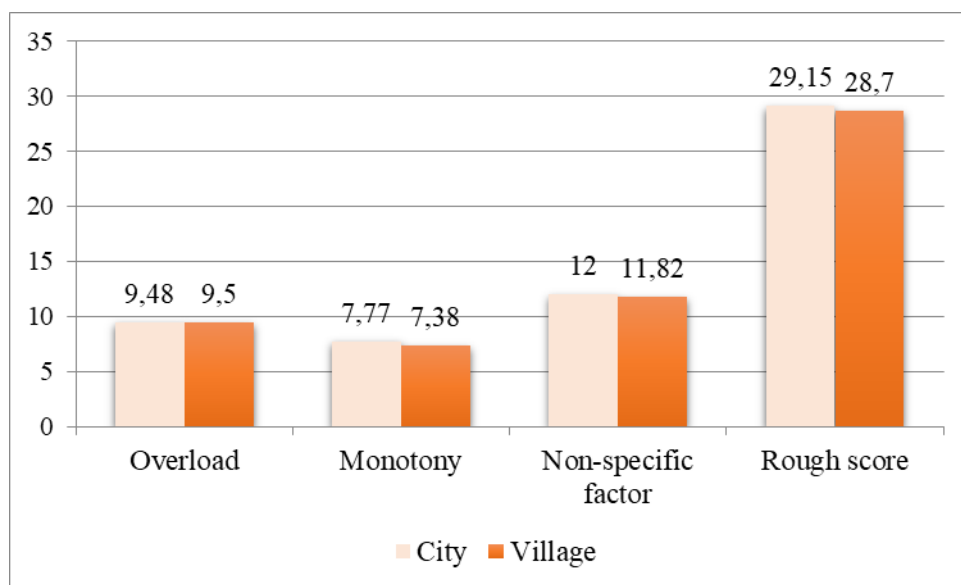


Graph 4 Evaluation of workload by profession

We also verified whether the residence of respondents has any impact on the psychosocial burden. Two-choice t-test showed that respondents living in the city do not differ from residents living in the village in any of the oppressive factors determining the extent of psychosocial burden (Chart 5).

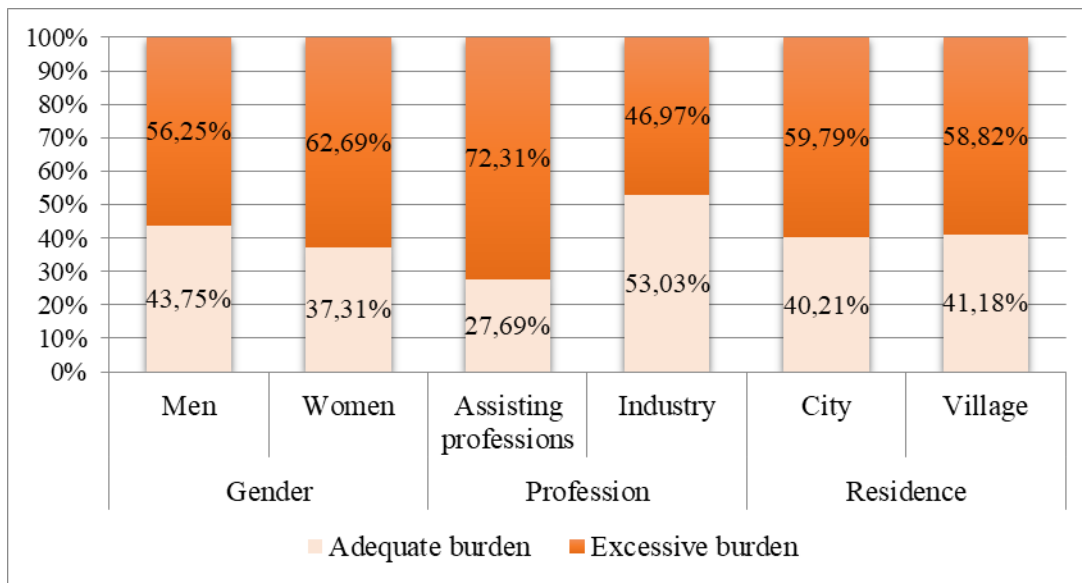
Chart 5 Evaluation of workload by residence

Meister oppressive factors		City			Village			P
		n	\bar{x}	SD	n	\bar{x}	SD	
I.	Overload	194	9.48	3.06	68	9.5	2.63	0.97
II.	Monotony	194	7.77	3.2	68	7.38	2.92	0.37
III.	Non-specific factor	194	12	4.16	68	11.82	4.14	0.76
RS	Rough score	194	29.15	8.39	68	28.7	6.94	0.66



Graph 5 Evaluation of workload by residence

In the second assessed area, we surveyed how respondents are experiencing the psychosocial burden at work. From all participants, 156 (59.54%) have felt an excessive burden while only 106 (40.46%) have dealt with it adequately. In the group of respondents with assisting professions, there were much more individuals ($p < 0.001$) who had problems to deal with the psychological stress at work than people working in the industry. Differences in handling the psychological burden between genders and types of residence were minimal and did not reach the statistical significance (gender: $p = 0.28$; residence: $p = 0.88$) (Graph 5).



Graf 5 Dealing with psychosocial burden at work according to gender, profession and residence

In the intentions of the third goal, we evaluated the job satisfaction of respondents. A positive assessment was ascertained in case of 54.2% of respondents (18.32% with high job satisfaction, 35.88% with slight job satisfaction). The job was negatively assessed by 36.64% of participants and 9.16% of respondents expressed the same level of job satisfaction and dissatisfaction. The basic data of the descriptive statics are presented in the Chart 6.

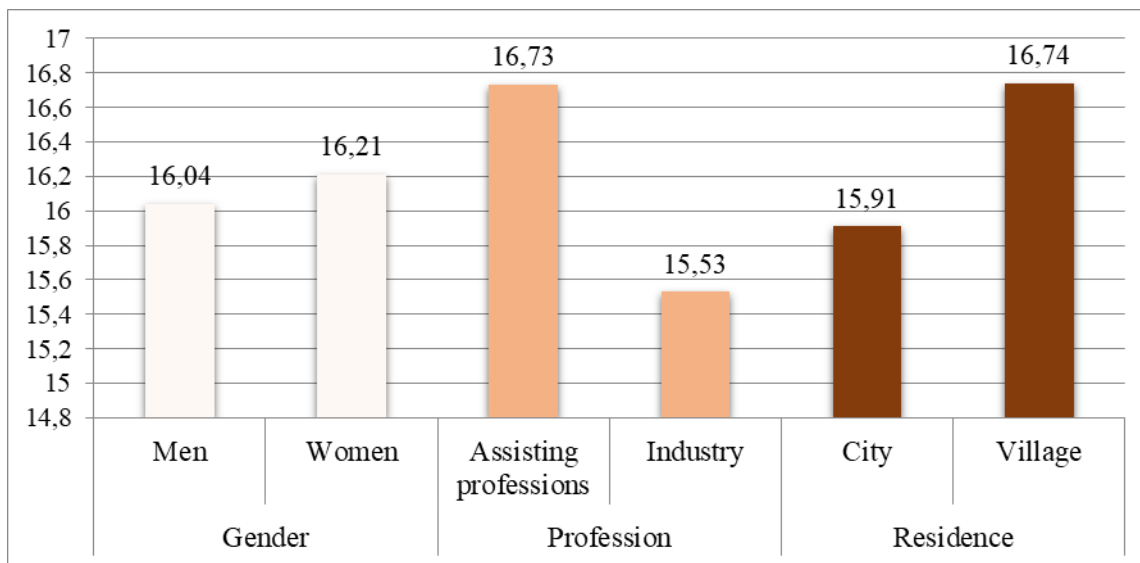
Chart 6 Scale of job satisfaction

	No. of respondents	Average	Minimum	Maximum	Modus	Median	Dispersion	Standard deviation
Job satisfaction	262	16.13	5	25	19	16	22.07	4.69

The aim of the study was to identify whether there are some differences in the subjective assessment of the job satisfaction of employees depending on their gender, profession and residence. We found out that men and women subjectively evaluate the job satisfaction equally ($p = 0.78$) and there also weren't any statistically significant differences among respondents based on their residence ($p = 0.19$). When comparing the results by professions, we found out that the subjective evaluation of the job satisfaction of respondents working in the industry and those performing assisting professions was much different. Participants with assisting occupation proclaimed a higher level of job satisfaction more often than respondents working in the industry ($p = 0.03$) (Chart 7, Graph 7).

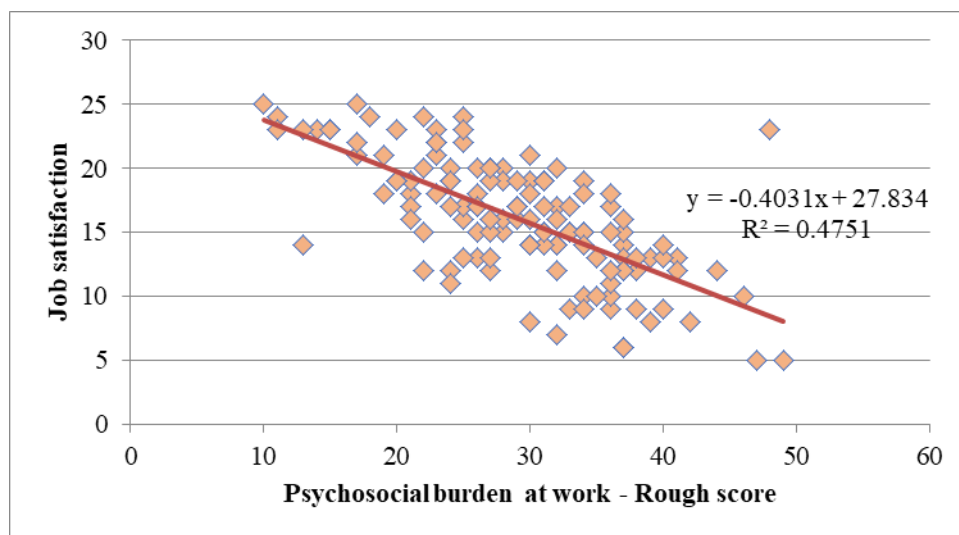
Chart 7 Results of T-test

Variables	F	Sig.	t
Gender	1.01	0.78	-0.27
Profession	0.77	0.03	2.09
Residence	1.08	0.19	-1.29



Graph 7 Average job satisfaction figures by gender, profession and residence

Considering the last goal of this empirical study, we verified the coincidence of the psychosocial burden at work with the job satisfaction of respondents. Our expectation was that with a rising level of psychosocial burden, the job satisfaction rate would decrease. The statistical analysis of the results confirmed our assumption. We also noticed a moderate negative correlation between the overload and job satisfaction ($r = -0.5$), monotony and job satisfaction ($r = -0.6$), non-specific factor and job satisfaction ($r = -0.53$) as well as rough score of Meister questionnaire and job satisfaction ($r = 0.68$) (Graph 7).



Graf 8 Relation between psychosocial burden at work and job satisfaction

DISCUSSION

When processing the discussion, several databases were used for searching (relevant articles dealing with our topic): Pubmed, ScienceDirect, Scopus, SpringerLink, Web of Science, ProQuest Central, Medvik, Database of Slovak Medical Library. Determining conditions were: English language, German language, Slovak language, Czech language and Polish language, numerous documents and the time frame 2000-2017. Altogether, 39 full-texts were found and 19 were used for the purpose of our discussion. It can be said that Meister standardized questionnaire isn't used by foreign authors very often. From this perspective, our discussion has a limited character. Already in 2001, WHO released "The world health report" to raise the awareness of the increased incidence of mental illnesses and their impact on human, social and economic sphere. The aim of our empirical study was to map the psychosocial

work-related burden of respondents, compare the psychosocial burden according to their gender, profession and residence, find out the level of job satisfaction also by the gender, profession and residence, verify the differences in the level of job satisfaction based on the gender, profession and residence, and prove the coincidence of psychosocial work-related burden with the job satisfaction.

In the intentions of the first goal, we can conclude that for respondents working in the industry, the most oppressive factors exceeding the critical values are the following four areas: time pressure, low satisfaction, problems and conflicts as well as the long-term tolerability. The most oppressive factors for participants performing the assisting professions were these three ones: low satisfaction, long-term tolerability, problems and conflicts. Findings of our study partially correspond to the results of Gurková and Macejková (2012), Židková (2002), Bubelová (2009), Urdziková and Kordošová (2016). In her study, Židková (2002) got similar results in case of the factor long-term tolerability. When analysing particular questions of the Meister questionnaire, authors Gurková and Macejková (2012) came to a conclusion that the critical value of median was above the limit in these four areas: long-term tolerability, time pressure, responsibility and exhaustion. Based on the sample of 206 participants performing the assisting professions, Urdziková and Kordošová (2016) found out that the most oppressive factors are problems, conflicts and the long-term tolerability. Factor time pressure exceeded the critical value in the studies of Bubelová (2009) and Židková (2002) but in our thesis, this assertion could be applied only on employees working in the industry. When assessing the individual factors, we did not detect any exceeding of critical values of the average results in the whole group, nor in relation to the gender differences. The same conclusion was reached by Obročniková et al. (2015). When comparing the assessment of Meister oppressive factors according to the profession, we found out that the low job stimulation was much more frequent among respondents working in the industry. Their rough score was also statistically higher. Hodačová et al. in a 2007 research, that focused on the psychosocial burden of 784 respondents from various professions, achieved the following results: in assessing the average median values, the most psychological burden for healthcare professionals was the factor overload; in case of teachers of elementary schools (men and women) and secondary schools (women only), the critical values of median was detected in the factor “stress reaction”. By analysing the average median values, we found out that the group of workers (men and women) is also at risk of the factor monotony. By comparing the average values of individual factors for men and women, authors also noticed statistically significant differences in case of two types of occupation – clerks (four factors – mundane work, conflicts and problems, monotony, long-term tolerability) and between factors overload and monotony. Higher values have always been seen in men. They also showed a significant difference in one factor in case of another profession – worker (high responsibility) and the factor of overload again to men’s detriment. The evaluation of the way of coping with the psychosocial work-related burden according to the rough score reached in the Meister questionnaire was favourable for 40.46% respondents with an appropriate way of handling the burden. An unfavourable situation was discovered in case of 59.54% participants performing the assisting professions who, paradoxically, dealt with the psychosocial burden rather inadequately.

In the next part, we mapped the job satisfaction of respondents. 54.2% of them assessed the job satisfaction positively, 36.34% negatively and 9.16% participants expressed the same level of job satisfaction and dissatisfaction. The job satisfaction was mapped also by Smith (2007). He came to a conclusion that the job satisfaction is higher when people have a profession with a social prestige, as can be seen on the results – 55.8% employees with the highest social status were highly satisfied with their job. Compared to that, the same level of satisfaction was expressed by only 33.6% employees with a lower occupational prestige. Munch-Hansen et al. (2009) surveyed in Denmark a relation between the work-related sickness and satisfaction with the work environment. This research was conducted on 13 437 employees from various 698 employers’ organizations during one year. Results refer to a correlation of above-mentioned variables – sickness was 30.8% lower when the employees were satisfied (11.7 days/year) compared to the respondents who experienced worse psychosocial working conditions (16.9 days/year). The subject of our interest was also to verify the relation between the psychosocial burden and job satisfaction. We noticed a negative correlation between the job satisfaction and particular factors or the overall score. Several authors came to the same or similar conclusions (Arikan et al., 2007; Rehman et al., 2012; AbuAlRub, Al-Zaru, 2008; Saleh, AbuRuz, 2013; Applebaum et al., 2010). However, the statistically significant correlation between two variables was not confirmed by the study of Salam et al. (2014).

Mental health is currently an increasingly discussed topic in all areas of the social and working life at national and transnational level. Sováriová Soósová et al., 2016, Slezáková, 2014 are accentuating, that mental health should not be marginal theme and psychological approaches to assist it should be incorporated to the clinical practice more effectively. Already in 2001, the world health report emphasized the need to increase and improve the employee

care, particularly in promoting their mental health. To protect and promote the mental health, all components of the society must work in the symbiosis – healthcare professionals (doctors, nurses, psychologists, physiotherapists) as well as non-medical professionals (employers, social workers, teachers, work therapists, etc.). According to LaMontagne (2014), one of the main options for supporting the mental health optimization at workplace is to protect the mental health by reducing risk factors, developing positive aspects of work as well as positive abilities of employees.

CONCLUSIONS

Based on the research findings, there is an urgent need to monitor the mental health of employees and if necessary, to provide them with the mental health care. To keep their mental health at workplace in a good state, a cooperation of all relevant parties (e.g. employees, employers, industry groups, trade unions, policy makers, health professionals, researchers, etc.) is essential. Equally important is the public education that can significantly influence the opinions of employees and the general public on the need to protect and promote the mental health.

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Reasoning and Moral Judgement in Higher Education Students: Reality and Challenge

Madalena CUNHA

*Instituto Politécnico de Viseu, CI&DETS, ESSV, Viseu
Portugal
madac@iol.pt*

João DURTE

Instituto Politécnico de Viseu, CI&DETS, ESSV, Viseu Portugal

Ernestina SILVA

Instituto Politécnico de Viseu, CI&DETS, ESSV, Viseu Portugal

Daniel SILVA

*Instituto Politécnico de Viseu, CI&DETS, ESSV, Viseu
Portugal*

João PINA

*Instituto Politécnico de Viseu, ESSV, Viseu
Portugal*

ABSTRACT

In higher education, the main purpose concerning morale is to stimulate the development of didactics based on principals that can enrich students' education, so that their actions may be a result of well-doing and supreme good critical appraisal, founded by standard ethical and moral patterns. The knowledge of students' perception and effective realities will allow the school to be promoted as a proactive scientifically sustained community and with an ethically directed learning. Objective of the study: To identify prevalent moral competences in higher education students.

A cross-sectional descriptive study was performed with 345 health students in Portugal's center region, 80% women, with a mean age of 20.82 years. The Workers and Doctors Moral Dilemma Questionnaire / Moral Judgment Test (MJT) by Lind (1998), Portuguese version of Bataglia (1998), adapted by Ribeiro & Menezes (2000), was applied.

The results indicate that the majority of the students (75%) presented adequate moral reasoning (50.1% average and 24.9% good). Nevertheless, 24.9% showed an inadequate moral reasoning. Age establishes an inverse relationship with moral reasoning, demonstrating that younger participants show better moral reasoning ($\beta = -0.12$; $p = 0.033$). Moral judgment was also adequate (75.5%) in most of the students, (50.1% average and 25.5% good). However, in 24.3% it was inadequate.

The importance of moral training is inferred from the study to provide reasoning and moral judgment skills. Therefore, health academic courses should include contents that will provide future professionals with updated knowledge/skills.

Keywords: higher education students; moral competences; moral judgment;

INTRODUCTION

Moral principles, also called morality, are defined as standards of conduct that distinguish right from wrong. And in this sense, judgment is seen as the skill that allows the individual to discover or claim an objective and intrinsic relationship between two objects or concepts. That is, to clarify its implicit meaning through the performance of a critical evaluation (Virtual Health Library - DeCS, 2015).

The word moral derives from the Latin *mos* and refers to "customs, norms and laws" (Tughendhat, 1999 & Weil, 2012 as quoted in Peter, 2013, p.485). Morality, unlike ethics, is eminently practical. It is focused on a concrete and real action, for a certain practical-moral know-how and for the use of moral norms coming from outside the

most diverse spheres (politics, religion, philosophies, social customs, etc.), which is considered valid for all the members of a certain social group. While ethics always implies an introspective theoretical reflection on any moral, a rational and critical revision of the validity of human conduct to moral is the acceptance of given rules. Morale has an imperative dimension, since it makes us fulfil a duty founded on a moral value imposed by an authority. Although different these concepts are linked, thus drawing an important relationship of an increasing circularity and complementarity among them (Carapeto & Fonseca, 2012, p.89; Pedro, 2013, p.487).

Associated with the moral perspective of citizenship, the idea is that society must guarantee equality of rights and obligations for all its members, as well as create the minimum conditions for all citizens to express their ideas without affecting and colliding with the freedom of thought of others, because "the freedom of one ends where the freedom of others begins" (Grajales, Buitrago & Rincón, 2008, p.206). However, in order for this to happen, there must be a commitment by government bodies and educational institutions in an education of excellence that can prepare individuals for the realities of the community where they are inserted in.

One of the fundamental moral principles of modern democracies is the resolution of dilemmas or behavioural problems through negotiation and discussion, rather than the use of power, force or violence. Therefore, the individual's ability to listen to his/her peers, understanding their arguments, and collectively finding a moral basis for a fairer solution is, thus, an extremely important requirement for the design and preservation of a more democratic and pluralist society (Lind, 1999, p.4 as quoted in Nata, 2011, p.93).

There is also a significant interest in political and social matters, moral education and moral issues within the academic world. Since events such as the threat of terrorism, global economic crises, growing crime among young people, teenage pregnancy and suicide, have rekindled the humanistic and scientific interest, by ethics and moral education, this has led some scholars to equate the hypothesis of the existence of a moral crisis in today's society (Bataglia, Morais & Lepre, 2010, p.27), which lacks the contributions of science and humanities for its resolution. Globalization has a considerable influence on citizens' beliefs, norms, values, attitudes and behaviours. Such a subject has gained increasing relevance in the scientific academies/educational institutions, since society expects them to play a structuring role in the education and training of young people who will become global citizens, capable of understanding the rules and norms of today's societies and to behave appropriately in various multicultural contexts (Banks, 2008; Stearns, 2009 as quoted in Cho & Chi, 2015, p.213).

In the case of university students, the main objective is to rescue, stimulate and improve contents and latent principles that may favour the education of a wise and simultaneously worthy professional, an active co-constructor of inclusive cultures that gathers an improved technical-scientific-cultural knowledge. Furthermore, following ethical principles, he/she should not be seen as a mere depository of humanistic aspirations that, despite guiding the rights of human beings, only stimulates the development of automaticity actions, which are not sustained by ethics and values. Such skills are an integral part of himself/herself that must justify and support his/her actions.

In this context, the study aimed to evaluate the moral skills prevalent in students of higher education.

THEORETICAL FRAMEWORK

Kohlberg conceptualizes moral competence as "the ability to make decisions and make moral judgments (based on internal principles) and to act according to such judgments." For the development of this competence, there is a universal and invariant sequence of six stages.

For Lind (2005), these moral skills and competences can and should be constructed throughout life, that is to say, childhood, youth and adulthood (Lind, 2005 as quoted in Melo, Souza & Barbosa, 2016, p.44).

Kohlberg's theory of moral development (1971) argues that moral judgments and norms should be understood as universal constructions of human agents that regulate their social interactions rather than passive reflections of any external fact or internal emotions. The developmental levels of this socio-moral perspective allow, according to Kohlberg, a general organization of moral judgment and serve to inform and link other more specific moral concepts, such as the nature of morally right or good, moral reciprocity, rules, rights, obligations or duties, equality, consequences of well-being and moral values such as obedience to authority, life preservation, maintenance of contracts, and affective relationships (Colby & Kohlberg, 1984, as quoted in Bataglia, Morais & Lepre, 2010, p.29-31).

Kohlberg (1964) organized a series of six stages and three levels (pre-conventional, conventional, and post conventional), two stages at each level, of the development and articulation of moral judgment, which goes from childhood to adulthood. He based his work on the classification of types of moral reasoning presented by

individuals when they were confronted with hypothetical dilemmas. Its description goes from pre-moralism, through conformism, and encompasses the morality of individual principles. At the first level, the pre-conventional one, there is no internalization of moral principles. The act is judged by its consequences and not by its intentions, since individuals did not come to understand and respect shared norms and expectations (egocentric perspective and dominated by self-interest). This is a characteristic of most children under the age of 9, of some teenagers and of many teenage and adult offenders (Kohlberg, 1964 as quoted in Bataglia, Morais & Lepre, 2010, p.29-31). At the second level, called conventional, internalization is already present. The individual believes in the value and recognition of what he/she deems par excellence. Morality consists of social rules, roles, and norms. This level is the most common among most adolescents and adults in modern society (Colby & Kohlberg, 1984 as quoted in Bataglia, Morais & Lepre, 2010, p.29-31). At the third level, known as post conventional, there is the questioning of established laws and the recognition that they may be unfair and therefore must be changed. People understand and accept the rules of society, but this acceptance is based on the formulation of general moral principles that uphold those rules, following principles of conscience rather than the convention of the previous ones. This level is reached by a minority of adults (around 5%), usually after the age of 20 (Kohlberg, 1964, as quoted in Bataglia, Morais & Lepre, 2010, p.29-31). The stages of moral judgment, proposed by Kohlberg (1964), of which two are comprised within each of the levels described above, are described by Bataglia, Morais, & Lepre (2010, p.29-31) and Nata (2011 p. 110-112) as follows: First stage - punitive orientation and obedience to authority: characterized by the morality of the act defined in terms of physical consequences for the individual. If the action is indictable, it is morally wrong; if it is not reprovved, it is correct. Second stage - naive hedonic and instrumental orientation: morally correct action is defined in terms of pleasure or satisfaction of the person's needs. This stage is characterized by selfishness, relative morality and moral act is an instrument of personal satisfaction. Third stage - orientation based on interpersonal relationships or "good guy" type morality: morally correct behavior is one that leads to the approval of others. The concept of equality appears at this stage. Fourth stage - authority morality and conservation of social order: there is respect for authority, fixed rules and preservation of social order. Justice has to do with the established social order (by the individual and the system), and it is not a question of personal moral choice. Fifth stage - morality of social contact, individual rights and democratically accepted law: the individual admits that moral laws or customs may be unfair and must be changed by legal channels and democratic contracts. This stage refers to the recognition of morality underlying democratic governance. Sixth stage - orientation of universal ethical principles: the individual recognizes the universal moral principles of individual consciousness and acts accordingly. These moral obligations involve: the principle of justice; role-taking principle, that is, the ability to put oneself in the other's shoes, and the principle of respect for personality (Bataglia, Morais & Lepre, 2010, p.29-31); (Nata, 2011, p. 110-112).

Lawrence Kohlberg guided his research towards the study of moral judgment and stages of moral development, while Georg Lind pursued studies towards competence. In order to measure these constructs, Kohlberg proposed a form of evaluation and measurement: The Moral Judgment Interview - MJi (Espíndola & Lyra, 2005; Bataglia, 2010). In 1977, George Lind constructed the Moral Judgment Test (MJT) in order to evaluate the competence of moral judgment. This construct was formulated by Lawrence Kohlberg in 1964 as the "ability to make decisions and make moral judgments (based on internal principles) and to act according to such judgments." (Kohlberg, 1964 citing Lind, 1999, p. 1 quoted in Bataglia, Morais & Lepre, 2010, p.29).

The MJT assesses the ability of the subject to apply the structure of moral judgment in adverse situations therefore using moral dilemmas. However, it is requested to evaluate arguments with different moral orientations, reflecting opinions for and against the decision, that is, the individual should consider arguments for and against his/her own opinion (Bataglia, Morais & Lepre, 2010, p.29).

When we present a dilemma to the subject and he/she argues or acknowledges arguments in favour of his/her own opinion, the moral attitude based on his/her beliefs, values and concepts is evident. Instead of simply measuring the moral attitude of the subject, the MJT proposes a difficult moral task, which is the recognition of the quality of arguments contrary to the opinion of the subject. This presupposes another ability that naturally involves the cognitive structure, but more than that, it requires a non-dogmatic attitude towards his/her own attitude. It is this ability (competence) that the MJT proposes to measure (evaluation of counter-arguments). On the other hand, the MJT is based on the theory of the double aspect of moral development, that is, there are cognitive and affective aspects involved in moral competence. (Bataglia, Morais & Lepre, 2010, p.30).

Recent studies have revealed that, contrary to scientific rationalism, moral decision depends more on subjective emotional evaluation, conscious or unconscious, than on logical-deductive reasoning. It is currently consensual

that both emotion and reasoning are involved in moral judgment, albeit dominating the automatic emotional processes. These inferences were made from experimental studies using decision-making tasks in the face of moral dilemmas, in which the psychological processes underlying moral judgment were explored. Given a certain dilemma our answer may be considered utilitarian or non-utilitarian (Koenigs, Kruepke, Zeier & Newman, 2012 as quoted in Carvalhinho, 2015, p.10). Personal moral dilemma entails direct and intimate offence to someone, and physical harm. For instance, pushing someone off a bridge to save five people. Underlying the resolution of personal moral dilemmas is, therefore, a high cognitive and emotional conflict on the part of those who decide, since the choice to sacrifice one person for the good of others is considered a "utilitarian" response, as it reflects a greater concern with a "mathematical" result than with emotional aversion by the means used: the means (emotionally reprehensible) justify the ends (mathematical gain). On the other hand, a "non-utilitarian" response is a more emotional response, that is, a response that involves an emotional reaction directed at someone who will be at a disadvantage in this dilemma, choosing not to sacrifice it for the good of others (Koenigs, Kruepke, Zeier & Newman, 2012 as quoted in Carvalhinho, 2015, p.10). The evaluation of the moral decision in nonclinical populations has suggested that it is contaminated by emotional processes provoking a high conflict, especially in certain types of dilemmas, which ends up conditioning the response (Carvalhinho, 2015, p.10).

To educate for the development of moral competences that privilege ethical-moral principles and that aim at the common good for the community in detriment of personal interests, it is absolutely necessary to set conditions that decisively contribute to the emergence of individuals with a way of being/being imbued with an appropriate ethical-moral aspect and revealing the primacy of human dignity. Hence, the challenge for the present study emerges.

THE STUDY

The descriptive study with an analytic-correlational approach sought to answer the following research question: What moral competences do the students of higher education demonstrate? And its main objective was to identify the moral competencies prevalent in students of higher education.

Sample

The non-probabilistic sample, obtained by convenience, was composed of 345 students from the health field of the Polytechnic Institute of Viseu, Portugal, of which 277 were female and 68 were male. The mean age of the students was 20.82 years (\pm 21 years), ranging between the minimum age of 17 and the maximum of 46.

Data collection instruments

The research protocol included, as instruments of measurement, the Workers and Doctors Moral Dilemma Questionnaire, (Moral Judgment Test - MJT, Lind, 1998), Portuguese version of Bataglia (1998), adapted by Ribeiro e Menezes (2000) quoted by Nata (2011).

The MJT aims to assess moral competence and to act in accordance with moral principles. The MJT results in a standardized continuum ranging from 1 (the lowest result) to 100 (the highest result), which particularly expresses the coherence of the respondents in valuing identically the arguments against and the arguments in favour of the position they stand by, which are equal with regard to moral complexity. This questionnaire presents the respondents with two short stories (workers' and doctors' dilemmas), in relation to which the moral arguments against and in favour of the protagonists' actions are presented, arguments that have different levels of moral complexity. First, respondents must decide whether they are against or in favour of these actions, and then give their degree of agreement with the arguments against and in favour of them. Based on the subjects' answers, an index of moral competence is calculated (Nata, 2011).

Regardless of whether the respondent is against or in favour of the skills of the workers or the doctor, the important thing is to equally value the argument in favour and counter argument in each stage of development (Nata, 2011). According to the same author, the smaller the difference between the argument against and the argument in favour of a particular stage, the greater the result of the respondent. In short, the differentiation between the stages is used only to evaluate the consistency between the pairs of items, meaning that the absolute value of the answers does not matter much, since the respondent will have the same score as long as he answers the same value for the item against and the item in favour. That is, a person who answers +4 in both items (against and in favour) will have the same result as the person who answered +1 in both items, which led Nata, in 2011, to assign different weights to the different stages of complexity, while emphasizing the congruence of the answers and the absolute value of

the answers. Thus, a person who answers +4 on both items related to stage 6 will have a higher result than a person who responds +1 to the same items, which does not happen for the same case if this difference occurs in items in stage 1. That is, as the person values more the arguments against and in favour of the more developed stages, the greater the final result will be (Nata, 2011).

When applying the MJT, respondents must first decide whether they are against or in favour of these actions, and then assign their degree of agreement to the arguments against and in favour of them. Based on participants' answers, a Morale Competency Index - INDEX was calculated.

Since the dimensions found differ in number of items, which does not allow the comparison between them, it was chosen to proceed with their statistical transformation, in order to have the same common denominator. Thus, the formula $((\text{gross score} - \text{possible minimum value}) / \text{amplitude}) \times 100$ was used for this purpose. Hence, the two dimensions obtain a score that ranges from 0 to 100%, and its reading must be done in percentage values.

Procedures

The study complied with the standards of good conduct while carrying out the research, with the aim of safeguarding participants' rights and freedom, as well as respect for ethical principles. For this purpose, it obtained a favorable opinion from the Ethics Committee of the School of Health of the IPV and authorization to collect data. The application of the Questionnaire was authorized and the participants signed the Informed Consent form. The statistical treatment was processed through the SPSS program (Statistical Package for the Social Sciences) version 21.0 (2013) for Windows.

FINDINGS

Attending training in Citizenship, Morale, Bioethics/Ethics, Law and Values, prevails in the majority of the sample. There is a predominance of students (67.0%), attending training courses, especially those who partook in 40 or more hours of training. The most relevant contexts of receiving training were the undergraduate courses (82.6%), basic education (42.0%) and secondary level education (32.9%) and family (26.0%) ($X^2 = 4,742$; $p=0.029$). The percentage values of students who had attended training in the aforementioned areas were: 96.1% in values, 96.1% in law; 84.8% in citizenship; 59.3% in ethics; and 16.9% in bioethics/ethics. The average number of training hours was 31.44 hours (± 25.56 hours), ranging from a minimum of 1 hour to a maximum of 150 hours.

Moral Competence

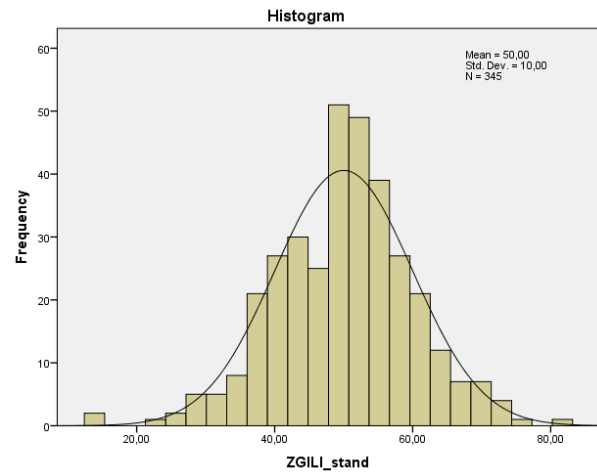
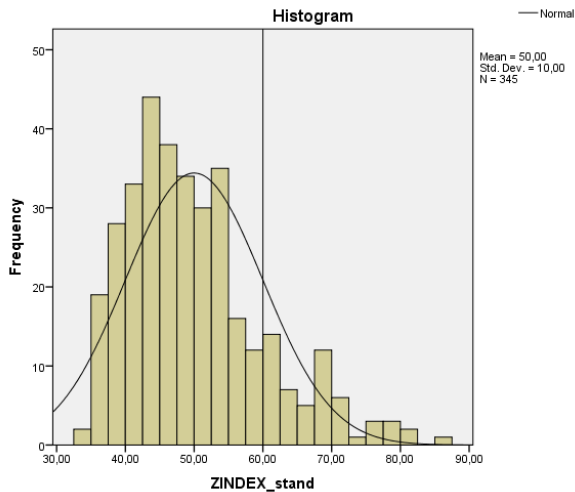
The statistics regarding the actual scores of the moral competences allow to conclude that, for the Moral Reasoning - C-INDEX, a minimum of 0.00 and a maximum of 45.74 was registered, being the average of 13.21 (± 8.778). In relation to the Moral Judgment - GILI (MJT), a minimum of -68.00 and a maximum of 45.00 was obtained, with a mean of -6.76 (± 16.955). (See Table 1).

The statistics on the percentages of moral competence indicate that, for Moral Reasoning - C-INDEX, a minimum of 34.95 and a maximum of 87.06 was obtained, with a mean of 50.00 (± 10.000). Regarding the Moral Judgment - GILI (MJT), a minimum of 13.89 and a maximum of 80.53 was obtained, with a mean of 50.00 (± 10.000). (See Table 1).

Table 1: Statistics on reasoning and moral judgment

	N	Min	Max	Mean	SD	Sk/error	Ku/error
Real Scores Concerning Moral Reasoning and Judgment							
Moral Reasoning - C-INDEX	345	0,00	45,74	13,21	8,778	7,37	2,73
Moral Judgment - GILI (MJT)	345	-68,00	45,00	-6,76	16,955	-1,38	2,49
Percentage values regarding moral reasoning and judgment							
Moral Reasoning - C-INDEX	345	34,95	87,06	50,00	10,000	7,37	2,73
Moral Judgment - GILI (MJT)	345	13,89	80,53	50,00	10,000	-1,38	2,49

The graphs concerning the frequency distribution of the final scores resulting from the application of both calculation methods.



Graphs 1 and 2 - Histograms of frequency distribution of the scores regarding Reasoning - C INDEX and Moral Judgment - GILI (MJT)

Levels of Moral Reasoning - C-INDEX according to socio-demographic and academic variables

It is verified that 75.0% of the students show adequate moral reasoning, being that in 50.1% they show an average moral reasoning and in 24.9% there is a good moral reasoning. However, 24.9% of students demonstrate inadequate moral reasoning. Female students showed higher percentages at all levels of moral reasoning, especially good moral reasoning (83.7%), as opposed to the 80.2% of students with inadequate moral reasoning (see Table 2).

The youngest students showed more positive moral reasoning (74.2%), 37.0% with an average moral reasoning and 37.2% with a good moral reasoning. Students aged 20-21 demonstrate mostly good moral reasoning (36.0%), contrary to the majority of older students whose score revealed inadequate moral reasoning (33.7%). To what concerns moral reasoning according to the year of the course attended, the results indicate that in the inadequate moral reasoning, the 2nd year students (33.7%) stand out, followed by those who attend the 1st year (25.6%). At the level of average moral reasoning, the highest percentage corresponds to the students of the 2nd year (31.2%), as well as those who are in the 4th year (29.5%). Moral reasoning is found to be good for students in the 2nd and 4th year, with the same percentage value (29.1%, respectively) (see Table 2).

Apparently, it is the students who refer to have attended training in the scope of Citizenship, Moral, Bioethics/ethics, Law and Values that reveal, for the most part, average moral reasoning (70.5%), followed by those who have good moral reasoning (67.4%), and 59.3% showing inadequate moral reasoning. Of the 136 students who reported having attended training, and about an inadequate moral reasoning, it was found that students with more hours of training (40.2%) prevailed, whereas in the average moral reasoning students with 20-38 hours of training (40.3%) predominated, and in good moral reasoning, the predominance of students with fewer hours of training (48.6%), with statistically significant differences ($X^2=11,987$; $p=0.017$) (see Table 2).

Table 2: Moral Reasoning - C-INDEX according to socio-demographic and academic variables

Moral Reasoning C-INDEX	Inadequate moral reasoning		Average moral reasoning		Good moral reasoning		Total		Residuals			X ²	p
Variables	n (86)	% (24.9)	n (173)	% (50.1)	n (86)	% (24.9)	n (345)	% (100.0)	1	2	3		
Gender													
Male	17	19,8	37	21,4	14	16,3	68	19,7	,0	,8	-,9	0,947	0,623
Female	69	80,2	136	78,6	72	83,7	277	80,3	,0	-,8	,9		
Age													
<= 19 years old	31	36,0	64	37,0	32	37,2	127	36,8	-,2	,1	,1	1,155	0,885
20-21 years old	26	30,2	57	32,9	31	36,0	114	33,0	-,6	,0	,7		
>= 22 years old	29	33,7	52	30,1	23	26,7	104	30,1	,8	,0	-,8		
Course year													
1 st year	22	25,6	42	24,3	21	24,4	85	24,6	,2	-,2	-,1	1,513	0,959
2 nd year	29	33,7	54	31,2	25	29,1	108	31,3	,6	,0	-,5		
3 rd year	15	17,4	26	15,0	15	17,4	56	16,2	,4	-,6	,4		
4 th year	40	23,3	51	29,5	25	29,1	96	27,8	-1,1	,7	,3		
Training													
No	35	40,7	51	29,5	28	32,6	114	33,0	1,7	-1,4	-,1	3,280	0,194
Yes	51	59,3	122	70,5	58	67,4	231	67,0	-1,7	1,4	,1		
N. of hours of training	n (39)	% (28.7)	n (62)	% (45.6)	n (35)	% (25.7)	n (136)	% (100.0)	-	-	-		
<= 19 hours	12	30,8	15	24,2	17	48,6	44	32,4	-,3	-1,9	2,4	11,987	0,017
20-38 hours	9	23,1	25	40,3	4	11,4	38	27,9	-,8	2,9	-2,5		
>= 40 hours	18	46,2	22	35,5	14	40,0	54	39,7	1,0	-,9	,0		

Levels of Moral Judgment - GILI (MJT) according to sociodemographic and academic variables

It

is observed that 75.5% of students have adequate moral judgment, being 50.1% average and 25.5% good. However, 24.3% of students show an inadequate moral judgment.

It is found that the female students have the highest percentages in the various levels of moral judgment, especially those who display an inadequate moral judgment (81.0%), followed by those with good moral judgment (80.7%).

The highest percentage in terms of inadequate moral judgment relates to students in the age group of 20-21 years (36.9%), being very close to the youngest students with 35.7%. As for average moral judgment, the most significant value is that of the youngest students (36.4%), followed by the older students (32.9%). Regarding good moral judgment, the youngest students (38.6%) have a higher percentage, followed by 34.1% of the students aged 20-21 years (see Table 3).

In relation to moral judgment according to the year of the course, it was found that the students of the 4th year (33.3%) and the 2nd year (32.1%) showed the most inadequate moral judgment. Students in the 1st year (28.3%) and those in the 2nd year (28.9%) excel in the group of students with adequate moral judgment. In terms of good moral judgment, the highest percentage values go to students in the 2nd year (35.2%) and those in the 4th year (26.1%) (See Table 3).

With regard to moral judgment as a result of training in Citizenship, Morality, Bioethics/ethics, Law and Values, the most significant value belongs to the inadequate moral judgment of the students who confirm that they attended the aforementioned training. In terms of representativeness, students with good moral judgment (66.9%) come next, and students with average moral judgment (66.5%) follow very closely. Of the 136 students who attended the aforementioned training, and with respect to inadequate moral judgment, students with fewer hours of training (50.0%) prevail, while the majority of students with more hours of training (52.5%) show good moral judgment (cf. Table 3).

Table 3: Moral Judgment - GILI (MJT) according to sociodemographic and academic variables

Moral Judgment – GILI (MJT)	Inadequate moral judgment		Average moral judgment		Good moral judgment		Total		Residuals			X ²	p
Variables	n (84)	% (24.3)	n (173)	% (50.1)	n (88)	% (25.5)	n (345)	% (100.0)	1	2	3		
Gender													
Male	16	19,0	35	20,2	17	19,3	68	19,7	-,2	,2	-,1	0,062	0,970
Female	68	81,0	138	79,8	71	80,7	277	80,3	,2	-,2	,1		
Age													
<= 19 years old	30	35,7	63	36,4	34	38,6	127	36,8	-,2	-,2	,4	1,731	0,785
20-21 years old	21	36,9	53	30,6	30	34,1	114	33,0	,9	-1,0	,2		
>= 22 years old	23	27,4	57	32,9	24	27,3	104	30,1	-,6	1,1	-,7		
Course year													
1 st year	14	16,7	49	28,3	22	25,0	85	24,6	-1,9	1,6	,1	5,638	0,465
2 nd year	27	32,1	50	28,9	31	35,2	108	31,3	,2	-1,0	,9		
3 rd year	15	17,9	29	16,8	12	13,6	56	16,2	,5	,3	-,8		
4 th year	28	33,3	45	26,0	23	26,1	96	27,8	1,3	-,8	-,4		
Training													
No	26	31,0	58	33,5	30	34,1	114	33,0	-,5	,2	,2	0,228	0,892
Yes	28	69,0	115	66,5	58	65,9	321	67,0	,5	-,2	-,2		
N. of hours of training	n (36)	% (26.5)	n (60)	% (44.1)	n (40)	% (29.4)	n (136)	% (100.0)					
<= 19 hours	18	50,0	17	28,3	9	22,5	44	32,4	2,6	-,9	-1,6	9,110	0,058
20-38 hours	9	25,0	19	31,7	10	25,0	38	27,9	-,5	,9	-,5		
>= 40 hours	9	25,0	24	40,0	21	52,5	54	39,7	-2,1	,1	2,0		

Moral Reasoning - C-INDEX and Moral Judgment - GILI (MJT) versus sociodemographic and academic variables in higher education students

The results related to gender show that male students have the highest scores in the Moral Judgment - GILI (MJT), (M=50.54), while the female students score more in Moral Reasoning - C-INDEX, (M=50.25). In other words, they present a better level of moral reasoning. However, when comparing the groups, it is verified that there are no statistical differences, suggesting that gender does not interfere in the participants' moral competence (see Table 4).

Table 4: T-test for difference of means of moral competences according to gender

Gender Moral Competences	Male		Female		t	p
	Mean	Sd	Mean	Sd		
Moral Reasoning - C INDEX	48,97	8,528	50,25	10,327	-0,941	0,347
Moral Judgment - GILI (MJT)	50,54	9,820	49,86	10,056	0,503	0,616

Age-related results show that younger students (<= 19 years) and older students (>=22 years) show higher values of moral judgment (GILI-MJT), while students in the age group of 20-21 years scored more in the Moral Reasoning - C-INDEX, revealing a better moral reasoning. Still, there was no statistical relevance, and it was therefore inferred that age groups do not interfere in students' moral competence (See Table 5).

Table 5: ANOVA Test between Age and the C-INDEX - Moral Reasoning and Moral Judgment - GILI (MJT)

Age	<= 19 years old		20-21 years old		>= 22 years old		F	p
	Mean	Sd	Mean	Sd	Mean	Sd		
Moral Reasoning - C INDEX	49,92	9,344	50,67	9,955	49,34	10,838	0,489	0,614
Moral Judgment - GILI (MJT)	50,37	10,420	49,31	10,634	50,29	8,735	0,396	0,673

The results referring to the averages of training participation in Citizenship, Moral, Bioethics/Ethics, Law and Values and moral competence, indicate that students with better moral judgment (GILI - MJT) are those who did

not participate in the aforementioned training, while those who have already participated in this type of training present greater moral reasoning (C-INDEX). Nevertheless, there are no statistically significant differences between groups. (See Table 6).

Table 6: T-test for mean differences of the Reasoning - C-INDEX and Moral Judgment - GILI (MJT) due to training on Citizenship, Morale, Bioethics/Ethics, Law and Values

Training	Training No		Training Yes		t	p
	Mean	Sd	Mean	Sd		
Moral Reasoning - C INDEX	49,01	9,457	50,12	9,455	1,290	0,198
Moral Judgment - GILI (MJT)	50,48	10,241	49,93	10,277	0,163	0,870

The analysis of the results regarding the number of hours of training in Citizenship, Morale, Bioethics/Ethics, Law and Values indicates that students with a lower number of training hours (≤ 19 hours) show a higher mean value in Moral Reasoning - C -INDEX ($M=53.64$), followed by those with more training time (20-38 hours) who demonstrate more moral reasoning. In relation to the Moral Judgment GILI - (MJT), the highest value relates to the group of students with 23-38 hours of training in the area, seconded by those who have more hours of training. This means that these are the participants who demonstrate more capacity of moral judgment in the face of the dilemmas presented. There is no statistical relevance when comparing the study groups (see Table 7).

Table 7: ANOVA test between Moral Reasoning - C-INDEX and Moral Judgment - GILI (MJT) and the number of hours of training

N. of hours of training	≤ 19 hours		20-38 hours		≥ 40 hours		F	p
	Mean	Sd	Mean	Sd	Mean	Sd		
Moral Reasoning - C - INDEX	53,64	12,950	47,80	6,753	49,96	12,362	2,836	0,062
Moral Judgment - GILI (MJT)	47,62	12,469	50,82	9,748	52,01	9,058	2,212	0,113

Inferential Analysis: Moral Reasoning - C-INDEX and Moral Judgment - GILI (MJT)

Pearson's bivariate correlation between moral reasoning (C-INDEX) and moral judgment (GILI-MJT) is weak and inversely proportional ($r=-0.265$; $p=0.000$), and reflects the differences between the two calculation methods, showing that when one increases the other decreases.

On the other hand, **Model 1**, a translator of multivariate multiple regression, included the reasoning and the moral judgment as latent variables, and age, the practices of active citizenship, the ethical approach, gender and the attendance of training as manifested variables. These last two variables were transformed into mute variables (dummy variable).

The trajectories, critical ratios and beta coefficients, show that only age presents statistical significance ($p=0.033$) for moral reasoning and active citizenship practices a minor significance ($p=0.057$) for moral judgment. (See Table 8).

Table 8: Trajectories, critical ratios and beta coefficients of multivariate multiple regression

Trajectories			Estimates	Standardized Error	Critical Ratio	p	β
Moral Reasoning	<---	Gender	-,682	1,379	-,495	,621	-,027
Moral Reasoning	<---	Training Attendance	1,969	1,177	1,673	,094	,093
Moral Reasoning	<---	Citizenship Practices	-,057	,413	-,139	,890	-,007
Moral Reasoning	<---	Age	-,378	,178	-2,127	,033	-,118
Moral Reasoning	<---	Ethical Approach	,040	,061	,666	,506	,036
Moral Reasoning	<---	Age	,130	,179	,730	,466	,041
Moral Reasoning	<---	Gender	,211	1,385	,153	,879	,008
Moral Reasoning	<---	Training Attendance	-,204	1,182	-,173	,863	-,010
Moral Reasoning	<---	Citizenship Practices	-,790	,414	-1,906	,057	-,103
Moral Reasoning	<---	Ethical Approach	,027	,061	,440	,660	,024

Graphical outputs of the trajectories between the manifest variables and the latent variables are shown in figure 1. The manifest variables explain only 2% of the variability of moral reasoning and 1% of moral judgment. It is also inferred that age presents a predictive weight of $\beta=-0.12$ for moral reasoning and citizenship practices $\beta=-0.10$ for moral judgment, both varying inversely. That is, the younger participants have the best moral reasoning. On the other hand, rather than anticipated, the participants with the worst practices of citizenship are those who manifest the most adequate moral judgment.

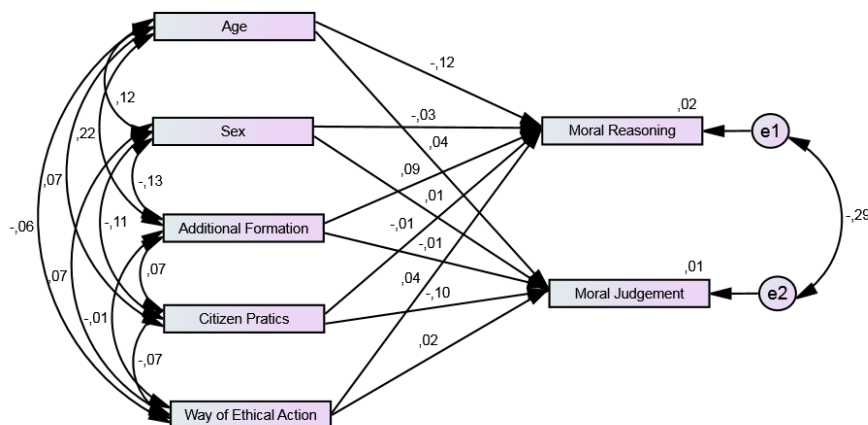


Figure 1: Graphical output of the relationship between the manifest and latent variables

The refinement of the model considering only the variables that presented statistical significance was translated into the final model in which age presents a weak predictive weight ($\beta=-0.09$), and not significant ($p=0.070$) of the moral reasoning. The practices of active citizenship revealed low predictive weight ($\beta=-0.10$), but significant ($p=0.042$) in relation to moral judgment, becoming its predictor. (See Table 9).

According to the beta coefficients, it was found that the Moral Reasoning - C-INDEX has an inverse relationship with age, indicating that younger participants show a better moral reasoning ($\beta=-0.12$; $p=0.033$). After a refined model with a more significant variable (age), it was no longer seen as a predictor due to the weak predictive weight ($\beta=-0.092$) associated and a statistically non-significant value ($p=0.070$). In the case of Moral Judgment - GILI (MJT), none of the overt variables revealed a predictive character (p values are not statistically significant).

Table 9: Trajectories, critical ratios and beta coefficients of the refined model

Trajectories	Estimates	Standardized Error	Critical Ratio	p	β
Moral Judgment <--- Citizen Practices	-,799	,393	-2,031	,042	-,103
Moral Reasoning <--- Age	-,298	,164	-1,811	,070	-,092

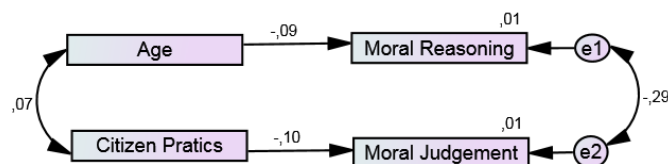


Figure 2: Graphical output of the relationship between age and moral reasoning and between the practice of citizenship and moral judgment

DISCUSSION

The Moral Reasoning - C-INDEX and Moral Judgment - GILI (MJT), established a weak but highly significant correlation (Pearson's bivariate correlation $r=-0.265$; $p=0.000$), which reflects the differences between the two calculation methods (when one increases the other decreases). In this respect, Nata (2011, p.238) reports that after performing a Spearman bivariate correlation between the same variables Moral Reasoning - C-INDEX and Moral Judgment - GILI (MJT), it was possible to determine the existence of a very high and significant correlation ($\rho=0.657$; $p<0.001$), also reflecting the differences between the two calculation methods, that is, when one increases the other also increases. In other words, the results of this study do not corroborate the results of Nata (2011) given that in the present research, individuals with better Moral Reasoning - C-INDEX present worse Moral Judgment - GILI (MJT), or vice versa. Whereas in the study by Nata (2011), individuals with better moral reasoning - C-INDEX, also showed a better moral judgment - GILI (MJT), or vice versa. In a study by Siqueira (2005), which aimed to evaluate moral judgment among children and young adults in Brazil, aged between 6 and 21, when faced with moral dilemmas, the author found that younger children tended to tell the truth more often than older children and young adults, even though there was no significant relationship between the age group and the likelihood of a student telling the truth. This fact supports our results when we verify that age, as a latent variable, is not a predictor of Moral Judgment - GILI (MJT), ($\beta=0.041$; $p=0.466$). Through the beta coefficient, it was found that the Moral Reasoning - C-INDEX - establishes an inverse relationship with age, indicating that younger participants show better moral reasoning ($\beta=-0.12$; $p=0.033$).

The implications of our findings for teaching, it is suggested to resort to dilemma discussions that encompass the methodology of Kohlberg's dilemmas, whose inquiries have been widely disseminated, serving as a training and research tool for the construction of instruments of measurement of moral judgment. In order to do so, students may be asked to respond to hypothetical moral dilemmas, leading them to make a judgment about what should be done in the presented situation, legitimizing their answers. The use of Kohlberg's dilemmas at increasingly precocious ages provides essential guidelines that will decisively contribute to a better/more adjusted knowledge of the "here" and "now" of today's society, triggering the most conscious, thoughtful and reflective of being. This activity may also help students reflect on their moral competence, an indispensable factor in making students more aware of what is going on, guided by ethics, morals and values.

As implications for the practice of future health professionals, it should be emphasized that health education sessions constitute one of the essential pillars for the development of health literacy that favours the maintenance and promotion of a good overall health status of the individual and, in this sense, it becomes urgent that this transmission of knowledge be anchored in an effective education of values. It is up to these professionals to advise and model the decision making, generating practice in the concern for the preservation of the values, beliefs and culture of the person who cares, as a principle of their conduct. Hence, it is the school's concern to provide the "tools" that stimulate the proactivity and the assertive moral decision making on the part of the individuals, enabling them, according to the Kantian presupposition, so that actions are practiced, not by a sensation, but by duty (Barata, 2008, p.7). For the philosopher, an action practiced by duty has its moral value, not in the decision that it is intended to achieve, but in the principle, that determines it. Thus, action must be

subordinated to absolute respect for the form of law that Kant qualifies as universal law of actions in general, called the categorical imperative. The morality of action is therefore reintegrated into a morality of intention and only through this mean can it be ascertained whether a will was good and whether it was actually ethically acted upon.

CONCLUSIONS

Ethics and morality are important ontological compasses of human action, because they support the personal fulfilment of each citizen. The question of moral and ethical action implies a reflection on the practices of active citizenship, insofar as it leads to the potential and natural propensity of men for civil, social, political and doctrinal life in community. Thus, to study this problem, an observational study was developed in a sample of 345 Portuguese students from the health field, mostly female, with a mean age of 20.82 years. The objective of this research was to identify the moral competencies prevalent in higher education students, and 75.0% and 75.5% of the students showed adequate reasoning and moral judgment, respectively.

In a society of constant transformation in which one lives a permanent demand of *Having*, the school is a pedagogical organization whose role seems categorical in the life and in the learning of its students. Therefore, its main purpose is to develop moral competences, preparing the students for the challenges of *Being* that the contemporary world currently poses to them.

In view of the results obtained, it is considered important that higher education schools promote further training in order to serve as an identification element, which should help students to engage in more sustained ethical and moral practices so that these are "fair" and responsible, and make sound decisions for the benefit of the community. Therefore, a cutting-edge education emerges as a frontier, with community experiences, presentation of cases and dilemma discussions, enabling students to develop their cognitive, affective and moral maturity. In this way, students will be prepared for the challenges of contemporary societies, which include, among others, promoting a culture of active citizenship, inclusion and personal/social well-being in the individual and collective dimensions.

There is a lack of knowledge regarding studies on reasoning and moral judgment, as well as research about them in relation to students of higher education. In this sense, it is necessary to develop new studies in the field with the purpose of ascertaining the existence or non-existence of elements and/or factors that may contribute to the existence of moral competences that favour a way of being, more supported by ethical-moral principles and invigorating the common good of the surrounding community. It would also be pertinent to determine the existence of social determinants that promote greater or lesser ease in the development of adequate reasoning and moral judgment.

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Reconciling the Terrible Twins: Investigating the Relationship of Literacy and Numeracy in Primary Classrooms

Maura SELLARS

School of Education

University of Newcastle

New South Wales

Australia

Maura.Sellars@newcastle.edu.au

ABSTRACT

Literacy and numeracy are frequently found bound together in educational policies, statements, and manifestos. They are certainly perceived as the most important of subjects in primary school classrooms, claiming the lion's share of the teaching and learning time and being the focus of much testing, standardized and otherwise. While historically, many numeracy practices in ancient times led literacy practices, the twentieth century focus was heavily biased in favour of developing literacy practices with a somewhat secondary focus on numeracy. It appears that currently, the rapid and continual onslaught of information has created a situation in which numeracy has been hailed as the literacy for the 21st century, with an emphasis on critical numeracy skills for social justice, democracy, and global citizenship. This paper suggests a perspective which places considerable value on investigating the ways in which these two currently separate symbol systems can be explored as joint study in primary classrooms in ways in which critical thinking as cognitive capacities can be enhanced. This exploration takes as established the literacy components of numeracy competencies and instead promotes the numeracy components of literacy development using a frame work of analysing text at micro, meso, and macro levels. This framework considers the interpolated aspects of structure, sequence and sense that dominate English literacy practices and further extrapolate these and identify the critical mathematical concepts upon which these are based. Strategies for developing critical thinking skills which include authentically engaging with both symbol systems simultaneously are suggested.

INTRODUCTION

In the twentieth century, an educated citizen was one who was able to read and write. Whilst the twenty first century still requires these language skills, a new age has brought with it a demand for other literacies to be explored and mastered. The single most important of these is the capacity to use mathematical knowledge and skills in the context of everyday living, problem solving and citizenship. These competencies are known as numeracy skills or the capacities for applying quantitative literacy skills. Whilst this has been recognized in many policies, curriculum documents and documents that identify essential skills for 21st century education, the overwhelming focus has remained on the development of language skills and its integration in to the other areas of learning in primary schooling. This perspective not only underlines the importance of numeracy competencies for contemporary living, it often creates classroom contexts where students may be expected to have skills and capacities in one literacy but be incompetent in the other. The notion of having a 'maths brain' (Boaler, 2016) or a language preference is not only totally unsubstantiated, it denies the students and their teachers opportunities to investigate the interrelationships of these two basic capacities, to identify the reliance of one upon the other and to create a mindset which explores critical thinking (Cotterell, 2005; R. Paul & Elder, 2008) with regard to both these competencies. This writing explores the relationship of numeracy skills to language literacy as complimentary to the contribution of language to mathematical conceptual understanding (Sellars, 2017).

FINDING THE NUMERACY IN LITERACY

From the very beginning of learning to read and write in classroom contexts, students are encouraged to use their understanding of position to support written language activities such as reading and writing. The placement of letters in words, which extends to using plurals, verb declensions, prefixes and suffixes are very simple examples of using a sense of position to establish conventional spelling in ways that are commonly understood by others in this form of communication. This may be understood as working with numeracy at the micro level of developing words that are conventional in the students' reading and writing attempts. More complex work can be identified in examining and investigating the initial, medial and final sounds in words and determining patterns. These patterns can assist with the decoding and encoding of the focus vocabulary when it is found in diverse contexts, have multiple meanings and various language functions. Common ways in which pattern identification supports language development may be identified easily in the ways in which words with random meaning are often clustered together because of their structure. The identification of such words at a micro level involves students engaging their skills of repeating patterns, and at times, their understanding of their growing patterns. These numeracy strategies are particularly important for students' success in programs which emphasize formal literacy activities based on programs which have phonemic awareness as their foundational approach. Whilst there are

opportunities to use mathematical concepts and strategies in ‘whole language’ approaches to language literacy, they may not appear as obvious as those which are presented in the alternative pedagogies, however, they are present and combining the mathematical approach within the language learning context is still beneficial in breaking down the disciplinary boundaries and providing students with skill sets that are fluid and transferable.

A sense of space and position also play a major role at the meso level. Developing statements, exclamations and questions as isolated components of learning requires a complex understanding of the placement and function of the words used to develop the structure of each of these. A campaign slogan to support moderation in alcohol intake, for example, can easily be misconstrued by the placement of the symbolic conventions that are used in language learning as clues to the meaning of the statement. The replacement of a simple comma or different emphasis on the enunciation of the message can send a message which is far from which is intended. ‘*Dry July, pass on the glass*’ could easily be interpreted as ‘*Dry July- pass on the glass*’. Much of the early years’ learning and understanding of symbolic representation is learned through the interaction with mathematical symbolic structures. This is further complicated as students progress to more complex symbolic representations and the logic behind the order of operations in mathematics and learn to use quotation marks, for example in direct and indirect speech and in the written text that describes a two -person conversation. The meso level not only lends itself to the consideration of the interpretation of the symbolic representation of punctuation symbols, the emphasis placed on words in the structure and the accompanying characteristics in word placement and identifying symbols that characterize each of these structures, it also lends itself to an overview of sequence and sense, which are the two remaining characteristics of the overall framework with which teachers can support their students in a mathematical approach to language literacy by utilizing the students’ numeracy competencies.

The notion of sequencing is based on the mathematical understanding of ordinal number and ‘*place*’, each in relation to each other. The understanding of sequencing is critical to the development of statements, questions or exclamations which come together to present an idea, a narrative, a recount, a procedure or any other product of literacy learning. It is also important at a very basic level to establish the understanding of sets of sentences, questions or an interpolation of these and exclamations to provide writing and reading texts which are useful communications and are able to be understood by the audiences for such work. In its most sophisticated role, sequencing becomes a timeline. A timeline is required in simple and complex writing and reading and, while it may not always require the precision of calibration and scale as it does in historical texts and some informative writing, is a necessary component for narrative, recount, procedure and other reading and writing genre that seek to inform, entertain, instruct, retell and record. These capacities are not only necessary at the meso level but also at the macro level where making *sense* or making meaning are important aspects of reading and writing. The mathematical foundations of debate, position statements and analysis are heavily reliant on various forms of logical reasoning which are basic mathematical skills pertaining to finding patterns, function and relationships. These logical capacities are not confined to simple deductive logic, but also include capacities relating to inductive reasoning, adaptive and abductive reasoning. In this manner, the development of critical numeracy is able to compliment the development of critical literacy and the overall perspective of logical examination of diverse perspectives, an appreciation of distinct views and their foundations and the capacity to identify the consequences of what is said and unsaid, epistemologies which are respected and those which are undervalued, those which are overstated and privileged and those which are neglected or ignored.

DEVELOPING A FRAMEWORK

For writing and reading skills to be fully understood as numeracy related competencies, it is important to have a frame of reference within which to place and make connections to learning in these disciplines, which are themselves frequently observed as distanced and unrelated, but which are important to understand as complimentary means of holistic learning. Table 1 illustrates the way in which these disciplines are effective as complimentary to the understanding of each other in the context of teaching language literacy skills.

Table 1

Levels of investigation.	Structure	Sequence	Sense
Micro	Word patterns Word structures Position in suffices, prefixes Structures and patterning in spelling and decoding	Putting together word structures to create conventional sequence of questions, exclamations and statements	Ensuring common meaning and understanding in terms of logic and reasoning, making meaning
Meso	Punctuation structures Symbolic representation of symbolic punctuation, placement and conventions	Identifying communication structures which allow conventional communication in reading and writing.	Paragraphing, dialogue in its various written forms of direct speech, indirect speech and the conventions of writing and interpreting the structure of two- person conversations which do not necessary always identify the speaker explicitly
Macro	Developing statements that reflect the structures and conventionalities of diverse means of communication, including verb tense, participles, singular and plural nouns, adverbs and adjectives, including clauses which are functional in diverse ways.	Developing timelines, sequence, elapsed time and place, position and order of events that create the focus of the writing and support its purpose and conventions.	Developing models that exemplify the purpose of the writing or reading. Finding logical patterns in the ways in which structure supports purpose, clarity and logical development of the reading and writing and identifies it with a specific writing intention,, genre or text type.

By using frameworks similar to this example, students are able to use their mathematical knowledge in explicit ways to engage productively with increasingly complex language literacy and focus on the reasoning and logic skills which underpin criticality. Despite the notion that critical thinking is initially subject specific (R Paul, 2005), the exploration of the linkages, connections, patterns and relationships across these two learning domains not only facilitates the development of skills which are not content specific, but necessitates the types of thinking and reasoning that are pertinent to the informal learning experienced in everyday life in addition to the deeper understanding of literacy and numeracy in formal classroom contexts (Sellers, 2008) . Any pedagogical strategies that support the integration of classroom tasks aimed at students exploring how their mathematical knowledge is used as numeracy competencies to improve their understanding of language literacy has the potential to improve students thinking skills in relation to becoming critical thinkers in both subject domains. The implementation of integrated strategies is especially useful in models which are developed to explore the ways in which students use and interact with learning in these domains to develop critical literacy (Freebody & Luke, 2003) and critical numeracy (Watson, 2008). The use of mathematical visuals (Siemon et al., 2013) to explore literacy ideas and develop problem solving strategies also provides opportunities for integrated conceptual development (Afamasaga-Fuata'i, 2008)

CONCLUSION

Literacy and numeracy are frequently considered to be the most important school subjects, especially in education systems which are dominated by neoliberal policy and characteristics. Together, they demand the lion's share of the allocated curriculum time during the school day. By investigating and identifying how these subjects support and relate to one another in obvious and complex ways, students are able to develop deeper understanding of the roles that these pivotal learning areas play in developing thinking skills in both these domains and in others across the curriculum.

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Refining Inconstancy Of Prayer Among University Students By Using Digital Visual Schedule

Amin Mohd DAMANHURI,

*Faculty of Art & Design, Universiti Teknologi MARA,
40450 Shah Alam, Selangor, Malaysia*

Muhammad FAZRULILAH

*Faculty of Art & Design, Universiti Teknologi MARA,
40450 Shah Alam, Selangor, Malaysia*

Siti Humaira RAMLI

*Faculty of Art & Design, Universiti Teknologi MARA,
40450 Shah Alam, Selangor, Malaysia
siti7169@salam.uitm.edu.my*

Muhamad Fairus KAMARUZAMAN

*Formgiving Design Research Group, Faculty of Art &
Design, Universiti Teknologi MARA,
40450 Shah Alam, Selangor, Malaysia
Creative Visual Exchange Research Group,
Faculty of Art & Design,
Universiti Teknologi MARA,
42300 Puncak Alam, Selangor, Malaysia
muhamadfairus@salam.uitm.edu.my*

ABSTRACT

Prayer is vital in every single life of Muslim. It is not only the first pillar of Islam after one accepting it as their main religion, but it also assists every Muslims to stay mindful of their faith and actions throughout the life. Its devotion is to put ourselves in touch with God. Despite prayer being so important, it is a worrying that many Muslims do not pray or fulfil the conditions of the prayer. In recent years, many university students who lose sight of the prayers because of too busy with their activities and assignment tasks. They also did not realise the importance of preserving prayer is an obligation that must be undertaken as a Muslim. As we enter the world of mobile technology, mobile learning has formed an outstanding outcome on the total education performance. Investigation of mobile learning, specifically on the digital visual schedule were conducted to fulfil the best approach on individual's enhancement of prayers, specifically among university students. The research objective is to investigate whether a digital visual schedule can improve their prayers consistency. Through this investigation, an evaluation can be made among respondents who utilise digital visual schedule to perform prayer and respondents who without using the prayer schedule.

Key words: Prayer, Muslims, Visual Schedule

INTRODUCTION

Prayer, or else known as As-Salah in Arabic is derived from the Arabic word meaning "connection". It is one amongst the pillar of Islam practised five times a day according to prayer cycle or raka'ats which varies depending on the type of prayer. It is compulsory for every Muslim whom has reach puberty to performs prayer. Prayer need to be established by every Muslim in home or with the Muslim community in order to benefit intended by God should be realised. However, keeping the prayer is a tough task if they are not cultivated and educated properly from the young age. According to Bidin, Baharuddin, and Mustari (2015) in their research that negligence of prayer among institutional of higher learning must be viewed as a national issue that needs unravelling as these students are the predecessor to their country. The main objective of this study is to examine the rate of improvement in prayer among students with the aid of digital visual schedule. In other words, whether by using digital visual schedule is the right approach to heighten the consistency in student's prayer. Moreover, if the digital visual schedule is upheld to assist and improve student's prayer, then it is appropriate to investigate the effectiveness of the digital visual schedule in keeping prayer in check (Jalaluddin, Bakeri, Nasir, Rani, & Kamaruzaman, 2016; N. M. Rani, Ramli, Legino, Azahari, & Kamaruzaman, 2016). This research study can be beneficial to university students and also to all

Muslims globally, as it helps refining the consistency and the significance of performing prayer. Preliminary research was done to gain an overview of the university students status quo regarding their prayer. This was done by distributing questionnaire among university students. Then, a handful of samples were taken to be used for the further study that involves using the digital visual schedule itself.

Prayer

The Islamic definition of prayer is the name given to the formal prayer of Islam. The prayer is one of the compulsory rites of the religion, to be performed five times a day by every obedient adult Muslim and it is the second Pillar of Islam. It is a connection between the human beings and his creator Allah SWT. Prayer is the key to success in this world and in the hereafter. The five prayer consists of Al-Fajr (dawn, before sunrise), Al-Zuhr (midday, after the sun passes its highest), Al-Asr (late part of the afternoon), Al-Maghrib (just after sunset) and Al-Isha (between sunset and midnight). It is best to carry out each of five obligatory prayer as soon as the time has commenced, as it is not acceptable to delay the prayer without a realistic reason, and it must not be delayed beyond its permitted time. Before prayer can be performed, every human need to consummate a ritual ablution. It is performed by using a clean water or sand (tayammum) when water is unavailable. Furthermore, for prayer to be considered valid, ones must have the confidence of the time of worship, facing the Mecca (Qibla), covering their awrah as well as clean and tidy. Allah SWT has spoken in His Glorious Book (Al-Quran) which mean, ‘Successful indeed are the believers who are modest in their prayers’ and in another verse, ‘And who pay heed to their prayers. These are the successors who will inherit in Firdaus Paradise. They will abide therein.’ (Al-Mu’minun, verse 1-2, 9-11).

Visual schedule

A visual schedule is a learning tool that is focused on visual aids. It is based on the sequential presentation of a series of tasks, clear and rationalised as well as simplified form of visual to simplify the schematic (Kamaruzaman & Azahari, 2014). As the name implies, a digital visual schedule is a visual schedule that is available digitally. It can help every person to understand the status quo, and anticipate the various events that will happen. It is relevant to note that, by using visual schedules, it be able to assist one aspect of their life. According to Stahmer et al. (2015) and N. M. Rani et al. (2016) visual schedules can utilise the individual’s visual strengths and therefore provides a receptive communication system to increase understanding, helps the individual learn new things and also enhance their flexibility.

State of the art

Regarding the related research and literature, it is noted that there are many studies pertaining to prayer in Malaysia, but a small amount of them emphasis on the university students. According to a study by Yusoff, Zain, and Senik (2008) they mentioned the lack of emphasis in performing prayer affects student’s personality and behaviour. In their initial phase of their study, they had asked random students about their prayer performance and consistency and the outcome were many of the students neglect their prayers. As prayer keep on being neglected, those who neglect it are exposing themselves to the threat of social problems which lingers around the society nowadays (Ahmad & Othman, 2017). There are reasons why prayer is compulsory for Muslims; a well-performed prayer helps in preventing wrongdoing from being done. That is why the negligence of prayer is dangerous. Jusoh and Suhardi (2004) in their research had found and categorised three types of students, dissented by their performance of prayer. The first type is the one who is committed to performing prayer. They concern and are aware of their prayer. Followed by the second one who rarely misses in performing prayer and if they miss it, it was not regularly. If they started to skip their prayers frequently, they would fall to the third type, the ones who are whether ignorant or thoughtless about performing prayer. Al-Krenawi and Graham (2000), Hassan, Abidin, Legino, Anwar, and Kamaruzaman (2015) as well as Amirebrahimi (2016), mentioned that these days, technology devices are something common in the society. Applying the usage of technology know how in assisting the improvement of prayer can be seen as an engaging approach to the university students as it fits with the current trend (N. Rani, Legino, Mudzafar, & Kamaruzaman, 2014). Amirebrahimi (2016) and N. M. Rani, Yusoff, and Kamaruzaman (2015) also suggest using tables and graphs to keep track of prayer daily and weekly. The timetable works as a reflection of efforts done by the person, where one can see their development and enhancement in performing prayers.

METHODOLOGY

As mentioned by Patton (2002), the qualitative approach has permitted scholars to stock up a sound understanding on the outcome of reality value. Qualitative approaches are naturalistic to the extent that the research takes place in real world setting and scholars does not attempt to manipulate the phenomenon of interest. The phenomenon of interest

unfolds naturally. Creswell (2013) in his book stated to immerse oneself in naturally occurring complexity involves what qualitative methodologist. It is also relevant to note that the qualitative research can provide answers and illuminate issues underpinning the research topic. According to Richards (2014), “research method is a structure and strategy of the investigation, so conceived to enable obtaining answers to research questions or problems”. In any research study, a research method is important to support the research operations to furnish determined information to the scholars. Hence, according to Anwar (2016), there is an exigency to recognise the ideal method which to drive this research streamline with the research findings. The research method is based on the behavioural and attitudinal way. For this reason, the qualitative method will be the appropriate approach in carrying out this research. This is due to understanding, exploring and evaluating the digital visual schedule in refining the inconsistency of prayer among the university students.

Survey

According to Hackos and Redish (1998), Kamaruzaman, Azahari, and Anwar (2012) as well as Maguire (2001), the survey approach is ways of gathering information from individuals regarding their perceptions, behaviours, characteristics, thoughts, or feelings. Beside is the right and effective process to collect the amount of data in a short period of time from a large sample. There are two major techniques in collecting survey data. First, one is using questionnaire, either self-completed or read to the participant and completed by the investigators. The second way is structured interviews, which is conducted in person by phone or through numerous communication technologies.

However, the survey may not be accurate regarding thoughts, feelings, behaviour, or even perception. The main objective of this research study is to examine the effectiveness of digital visual schedule and its improvement rate in prayer among university students in Klang Valley, Selangor, Malaysia. One hundred students from Universiti Teknologi MARA (UiTM) Puncak Alam campus have been choose randomly from any faculty. The respondents consists of fifty males’ students and fifty females’ students to represent the whole population of Klang Valley university students. UiTM was selected due to its demographic that most of their student are Muslim youths. The selected students will be given a set of questionnaire. The enquiry in the questionnaire will include the background of the respondent, basic knowledge about prayer and the effect and consequences of negating prayer as referred to (Jusoh & Suhardi, 2004) research study.

Usability Testing

Based on behavioural studies, usability testing process focus on evaluating a technique that allows observing an individual’s experience. It is also an established way to gather rich qualitative data from respondents. The respondents will be given a task and scenario to practice. He or she will be through the phase according to the given task. A specific, concrete, and reflect actual goal is the criteria that the task should be. The task needs to provide extra information necessary to complete the task. According to Virzi (1992) and Azman and Kamaruzaman (2016), result of human being factors practice is related to the type of the usability test and the usability test goal

The one hundred respondents were randomly selected for the experiment. The respondents were divided into fifty male respondents and also fifty female respondents. This is to balance the results and to avoid bias outcome. They were given an assistive learning technology such as tablet, smart phone and iPad with a prayer track application been installed in it. At this point the apps that been install into the assistive learning technology device is Salaat Tracker. In reference to Figure 1 and Figure 2, it shows the Salaat Tracker model. This is also to remind them about time and frame of the prayers. Before that, they were given one-week trial without using the apps. After they submit the result, they once again are given one more week to tabulate their prayer with Salaat Tracker apps helps. This is due to see the result of having apps to help and before using it.

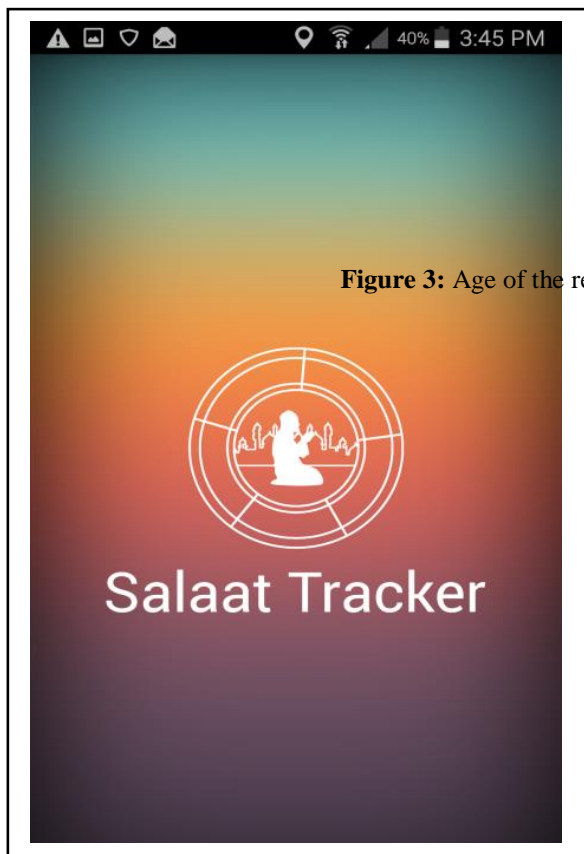


Figure 1: The Salaat Tracker Index page

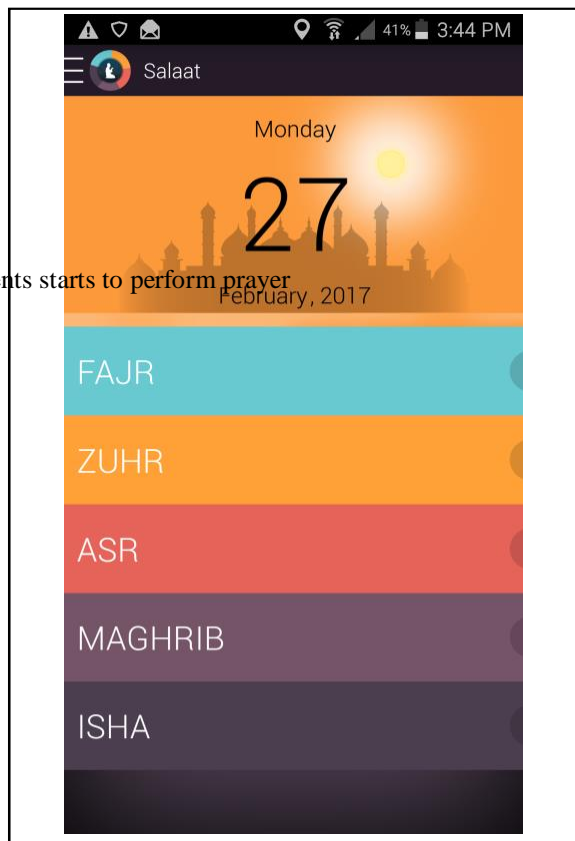


Figure 2: Five essential prayer indicator in Salaat Tracker

Data Collection and Data Findings

A questionnaire was distributed evenly to one hundred respondents in UiTM Puncak Alam campus, Selangor, Malaysia. The one hundred respondents which consist of fifty male respondents and fifty female respondents. Subsequently, data were collected from all the respondents and were analysed. The data findings was later on tabulated into pie charts. Figure 3 displays the age when the respondent starts to perform prayer as early as seven years old. The majority of the respondent starts performing prayer around age 8 to 10 years old. Figure 4 describes the factor that encourages the respondent to perform prayer that they have been exposed to the teaching of Islam and that performing prayer are compulsory to Muslim. The least of the respondent perform prayer due to teacher's order.

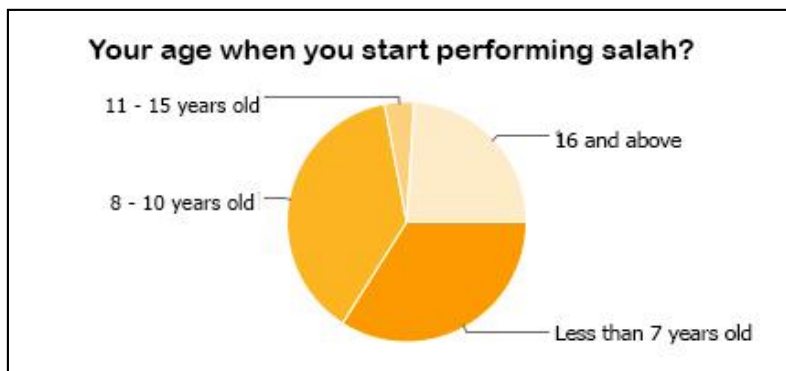


Figure 3: Age of the respondents starts to perform prayer

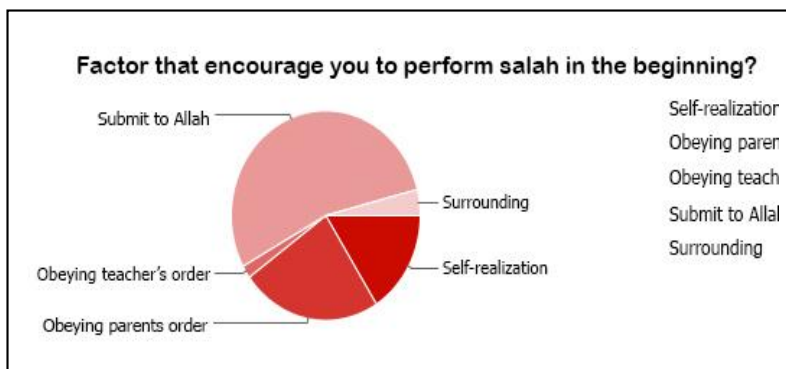


Figure 4: Encouragement factor to perform prayer

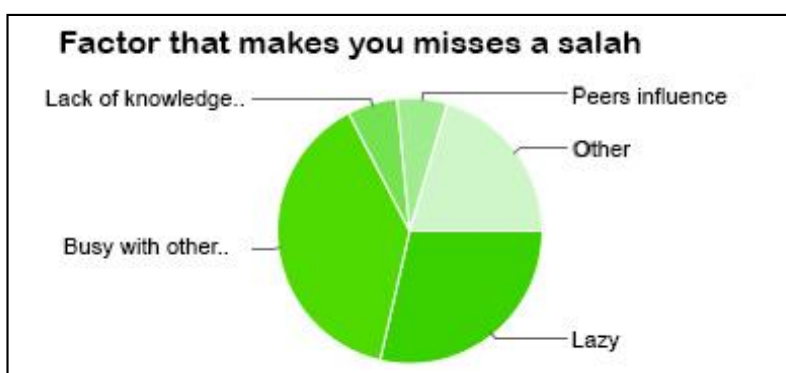


Figure 5: Factor that respondents misses their prayer

Figure 5 displays respondent's answer to the factor that causes them to missed prayer while in reference to Figure 6, it reveals the action that respondent took once they miss a prayer. Two of the most prominent factor that causes them to miss a prayer is being busy with other thing and just being lazy to perform prayer.

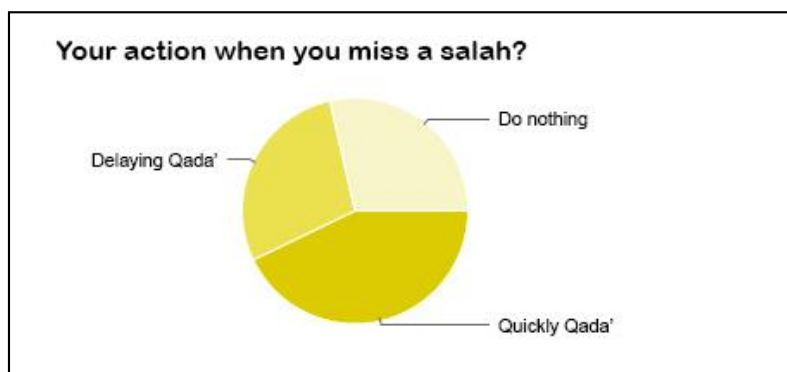


Figure 6: Action been taken once the respondents missed their prayer

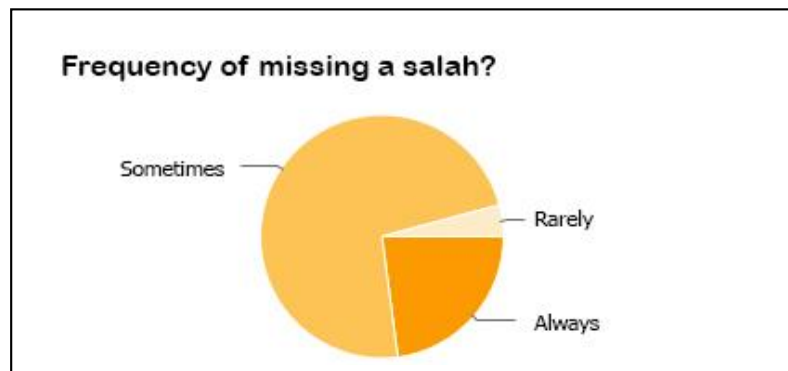


Figure 7: Regularity rate in neglecting prayer

Figure 7 reveal that most of the respondents did not regularly miss their prayer. Fifty respondents were asked to install a Salaat Tracker apps that enable them to track the performance of their prayer and at the same time reminding them about the time frame of the prayers. In 1 week time, the data of their prayer performance were collected and tabulated to measure the difference before and after using the prayer manager. The result of the seven days before and after of testing is presented below. Each column consists of 5 times of prayer each day. Where “X” represents the time of prayer that the respondent missed and “O” as the time of prayer fulfilled.

Table 1: Before the installation of Salaat Tracker apps

Respondents	Gender	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	Male	x,x,x,o,x	x,o,o,o,o	x,x,o,x,o	o,o,o,x,o	x,o,o,o,o	x,o,o,o,x	x,o,o,x,x
2	Male	x,o,o,x,o	x,o,o,x,o	x,o,x,x,o	x,o,x,o,o	x,o,o,o,x	x,o,o,o,x	x,o,o,x,x
3	Male	x,o,o,o,x	o,o,x,o,x	x,x,o,o,o	x,o,x,x,o	o,o,x,o,o	o,o,x,o,x	o,o,o,o,o
4	Male	x,o,o,o,o	x,x,o,o,o	x,o,o,x,o	x,o,o,x,x	o,o,o,o,o	x,o,o,x,o	x,o,o,o,x
5	Male	x,x,x,x,x	x,x,o,o,o	x,x,o,x,o	o,o,o,x,o	x,o,o,o,o	x,o,o,o,x	x,o,o,x,x
6	Male	x,o,o,x,o	x,x,o,x,o	x,o,x,x,o	x,o,x,o,o	x,o,o,o,x	x,o,o,o,x	x,o,o,x,x
7	Male	x,o,o,o,x	o,o,x,o,x	x,x,o,o,o	x,o,x,x,o	o,o,x,o,o	o,o,o,o,x	x,o,o,o,o
8	Male	x,o,o,o,o	x,x,o,o,o	x,o,o,x,o	x,o,o,x,x	o,o,o,o,o	x,o,o,x,o	x,o,o,o,x
9	Male	x,x,x,o,x	x,o,o,o,o	x,x,o,x,o	o,o,o,x,o	x,o,o,o,o	x,o,o,o,x	x,o,o,x,x
10	Male	x,o,o,x,o	x,o,o,x,o	x,o,x,x,o	x,o,x,o,o	x,o,o,o,x	x,o,o,o,x	x,o,o,x,x
11	Male	x,o,o,o,x	o,o,x,o,x	x,x,o,o,o	x,o,x,x,o	o,o,x,o,o	o,o,x,o,x	o,o,o,o,o
12	Male	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	x,o,o,o,o	x,o,o,o,o
13	Male	x,x,x,o,x	x,o,o,o,o	x,x,o,x,o	o,o,o,x,o	x,o,o,o,o	x,o,o,o,x	x,o,o,x,x
14	Male	x,o,o,x,o	x,o,o,x,o	x,o,x,x,o	x,o,x,o,o	x,o,o,o,x	x,o,o,o,x	x,o,o,x,x
15	Male	x,o,o,o,x	o,o,x,o,x	x,x,o,o,o	x,o,x,x,o	o,o,x,o,o	x,o,x,o,x	x,o,o,o,o
16	Male	x,o,o,o,o	x,x,o,o,o	x,o,o,x,o	x,o,o,x,x	o,o,o,o,o	x,o,o,x,o	x,o,o,o,x

17	Male	x,x,x,o,x	x,o,o,o,o	x,x,o,x,o	o,o,o,x,o	x,o,o,o,o	x,o,o,o,x	x,o,o,x,x
18	Male	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o
19	Male	x,o,o,o,x	o,o,x,o,x	x,x,o,o,o	x,o,x,x,o	o,o,x,o,o	o,o,x,o,x	o,o,o,o,o
20	Male	x,o,o,x,o	x,x,o,o,o	x,o,o,x,o	x,o,o,x,x	o,o,o,o,o	x,o,o,x,o	x,o,o,o,x
21	Male	x,x,x,o,x	x,o,o,o,o	x,x,o,x,o	o,o,o,x,o	x,o,o,o,o	x,o,o,o,x	x,o,o,x,x
22	Male	x,o,o,x,o	x,o,o,x,o	x,o,x,x,o	x,o,x,o,o	x,o,o,o,x	x,o,o,o,x	x,o,o,x,x
23	Male	x,o,o,o,x	x,o,x,o,x	x,x,o,o,o	x,o,x,x,o	o,o,x,x,o	o,o,x,o,x	o,o,x,x,o
24	Male	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o
25	Male	x,x,x,o,x	x,o,o,x,o	x,x,o,x,o	o,o,o,x,o	x,o,o,o,o	x,o,o,o,x	x,o,o,x,x
26	Female	x,o,o,x,o	x,o,o,x,o	x,o,x,x,o	x,o,x,o,o	x,o,o,o,x	x,o,o,o,x	x,o,o,x,x
27	Female	x,o,o,o,x	x,o,x,o,x	x,x,o,o,x	x,o,x,x,o	o,o,o,o,o	o,o,o,o,x	x,o,o,o,o
28	Female	x,o,o,o,x	x,x,o,o,o	x,o,o,x,o	x,o,o,x,x	o,o,o,o,o	x,o,o,x,o	x,o,o,o,x
29	Female	x,x,x,o,x	x,o,o,o,x	x,x,o,x,o	o,o,o,x,x	x,o,o,o,x	x,o,o,o,x	x,o,o,x,x
30	Female	x,o,o,x,o	x,o,o,x,o	x,o,x,x,o	x,o,x,o,o	x,o,o,o,x	x,o,o,o,x	x,o,o,x,x
31	Female	x,o,o,o,x	x,o,x,o,x	x,x,o,o,x	x,o,x,x,o	o,o,x,o,o	o,o,x,o,x	x,o,o,o,x
32	Female	x,o,o,o,o	x,x,o,o,o	x,o,o,x,o	x,o,o,x,x	o,o,o,o,o	x,o,o,x,o	x,o,o,o,x
33	Female	x,x,x,o,x	x,o,o,o,o	x,x,o,x,o	o,o,o,x,o	x,o,o,o,o	x,o,o,o,x	x,o,o,x,x
34	Female	x,o,o,x,o	x,o,o,x,o	x,o,x,x,o	x,o,x,o,o	x,o,o,o,x	x,o,o,o,x	x,o,o,x,x
35	Female	x,o,o,o,x	o,o,x,o,x	x,x,o,o,o	x,o,x,x,o	o,o,x,o,o	o,o,x,o,x	o,o,o,o,o
36	Female	x,o,o,o,o	x,x,o,o,o	x,o,o,x,o	x,o,o,x,x	o,o,o,o,o	x,o,o,x,o	x,o,o,o,x
37	Female	x,x,x,o,x	x,o,o,o,o	x,x,o,x,o	o,o,o,x,o	x,o,o,o,o	x,o,o,o,x	x,o,o,x,x
38	Female	x,o,o,x,o	x,o,o,x,o	x,o,x,x,o	x,o,x,o,o	x,o,o,o,x	x,o,o,o,x	x,o,o,x,x
39	Female	x,o,o,o,x	o,o,x,o,x	x,x,o,o,o	x,o,x,x,o	o,o,x,o,o	o,o,x,o,x	x,o,o,x,x
40	Female	x,o,o,o,o	x,x,o,o,o	x,o,o,x,o	x,o,o,x,x	o,o,o,o,o	x,o,o,x,o	x,o,o,o,x
41	Female	x,x,x,o,x	x,o,o,o,o	x,x,o,x,o	o,o,o,x,o	x,o,o,o,o	x,o,o,o,x	x,o,o,x,x
42	Female	x,o,o,x,o	x,o,o,x,o	x,o,x,x,o	x,o,x,o,o	x,o,o,o,x	x,o,o,o,x	x,o,o,x,x
43	Female	x,o,o,o,x	o,o,x,o,x	x,x,o,o,o	x,o,x,x,o	o,o,x,o,o	o,o,x,o,x	o,x,x,o,o
44	Female	x,o,o,o,o	x,x,o,o,o	x,o,o,x,o	x,o,o,x,x	o,o,o,o,o	x,o,o,x,o	x,o,o,o,x
45	Female	x,x,x,o,x	x,o,o,o,o	x,x,o,x,o	o,o,o,x,o	x,o,o,o,o	x,o,o,o,x	x,o,o,x,x
46	Female	x,o,o,x,o	x,o,o,x,o	x,o,x,x,o	x,o,x,o,o	x,o,o,o,x	x,o,o,o,x	x,o,o,x,x
47	Female	x,o,o,o,x	o,o,x,o,x	x,x,o,o,o	x,o,x,x,o	x,o,o,x,x	o,o,x,o,x	o,o,o,o,o
48	Female	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	x,o,o,o,o	x,o,o,o,o
49	Female	x,x,x,o,x	x,o,o,o,o	x,x,o,x,o	o,o,o,x,o	x,o,o,o,o	x,o,o,o,x	x,o,o,x,x
50	Female	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o	o,o,o,o,o

Table 2: After the installation of Salaat Tracker apps

Respondents	Gender	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	Male	x,o,o,o,o	x,o,o,x,o	o,o,o,o,o	o,o,o,x,o	x,o,o,x,o	o,o,o,o,x	o,o,o,o,o
2	Male	o,o,o,o,o	x,o,o,o,o	x,o,o,x,o	o,o,o,o,o	o,o,o,o,o	x,o,o,o,x	x,o,o,x,x
3	Male	x,o,o,o,o	o,o,x,o,x	x,x,o,o,o	o,o,o,o,o	o,o,x,o,o	o,o,o,o,x	o,o,o,o,o
4	Male	o,o,o,o,o	o,x,o,o,o	x,o,o,o,o	o,o,o,o,o	x,o,o,o,o	o,o,o,o,o	o,o,o,o,o
5	Male	x,o,o,o,o	x,o,o,x,o	o,o,o,o,o	o,o,o,x,o	x,o,o,x,o	o,o,o,o,x	o,o,o,o,o
6	Male	o,o,o,o,o	x,o,o,o,o	x,o,o,x,o	o,o,o,o,o	o,o,o,o,o	x,o,o,o,x	x,o,o,x,x
7	Male	x,o,o,o,o	o,o,x,o,x	x,x,o,o,o	o,o,o,o,o	o,o,x,o,o	o,o,o,o,x	o,o,o,o,o
8	Male	o,o,o,o,o	o,x,o,o,o	x,o,o,o,o	o,o,o,o,o	x,o,o,o,o	o,o,o,o,o	o,o,o,o,o
9	Male	x,o,o,o,o	x,o,o,x,o	o,o,o,o,o	o,o,o,x,o	x,o,o,x,o	o,o,o,o,x	o,o,o,o,o
10	Male	o,o,o,o,o	x,o,o,o,o	x,o,o,x,o	o,o,o,o,o	o,o,o,o,o	x,o,o,o,x	x,o,o,x,x
11	Male	x,o,o,o,o	o,o,x,o,x	x,x,o,o,o	o,o,o,o,o	o,o,x,o,o	o,o,o,o,x	o,o,o,o,o
12	Male	o,o,o,o,o	o,x,o,o,o	x,o,o,o,o	o,o,o,o,o	x,o,o,o,o	o,o,o,o,o	o,o,o,o,o
13	Male	x,o,o,o,o	x,o,o,x,o	o,o,o,o,o	o,o,o,x,o	x,o,o,x,o	o,o,o,o,x	o,o,o,o,o
14	Male	o,o,o,o,o	x,o,o,o,o	x,o,o,x,o	o,o,o,o,o	o,o,o,o,o	x,o,o,o,x	x,o,o,x,x
15	Male	x,o,o,o,o	o,o,x,o,x	x,x,o,o,o	o,o,o,o,o	o,o,x,o,o	o,o,o,o,x	o,o,o,o,o

16	Male	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0
17	Male	0,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,X,0	X,0,0,X,0	0,0,0,0,X	0,0,0,0,0
18	Male	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0
19	Male	X,0,0,0,0	0,0,X,0,X	X,X,0,0,0	0,0,0,0,0	0,0,X,0,0	0,0,0,0,X	0,0,0,0,0
20	Male	0,0,0,0,0	0,X,0,0,0	X,0,0,0,0	0,0,0,0,0	X,0,0,0,0	0,0,0,0,0	0,0,0,0,0
21	Male	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,X,0	X,0,0,X,0	0,0,0,0,X	0,0,0,0,0
22	Male	0,0,0,0,0	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,0,0	X,0,0,0,X	X,0,0,0,X
23	Male	X,0,0,0,0	0,0,X,0,X	X,0,0,0,0	0,0,0,0,0	0,0,X,0,0	0,0,0,0,X	0,0,0,0,0
24	Male	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0
25	Female	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,X,0	X,0,0,X,0	0,0,0,0,X	0,0,0,0,0
26	Female	0,0,0,0,0	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,0,0	X,0,0,0,X	X,0,0,X,X
27	Female	X,0,0,0,0	0,0,X,0,X	X,X,0,0,0	0,0,0,0,0	0,0,X,0,0	0,0,0,0,X	0,0,0,0,0
28	Female	0,0,0,0,0	0,X,0,0,0	X,0,0,0,0	0,0,0,0,0	X,0,0,0,0	0,0,0,0,0	0,0,0,0,0
29	Female	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,X,0	X,0,0,X,0	0,0,0,0,X	0,0,0,0,0
30	Female	0,0,0,0,0	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,0,0	X,0,0,0,X	X,0,0,X,X
31	Female	X,0,0,0,0	0,0,X,0,X	X,X,0,0,0	0,0,0,0,0	0,0,X,0,0	0,0,0,0,X	0,0,0,0,0
32	Female	0,0,0,0,0	0,X,0,0,0	X,0,0,0,0	0,0,0,0,0	X,0,0,0,0	0,0,0,0,0	0,0,0,0,0
33	Female	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,X,0	X,0,0,X,0	0,0,0,0,X	0,0,0,0,0
34	Female	0,0,0,0,0	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,0,0	X,0,0,0,X	X,0,0,X,X
35	Female	X,0,0,0,0	0,0,X,0,X	X,X,0,0,0	0,0,0,0,0	0,0,X,0,0	0,0,0,0,X	0,0,0,0,0
36	Female	0,0,0,0,0	0,X,0,0,0	X,0,0,0,0	0,0,0,0,0	X,0,0,0,0	0,0,0,0,0	0,0,0,0,0
37	Female	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,X,0	X,0,0,X,0	0,0,0,0,X	0,0,0,0,0
38	Female	0,0,0,0,0	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,0,0	X,0,0,0,X	X,0,0,X,X
39	Female	X,0,0,0,0	0,0,X,0,X	X,X,0,0,0	0,0,0,0,0	0,0,X,0,0	0,0,0,0,X	0,0,0,0,0
40	Female	0,0,0,0,0	0,X,0,0,0	X,0,0,0,0	0,0,0,0,0	X,0,0,0,0	0,0,0,0,0	0,0,0,0,0
41	Female	0,0,0,0,0	0,0,0,X,0	0,0,0,0,0	0,0,0,X,0	0,0,0,X,0	0,0,0,0,0	0,0,0,0,0
42	Female	0,0,0,0,0	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,0,0	X,0,0,0,X	X,0,0,X,X
43	Female	X,0,0,0,0	0,0,X,0,X	X,X,0,0,0	0,0,0,0,0	0,0,X,0,0	0,0,0,0,X	0,0,0,0,0
44	Female	0,0,0,0,0	0,X,0,0,0	X,0,0,0,0	0,0,0,0,0	X,0,0,0,0	0,0,0,0,0	0,0,0,0,0
45	Female	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	X,0,0,0,0	0,0,0,0,0	0,0,0,0,0
46	Female	0,0,0,0,0	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,0,0	X,0,0,0,X	X,0,0,X,X
47	Female	X,0,0,0,0	0,0,X,0,X	X,X,0,0,0	0,0,0,0,0	0,0,X,0,0	0,0,0,0,X	0,0,0,0,0
48	Female	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0
49	Female	X,0,0,0,0	X,0,0,X,0	0,0,0,0,0	0,0,0,X,0	X,0,0,X,0	0,0,0,0,X	0,0,0,0,0
50	Female	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0	0,0,0,0,0

From the tabulated data, can be seen improvement in the subject's execution of prayer. The prayer performed by the respondents improves slowly but not consistently. This condition may be caused by subject's excitement to see their progress in the prayer managing application. Furthermore, they have the apps to remind them whether they perform prayer or not. From Table 2, it can still be seen that there is a lesser prayer that the respondents missed compared to table 1.

CONCLUSION

Based on the finding it can be conclude that with the assistance of digital visual schedule, there are slightly improvement on the selected respondents' prayer execution, although some respondents are not gradually consistently on their prayer. There is a various aspect that can cause the improvement in such a short time and to prove it; it will need another test which can be conducted in other time. In a nutshell, digital visual schedule turns out well in refining the inconstancy of prayer among university students.

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Reflections on People's Needs in Bangkok Community Based on Lifelong Learning Concept

Sumolnit KERDNOONWONG

Faculty of Education

Srinakharinwirot University

Thailand

sumolnit@g.swu.ac.th

ABSTRACT

Rapid growth of urbanization such as Bangkok, Thailand remains increase continuously with over consumption of resources which leads to be problems on people lives and environments. Therefore problems of the three selected communities were surveyed where located in central, east and west of Bangkok. The problems of the people were studied in five aspects; (1) living condition (2) occupation and income (3) education (4) environment and (5) health. The gathering data were critically analyzed to be the needs of the people in each community then the three projects were developed from their needs, the contexts of the communities including the problems. The evaluation on the completed projects which were studied in three aspects; (1) satisfactions (2) application for learning and (3) impacts on the communities. The evaluation results were reflected based on lifelong learning concept then proposed to be challenging points for future development in Bangkok communities as well as similar urban communities in Thailand.

INTRODUCTION

In 2014, Asia-Pacific developing countries mobilized 17.6 per cent of their gross domestic product in tax revenues, which is only half the average across the Organization for Economic Cooperation and Development countries (ESCAP 2017). Thus, the Asia-Pacific region as a whole has made impressive gains in global economic development over the last forty decades and further gains are expected. In 1990, the Asia-Pacific region constituted roughly 21% of the world's gross domestic product (GDP), while by 2011 the region accounted for 30% of world GDP (World Bank, 2014 cited in UNESCO Bangkok 2014a).

The evolving economic and employment structures are accompanied with a move towards regional integration as Asia-Pacific countries become more economically interconnected with each other as well as with the global market. The number of Free Trade Agreements (FTAs) has skyrocketed since 2000. This trend is expected to continue with the Association of Southeast Asian Nations (ASEAN) moving towards its economic integration as the ASEAN Economic Community (AEC) in 2015, alongside other major trade agreements, such as ASEAN+6 FTAs and the Trans-Pacific Partnership (TPP), being discussed.

Countries in the Asia-Pacific region are now facing increasingly challenging tasks of ensuring the global competitiveness of nations, while avoiding the potential pitfalls of globalization and regional integration such as increased inequality, environmental degradation, youth unemployment and loss of cultural identity (UNESCO, 2014). Accordingly, the relevance of education for decent life and work such as for older learners, the 2012 Programme for International Student Assessment (PISA) showed that 15-year-old students in countries such as Indonesia, Kazakhstan, Malaysia and Thailand performed well below the OECD average in reading, mathematics and science (OECD, 2013). In addition, the region is home to 65% of the world's adult illiterate population, accounting for close to 513 million adult illiterates, which is likely to remain as a serious challenge in the foreseeable future. Moreover, the gap prevails between what is taught in school and what is actually needed in the labour market and society. All learners should acquire relevant skills including technical and vocational skills for decent work and entrepreneurship as well as the transferrable skills and competencies to be creative and innovative, to think critically, to communicate effectively, to solve problems independently, and to be able to adapt to and assimilate change (UNESCO, 2014).

Thailand is one of the ASEAN countries which Bangkok has been the capital city for more than 230 years. Bangkok has gradually developed to be one of world's top destination cities in tourism with a registered population of over 5.6 million and estimated actual population of up to 8 million. Besides, the explosive growth of the urbanization of Bangkok started in the fifties and sixties. The quick rising of industrialization and economic development together with the centralization of the national government's activities are the main origins of its primacy. Until present, Bangkok continues to be the major centre of economic activities, which mainly rely on industry, trade and services (Suganya Boonprasirt, 1997).

Consequently, the rapid increasing of population causes the change on community, lifestyle of local people including resource consumption. The new comers are adults who come from rural area and neighborhood

countries. Regarding the OECD result and the adult illiterate population, their characteristics would affect to the primitive way of the community. However, the economic benefits would be also the results from the movers, according to the World Bank report, there were 15 low-income countries and 15 middle income countries in the Asia-Pacific region in 1990. By 2012, the number of low-income countries decreased by more than half (7 countries) while the number of middle income countries increased to 32 (World Bank, 2014).

Although many countries have enjoyed sustained economic growth, some are feeling that they might be heading to or are already in the so-called “middle income trap” as they lose their competitiveness in sectors such as manufacturing to newly emerging countries. In order for these countries to avoid such a trap, transformation to a knowledge-based economy is crucial. Education sector reform to improve access to learning and the quality of education, especially post-basic education, is critically important. Moreover, countries are increasingly acknowledging that such a transformation requires more focus on the acquisition of a range of “transversal competencies”, also known as 21st century skills, such as innovative thinking, creativity, adaptability, respect for diversity, global awareness and communication.

The labour market landscape has also changed notably in the region as employment rates in the agriculture sector have shrunk significantly while employment in both service and industry sectors is growing far more than in other regions of the world. These developments have resulted in substantial adjustments to economic structures and have had direct impacts on the human resources required for different and evolving labour needs. This trend calls for expansion and improvement of post-basic education, including technical and vocational education and training (TVET) as well as continuing education, so that learners can equip themselves with the relevant skills required in the labour market and stay adaptable and abreast with changes in labour market demands (UNESCO, 2014).

It would conclude that lifelong learning concept should be blended in the current learning style in order for fulfill the skills regarding the labour needs and demands because lifelong learning is a continuously supportive process which stimulates and empowers individuals to acquire all the knowledge, values, skills and understanding they will require throughout their lifetimes and to apply them with confidence, creativity and enjoyment, in all roles circumstances, and environments (Watson 2003).

Therefore, the surveyed study on problems in the selected communities identified the needs of the local people with the social and environmental impacts from the new comers, the projects were developed from the needs and the contexts then, the evaluation results of the projects were critically reflected based on lifelong learning concept to be the challenging guideline for such an urban community development. The guideline would be an alternative of balance community development together with decent life and work in current contexts.

THE STUDY

Problems in the selected Bangkok communities were studied by surveying at; (1) Jarurat Ton Sai community, Rajathevi district (Central Bangkok) (2) Ramkamheang 53 community, Wangthonglang district (East Bangkok) and (3) Klong Lat Mayom Floting Market community, Taling Chan District (West Bangkok). The sampling people answered the questionnaire which was used in quantitative survey on the problems in five aspects; (1) living condition (2) occupation and income (3) education (4) environment and (5) health. The interview was used to get qualitative data which the leaders in the communities gave the data on general contexts of the communities. Then the collected quantitative and qualitative data was critically analyze to be the needs of the people.

The three projects for the three communities were developed from the needs; (1) Quality of life for elderly project in Jarurat Ton Sai community (2) Fire Prevention project in Ramkamheang 53 community and (3) Local Wisdom museum project in Klong Lat Mayom Floting Market community. Then the projects were operated in the three communities by the research team.

After completing the projects, the evaluation on the projects by using the questionnaire, interview and discussion were studied in the participants' satisfactions, adaptation of learning in real life and also impact to their communities. The evaluation was critically reflected based on lifelong learning concept and the challenging guideline for urban community development was proposed as the final step of the study.

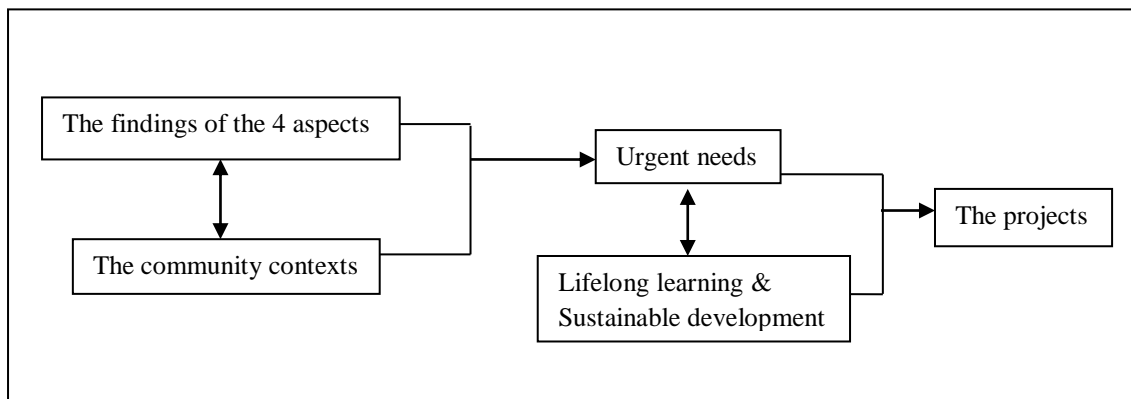


Figure 1: Framework of the study

FINDINGS

The survey results on problems of the communities in each aspect were defined as follow; the results in living condition aspect showed that the residences were built by various materials; one storey houses with non-permanent materials, three to five storey commercial concrete buildings and one to two storey wood sheet houses. Most residences were very close to the others with narrow alley, proper to walking but not for car driving. The results in occupation and income aspect showed that the local people were merchants in flea markets and in the floating market, government and private company officials and also unemployment. Their incomes were in the level of lower to moderate. The results in education aspect showed that their qualifications were high school level (grade 12), vocational certificate, bachelor degree and rarely in higher undergraduate degree. The results in environment aspect showed that there were water pollution from wastes, air pollution from motor boats as well as their noises. The results in health aspect showed that the people in elderly had physical health problems; high blood pressure and diabetes symptoms and mental health problems such anxiety and depress for middle-aged people.

Table 1: Findings of the communities in four aspects

Aspects/Communities	<i>Jarurat Ton Sai</i>	<i>Ramkamheang 53</i>	<i>Klong Lat Mayom</i>
<i>Living condition</i>	Non-permanent houses	Concrete buildings	Wood houses
<i>Occupation</i>	Merchants	Merchants	Merchants and officers
<i>Education</i>	High school	High school and Vocational Cert.	Vocational Cert. and Undergraduate
<i>Environment</i>	Water and air pollution	Water and air pollution	Wastes
<i>Health</i>	Health problems in elderly	Mental problems in middle-aged	Mental problems in middle-aged

The surveyed problems and the contexts of the communities were content analyzed to be the needs of the communities. The needs were classified, considered and arranged by urgent necessity in order to develop to be proper projects of each community. The three projects were; (1) Quality of life for elderly project in Jarurat Ton Sai community (2) Fire prevention project in Ramkamheang 53 community and (3) Local wisdom museum project in Klong Lat Mayom Floting Market community.

The finding results of the satisfaction questionnaire found that the participants' satisfaction level on the projects was high and very high.

Table 2: Findings of satisfaction level in the communities

Projects/ Satisfaction level	<i>Quality of life for elderly project</i>	<i>Fire prevention project</i>	<i>Local wisdom museum project</i>
<i>The learning activities</i>	Very high	Very high	Very high
<i>The trainers</i>	Very high	Very high	Very high
<i>The project location</i>	Very high	Very high	Very high
<i>Benefits of the participant</i>	Very high	High	High
<i>Benefits of the community</i>	High	Very high	High
<i>Impact to the community</i>	Moderate	Moderate	Moderate

The results of the interview on their adaptation of learning found that most of them could adapt their knowledge they had learned into their daily lives as the example of speech as follows:

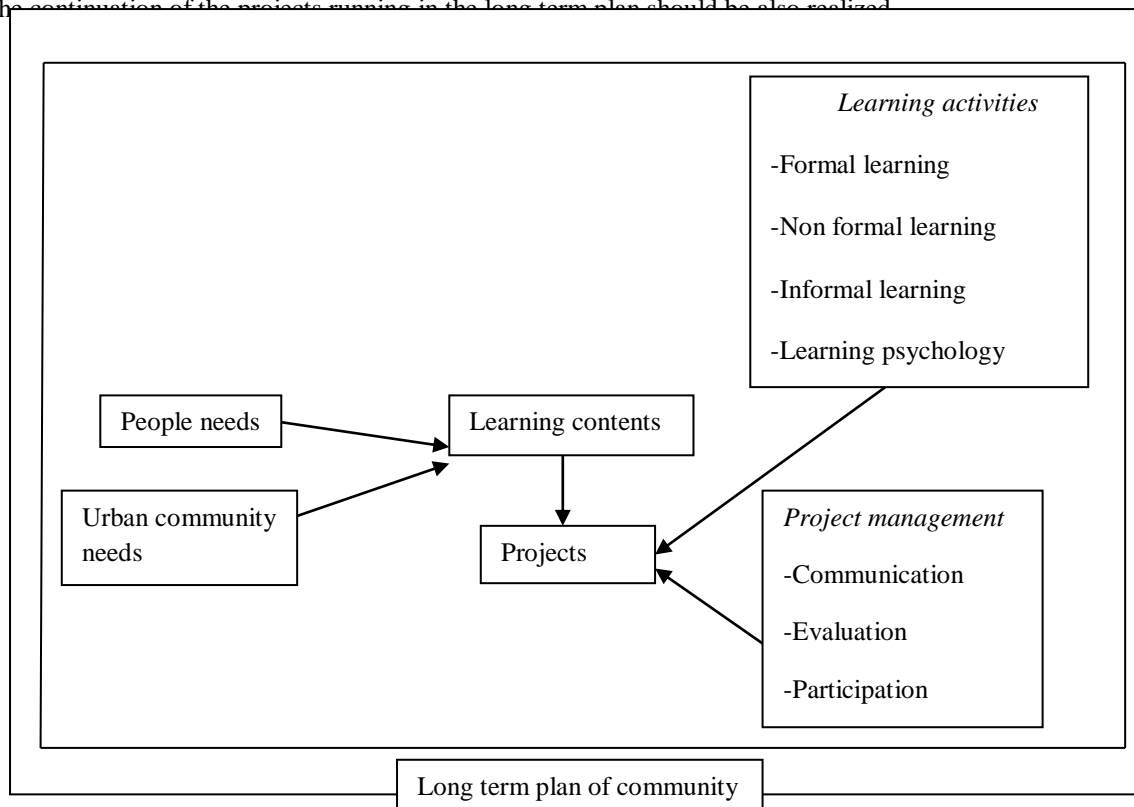
“I think this activity is very useful for me in order to stimulating my hygienic and promote my health. I have learned how to take pills and select healthy food as well as easy exercises.”

“This activity makes me know my neighbors and learn to recognize on benefit sharing for my community.”

“The museum will support our local economics and I also appreciate to our local wisdoms and prolong the wisdoms by telling to my younger generation.”

The findings were critically reflected based on lifelong learning concept and discussed to be guideline for urban community development as follows:

- Understanding on real contexts of community should be realized as well as principles of project operation.
- Effective communication and evaluation as well as participation are the key success of project.
- The project should be operated according to varieties of people needs, learning activities for multi aged people.
- Learning activities should be flexible design and consist of formal, non formal and informal learning.
- Learning psychology should be applied in learning activities, learning contents should be derived from learners' needs as well as community needs.
- The continuation of the projects running in the long term plan should be also realized.



Picture 2: Guideline for urban community development

CONCLUSIONS

Although, the focusing on real needs of the people and blended with lifelong learning concept but the results from the projects remain unclear impact to the communities. Thus the lack of understanding on the importance of participation in their communities might be due to their education or individual attitudes. Most of them are merchants, they have no times to pay attention to the activities in their communities whereas aging people prefer joining the activities but their physical health is in difficulties. The recommendations of the study were proposed that (1) Because of urban community contexts, the participation of people in the communities was essential and it should be sufficient for running the successful projects. (2) It should be possible to expand the projects to be long term projects for studying on their learning impact to the communities' sustainable development. This study was concluded that the development of lifelong learning projects in urban contexts (Bangkok) depended on (1) learning needs (2) learning styles (3) participation of people and (4) living environments which should be identified from results on community education based on sustainable community development.

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Religious Education in North Cyprus

Ali DAYIOĞLU

Department of International Relations

European University of Lefke, North Cyprus

aldayfen@hotmail.com

ABSTRACT

Religious education is one of the most debated issues especially in the context of primary and secondary education. This is mainly because in many countries the content of religious education is set by the state and may not reflect the ideal religious education. This issue became controversial in North Cyprus especially after 2009 as a result of three very important developments: 1) Opening of the Qur'an courses in the summer of 2009; 2) Making "Religious Culture and Morality" courses compulsory as of the 2009-2010 school year; 3) The opening of Hala Sultan Divinity College in the 2012-2013 school year.

This paper aims to discuss religious education in North Cyprus especially after 2009 by taking into consideration these developments. In this context, after describing the process in which the Qur'an courses and the Hala Sultan Divinity College and also the compulsory religious courses were initiated, reactions of the Turkish Cypriot public and the reasons for these reactions will be explained.

Keywords: Religious Education, North Cyprus, Qur'an Courses, Religious Culture and Morality Courses, Hala Sultan Divinity College.

INTRODUCTION

Following Turkey's military intervention in 1974, efforts were made to create an ethnically and religiously homogenous Turkish or Turkish Cypriot nation-state in North Cyprus. To this end, the north of the island, where mostly Greek Cypriots lived until 1974, was mostly Turkified with Turkish Cypriots migrating from the south and Turkish immigrants who came or were encouraged to come from Turkey (Dayioğlu, 2014). Apart from Turkification, attempts were made to show or strengthen the Islamic side of the north of the island. In this regard, two points came to the fore. The first one was that with the influence of Turkey, the Hanafi-Sunni belief was always in the dominant position, compared to other beliefs in the post-1974 period. The second point was that Islamic activities and investments were mostly carried out and provided by Turkey. Nevertheless, the situation varied according to who was in power in Turkey.

The advent of the Justice and Development Party (*Adalet ve Kalkınma Partisi-AKP*) to power in Turkey in 2002 constitutes a turning point not only for Turkey's but also for North Cyprus's economic, social, political and cultural life. One of the most important consequences of the AKP's rule in Turkey turned out to be the strengthening of the dominant religious doctrine; the Hanafi-Sunni belief. Given the political and financial dependence of the Turkish Republic of Northern Cyprus (TRNC) on Turkey, an increase has been observed in the Hanafi-Sunni based Islamic activities mainly in the field of education. This is seen especially after the centre-right National Unity Party (*Ulusal Birlik Partisi-UBP*) came to power in North Cyprus in 2009. Among these activities, opening of the Qur'an courses in the summer of 2009; making "Religious Culture and Morality" courses compulsory as of the 2009-2010 school year; and the opening of Hala Sultan Divinity College in the 2012-2013 school year were striking.

1) Opening of the Qur'an Courses

Qur'an courses are one of the divisive issues regarding the religious education in North Cyprus. This is because except for the Alevis, people who were originally from Turkey to settle down, or were encouraged to settle in Cyprus after 1974, are generally conservative and demanded these courses, but the Turkish Cypriots who have a secular nature were mostly against the courses. Turkish Cypriots saw these courses as reactionary activities that posed a threat to the Turkish Cypriot community's secular nature. Despite the objections posed by the Turkish Cypriot public, these courses were either permitted or banned consecutively depending on the ruling political party in Turkey.

When the AKP came to power in 2002, organising Qur'an courses in North Cyprus was forbidden due to the 28 February 1997 decisions of the National Security Council of Turkey. Yet, the courses were provided in some villages, but the fact that it was illegal led to police raids of these locations. After the AKP came to power, courses were re-opened in 2004 in some villages inhabited by Turkish immigrants with the help of the Religious Affairs Counsellor of the Turkish Embassy. Almost all of the non-governmental organisations (NGO) and trade unions, and the left wing parties in North Cyprus reacted strongly against this decision. As a result of these reactions, the Turkish government was compelled to step back and it did not insist on reopening the courses. This was because in 2004, Annan Plan which had been drawn up to find a permanent solution in Cyprus was put to a referendum. As the Turkish government backed the plan and showed willingness to solve the Cyprus problem, it did not want to incur any further reaction from the Turkish Cypriots.

The turning point in this issue occurred in 2009, when the UBP came to power. The UBP government declared that the hours dedicated to the "religious culture and morality" course in schools was insufficient. Therefore, a course on religion, to be administered at public secondary and high schools and supervised by the Ministry of Education was required. Also, the courses would be given under the title "Religious Education Courses", were religious culture and morality courses, not Qur'an courses as alleged. In addition, it was announced by the Ministry that the courses would be organized five days a week for one month in the summer, and that students aged 10-18 could attend the classes half a day (Günalp, 2009).

The teachers' trade unions, most of the non-governmental organisations, Alevi associations and left wing parties in North Cyprus reacted strongly against the opening of these courses. They considered the attempts to open these courses as the new government's subservience to Turkey, and as an extension of the attempt of the Turkish government to bring a model of Turkish education to North Cyprus. Further evidence to this claim was that the majority of the teachers were brought from Turkey for these courses. Despite the criticism, the UBP government did not back down on the issue and the courses started in August 2009 mainly in primary schools. Teachers' trade unions reacted greatly to the opening of the courses and prevented the Qur'an courses in the schools. Many NGO's supported these actions. The teachers' trade unions went further and demanded from the Attorney General to conduct investigation about these Qur'an courses, they have described these courses as illegal and accused the government use religion in politics (Havadis, 2009). Upon these reactions, the government declared that the courses were not on Qur'an but on religion and morality (Yenidüzen, 2009).

Despite intense criticisms, courses continued in the following years. In 2010, Ministry of Education declared that courses would be held half day in July and they would be open to the students in the 10-18 age range, who were willing to attend. The Ministry further announced that these courses would take place at secondary and high schools in the five districts of Northern Cyprus. The Ministry reiterated that these courses stemmed from necessity and that failing to grant permission would open the way for students to go to Turkey as in previous years, in which case their supervision would be impossible.

In the summer of 2011, these courses on religion were given five days a week; three days at schools and two days in mosques. Religion teachers rather than imams taught the applied courses at mosques. Courses continued in 2012. However, public protests continued against the courses, with the argument that these state-sponsored classes perpetuated the Hanafi-Sunni doctrine and therefore violated the principle of laicism. In 2013, officials of the Ministry of National Education in North Cyprus described the course as a three-stage religious theoretical and practical education that was being given in 22 schools and mosques under the title, "Summer Term Religion Course". During stage one, children received education for four days at school and one day at the mosque; during stage two, they spent two days at school and three days at the mosque; and during the third and final stage, they had one day at school and four days at the mosque. Officials noted that the education given in these courses was under the Ministry's control. Officials also stated that the Ministry had given permission for the practical part of the course, conducted in mosques, to be under the control of the Directorate of Religious Affairs (*Din İşleri Başkanlığı*). The Cyprus Turkish Teachers' Trade Union (*Kıbrıs Türk Öğretmenler Sendikası-KTÖS*) officials claimed that despite the Ministry's claim of control, courses were also given at *tariqa*-controlled mosques and other locations (Çağda, 2013). On the other hand, even though the age limit for attending the courses was set at 10, it appeared in the press that the majority of the attendees comprised of children between

the ages of 5 and 10 (Konuralp, 2013). Reactions against the courses continued in the following years as they were mostly held in mosques instead of schools (Menteş, 2015). On the other hand, families that send their children to these courses reported that they faced strong public criticism, particularly from local teachers (U. S. Department of State, 2013). As a result of these reactions, some families that wished to give their children religious and Qur'an education applied to the Directorate of Religious Affairs to send their children to summer courses in Turkey.

In 2016 a new debate started regarding the courses given only in mosques, without the permission of the Ministry of Education (Yenidüzen, 25 August 2016). While the Minister of Education asserted that it was illegal to conduct classes outside its purview, these courses were organised by the Directorate of Religious Affairs and hence outside the Ministry's control. Following the summer holiday, schools reopened but as the Qur'an courses continued in the mosques the issue came to the agenda once again. While Minister of Education said that he was unaware of such courses (Özdağ, 2016), Cyprus Turkish Teachers' Trade Union made a call for banning children's attendance at these courses (Kıbrıs, 2016). Discussions on the subject continued throughout the year and also in 2017.

As for the students that attended the courses, it was announced by the Directorate of Religious Affairs in July 2009 that there had been 2,000 applications to attend the courses, the majority of whom were from families that had migrated to North Cyprus from Turkey (Moral, 2009). While the number of students attending these courses remained at around 2,000 between 2009 and 2013, in 2014 this figure rose to 4,500 and to 5,000 in 2015 (Alan, 2015). There is no any data made available on the number of participants in 2016 and 2017.

2) Making Religious Culture and Morality Courses Compulsory as of the 2009-2010 School Year

Religion courses had been compulsory at primary and secondary schools until 2005. It was after 2005 that the centre-left Republican Turkish Party-United Forces (*Cumhuriyetçi Türk Partisi-Birleşik Güçler*, CTP-BG) came to power and declared elective courses at secondary schools in the TRNC, leaving the decision to the administration's discretion. Taking this decision into consideration, many schools started to exclude the course from their curriculum as of the 2005-2006 school year.

But, after the UBP came to power in 2009, the course was made compulsory from fourth to eighth grade but this drew a reaction from the majority of the Turkish Cypriots and the Alevis. The most important reason for the reaction was that as with the "Religious Education Courses", the content of the religious culture and morality course was mostly devoted to the Hanafi-Sunni doctrine rather than a general knowledge of religion and morality. This meant violating the freedom of religion and conscience of the sections of society not belonging to the Hanafi-Sunni faith, notably the Alevis. In fact, the decision in the *Hasan and Eylem Zengin v. Turkey* case that was concluded on 9 October 2007 at the European Court of Human Rights (ECtHR) states that making the religious culture and morality course (which was mainly based on teaching the Sunni Islam doctrine) compulsory in Turkey was a violation of the freedom of religion and conscience (European Court of Human Rights, 2007). On 16 September 2014, a similar decision was given by the ECtHR in the *Mansur Yalçın and Others v. Turkey* case (European Court of Human Rights, 2014).

The new religious culture and morality books introduced in the 2016-2017 academic year once again fuelled the controversy around the religious culture and morality courses. In addition to the books being mainly based on the Hanafi-Sunni teachings, the fact that they included abstract and incomprehensible concepts such as "spirits, angels, djinnis," etc. for children was the main point of this criticism (Batman, 2016).

3) The Opening of Hala Sultan Divinity College in the 2012-2013 School Year

The idea that it was necessary to open a divinity high school in Cyprus was first brought forward in 1956, when the Democratic Party (*Demokrat Parti-DP*) was in power in Turkey (Dayıoğlu, 2012). In 1980s, a divinity high school was opened in North Cyprus, but after its first graduates it was closed down (Suiçmez, 2016). The issue was raised again in 2011. Two months after the 2011-2012 school year commenced, in November 2011, the divinity department of Haspolat Vocational School was opened and students were admitted to 9th grade. Even though the Prime Ministry and Ministry of Education claimed that this department was opened upon requests

made by the public, opposition parties, teachers' unions and many NGOs claimed that the department was opened upon the pressures exerted by the government of Turkey. The strongest reaction to the opening of the department came from the Cyprus Turkish Secondary Education Teachers' Union (*Kıbrıs Türk Orta Eğitim Öğretmenler Sendikası*, KTOEÖS) which declared an indefinite strike at the school in question (Havadis, 2011).

The most important development was the opening of Hala Sultan Divinity College in the 2012-2013 school year. This issue of opening the College was first initiated in accordance with the decision of TRNC Council of Ministers on 25 January 2012. This decision was on the lease of 200 acres of *Waqf* (Evkaf) Foundation land, in Nicosia's Haspolat area, to the Cyprus Science, Ethics and Social Assistance Foundation (*Kıbrıs İlim, Ahlak ve Sosyal Yardımlaşma Vakfı*-KİSAV) for 30 years at a yearly cost of 100 TL (approximately €24) with the purpose of building an "Education Complex". In accordingly, a new building for accommodation, halls for social gatherings and sports events, religious facilities and a large mosque would be constructed as part of the school project but the majority of the society opposed the project on the ground that what was intended was not an "Education Complex" but a *Küllîye*. They claimed that the Turkish government was behind KİSAV, and that the project was approved under pressure from the Turkish government. Despite the reactions, the UBP government announced that the project would go ahead and that the entrance exam for the College would be administered on 23 June 2012.

The issue was brought to the TRNC Parliament after the accusations on the improper way to lease the land of *Waqf* Foundation. As a result, an investigation committee was formed, the Attorney General's Office and the Judicial Office were consulted. However, in its judgment dated 15 June 2012, the Judicial Office did not address the issue of the land lease. Instead, it declared that under the current laws and directives, a private divinity branch or college, i.e., one not regulated by the state, could not be opened in the TRNC. Moreover, it invited the government to put an end to its efforts to open the college as the necessary laws were not in place, and to prioritize making the necessary laws if there is a necessity to open a divinity college or any other type of school that was not mentioned in the law (Güler, 2012; Kişi, 2012). The government ignored the judgment and on 23 June, before the investigation committee finalized its work, the College entrance exam was administered. Furthermore, it was announced that the divinity department of the Haspolat Vocational High School would operate under the Divinity College.

Following the exam, the groundbreaking ceremony for the college was held on 20 July 2012. As the building could not be completed in time for the 2012-2013 academic year, the Hala Sultan Divinity College opened in September 2012 in another building that belonged to a Turkey-based college. The teachers for the courses on religion were appointed from Turkey (Menteş, 2012). It was announced that the Divinity College, which started education with students from the Divinity Department of Haspolat Vocational High School, would continue education here until its own building was completed.

On 24 January 2013, "Hala Sultan TOBB Divinity College Protocol" was signed in Ankara. With the protocol, the Union of Chambers and Commodity Exchanges of Turkey (*Türkiye Odalar ve Borsalar Birliği*-TOBB) undertook the construction of the so-called "education complex". After the ground-breaking ceremony for the College was held on 20 July 2012, the College was officially opened on 27 September 2013. On the very day, the construction of buildings for additional facilities started, including dormitories for male and female students along with the Hala Sultan Mosque. The Ministry of Education authorities announced that as of September 2013 the College had around 400 students, and that with the completion of the additional buildings a total of 1,200 students would receive education there (Havadis, 2013).

The vast majority of the relatively secular Turkish Cypriot society opposed the opening of the Divinity College. They believed that the opening of the College was part of Turkey's efforts to establish a more religious conservative mentality in Cyprus. As a part of these reactions, in January 2014, KTÖS and KTOEÖS filed a lawsuit against the Ministry of Education over the Hala Sultan Divinity College and *Küllîye* project. They demanded to close down the College to terminate religion-based education (Kıbrıs, 2014).

The Supreme Administrative Court announced its decision on 17 June 2016, and stated that the Vocational Technical Education Department, in which the Divinity College was the subject, had the authority to open

schools to provide vocational education, but that the College has failed to do so. Based on this decision, the Court stated that the decision to open the College had been rescinded as its establishment was unauthorised. Expressing their delight with the Court's decision, KTÖS and KTOEÖS argued that curriculum had to be changed and that the school should adopt the structure of the other colleges (Yenidüzen, 18 June 2016).

Following the Supreme Administrative Court's decision, the Council of Ministers decided on 28 July 2016 that the Divinity College will continue its educational activities under the General Secondary Education Department instead of the Vocational Technical Education Department (Yenidüzen, 12 August 2016). As a result of this decision, the issue was once again taken to court by KTOEÖS and the school's closure was requested on the ground that it was against the Constitution. The case was closely followed by circles who were against the closure of the College, and prior to each hearing protests were carried out outside the court against the attempt and KTOEÖS to close down the school. The protestors carried banners saying "Don't Touch My School" and "Right to Education Can't Be Denied" (Özbil, 2016; Uysal, 2016). As of August 2017 the lawsuit regarding the Divinity College is pending.

4) Other Developments

Further developments are seen in the field of education for the period after 2009. For example, for the 2009-2010 academic year, for the first time Turkey's Higher Education Council (*Yükseköğretim Kurulu-YÖK*) included divinity faculties in the quotas allocated to TRNC students in Turkish universities. Moreover, three of 13 PhD quotas were allocated to the departments of "Religious Education", "Religious Psychology" and "History of Religions" (Sonay, 2009). A more important development was the opening of the Faculty of Theology at Near East University (NEU) in September 2011. Thus, Faculty of Theology was opened in Cyprus for the first time. Also, in the 2013-2014 academic year, NEU opened a Religious Culture and Morality Education program for undergraduate students.

CONCLUSION

Opening of Qur'an courses, religious and morality courses and establishing a divinity college can be considered as progress in education and as measures to fulfil a human right. It is a fact that every parent has the right to demand an education system in their own religious and philosophical beliefs for their children. Indeed, some of the developments intend to fulfil requests of the society, especially Turkish migrants that for the most part known to be conservative. However, between 2009 and 2015 the state's initiation to open Qur'an courses and allocation of the state resources to these courses was not compatible with an understanding of a secular state. The courses were held in public schools and all of the students' needs, including transportation, were met from the state's budget. More importantly, the courses mainly covered the Hanafi-Sunni doctrine and its practices and the opportunities, provided by the state were denied to other faith holders, particularly to Alevis. As mentioned above, in 2016 a new problem has emerged regarding the religion courses. They started to be delivered only in mosques without the permission of the Ministry of Education. Since then, these courses are not under the control of the Ministry.

Furthermore, a significant number of Turkish Cypriots considered these developments as an attempt of imposing a Sunni Islamic tradition on Turkish Cypriots. So, the best way to meet the expectations and demands of people for religious education of children and eliminate the doubts of the secular circles is to take the decisions of the ECtHR seriously. In the *Hasan and Eylem Zengin v. Turkey* case, for example, the Court stated that countries that were party to the European Convention on Human Rights (ECHR) could not design the curriculum at schools in such a way so as to ignore parents' religious and philosophical beliefs, and aim to force students to adopt a specific doctrine. The ECtHR asserted that it was necessary to structure education so as to exclude ideologies, and underlined the necessity for course content to be presented in an objective, critical and pluralistic way. Also, the Court stated that in order to provide full assurance on the issue, people who do not want to take the course have to be exempted in such a way that they do not have to declare their faith and beliefs or they have to be offered other methods as an alternative (European Court of Human Rights, 2007). In the case of summer courses, as a requirement of the principle of laicism, the state should be neutral for all beliefs. Therefore, it is not a duty of the state to sponsor summer courses. The only responsibility of the state is to control these courses.

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Repositioning Technical Education a Panacea to Solving Globalization Challenges in Construction Sector

Lekan AMUSAN,

*Building Technology Department,
College of Science and Technology Covenant
University PMB 1023,
Cannanland.Ogun State, Nigeria.
lekan.amusan@covenantuniversity.edu.ng*

Dele OWOLABI,

*Building Technology Department,
College of Science and Technology
Covenant University PMB 1023,
Cannanland.Ogun State, Nigeria.*

Patience TUNJI-OLAYENI,

*Building Technology Department,
College of Science and Technology
Covenant University PMB 1023,
Cannanland.Ogun State, Nigeria.*

Raphael OJELABI,

*Building Technology Department,
College of Science and Technology
Covenant University PMB 1023,
Cannanland.Ogun State, Nigeria.*

Ignatious OMUH,

*Building Technology Department,
College of Science and Technology
Covenant University PMB 1023,
Cannanland.Ogun State, Nigeria.*

Ayodeji OGUNDE,

*Building Technology Department,
College of Science and Technology
Covenant University PMB 1023,
Cannanland.Ogun State, Nigeria.*

Opeyemi JOSHUA

*Building Technology Department,
College of Science and Technology
Covenant University PMB 1023,
Cannanland.Ogun State, Nigeria.*

ABSTRACT

Globalization has created a wind of change that has eroded landscapes of economy of nations of the world. Globalization era has led to emergence of new engineering ideology, concepts, tools, machines as well as systems and procedure. In some places, private economy drive has been left to private sector while government provides policy and ideology formulation interphase. Technical education is one of the areas affected by this phenomenon and in turn, the construction sector, thus the need for its repositioning towards quality delivery. Technology education is at the forefront of providing landscape training towards individuals being produced by the sector having thorough understanding of their place in contributing to the economic growth of construction sector. Thus, technical education need to be repositioned further to enable more relevance of its products to their environment. Therefore, the study considered repositioning technical education towards solving globalization challenges in building sector. In order to achieve this, sampling technique was used in this study, 120 structured questionnaire, designed in Likert scale form, on scale 1 to 5, was used for the study. It was discovered that repositioning the technical education in developing economy like Nigeria would involve taking the following position; overviewing of the current curriculum, running technical-based education, introducing cutting edge equipment and tools, technology transfer, technical symbiotic relations among economic drivers, adjustment of government policy, training and retraining issue, preventing discriminatory tendencies between technical based vocations and non-technical based jobs, emphasizing technical competence and partnership between education institutions and industry. The study concluded by recommending the following as a solution: infrastructure, research, adequate funding, technology incubation center and training/retraining for the practitioners.

Key word: Globalization, Technology, Transfer, Panacea, Challenge

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1.INTRODUCTION

Technical education is important in the developmental circle of any country aspiring to have technological advancement. Technological education in this parlance refers to educational knowledge garnered from Polytechnic, University, College of Education and Vocational centers. The aim of technological education is to provide platforms for self empowerment in the quest for environmental development. However, technological education starts from the colleges up to the Tertiary level, the curriculum of various technology programs is often design in line with expectation of the society. The fact that technological education is facing a lot of challenges in developing countries can not be ignored, most of the artisans being turned out are more or less half baked thus the need to revisit the training module of institutional mould that turned them out thus the need for repositioning of the technical institution training pedagogy. NERDC (2004) Rustom, R.N and Amer (2006) and Agunloye (2005), studied problems facing technological education in Nigeria as ranging from faulty academic curriculum, old infrastructure, absence of technical competent instructors, poor rating of graduates among others. It to this end that this paper is about repositioning skill training institution towards quality work delivery in construction works in Nigeria.

1. Understanding Repositioning Concept

Repositioning is a concept that refers to the constant changing of curriculum in order to meet the immediate need of society. The idea is that, program must not only covers an existing field of study, technological innovations but as well be en-compassing, it should be able to accommodate emerging growing fields of knowledge. Repositioning enables programs to be in tune with industry needs. Therefore repositioning process enables vocation industrial education flexible to societal demands. Vocational education is defined as the planned instruction intended for developing basic vocational skill, technical manipulative skill, technical knowledge and relational occupational information for the purpose of training young person for basic entry work exposure to the world of industry Bailyn, and Etzion (2006):

The need for repositioning Technical Skill Education. Technological education is backbone of development of a nation, therefore there must be constant validation and revalidation of concept that set up the running of the program. In Guisaini (1995) in Nigerian National Policy on Education (NPE) the fourth edition view technical education as a body of knowledge that seeks skill acquisition, theoretical skill and knowledge application. Boutzev (1983), describe technical skill education as pedagogical compendium of knowledge that empowers man technical to leave an ecological footprint on landscape of life. Guisaini (1995) approach technical skill education upgrading from the perspective of modifying process that empower society with requisite knowledge of proving solution to seemingly societal unsolvable socio-economic problem. However, in lieu of recent events in Nigerian construction sectors whereby some companies prefer engaging foreigners at vocational work like tilling, plastering painting at expense of local artisan called for concerned. Some of the companies were of the opinion that Nigerian skilled artisan did not possess an expert knowledge as compared to the Togolese artisans and those from Republic of Benin. Is it that the training module is faulty or defective or need revision?.

2.METHDOLOGY

2.1.RESEARCH METHODOLOGY

Population of Study and Area of Study

The population of study is trainers, lecturer, instructors and trainees of technical and vocational institutions. The problem is the remodulation of technical skill acquisition institute in Nigerian construction sector using Lagos State as case study.

2.1.1. Sampling Method Samples are picked at random using Random sampling method with a sample of 100 students. The sampling was done from population frame s trainers, lecturer, instructors and trainees of technical and vocational institutions.

2.1.2. Sample size: Sample size of 100 students s trainers, lecturer, instructors and trainees of technical and vocational institutions of technical based courses and program was adopted in the study

2.1.3. Data Collection Instrument: A structured questionnaire in Likert scale was administered on student of technical based discipline, One hundred (100) questionnaires was administered on the students to harvest their perspective. The responses were further collated, analyzed with SPSS software, processed with Mean Item 4.1.5

Methods of Data Analysis: Mean item scores was used in processing the summarized questionnaire. Simple percentages was used to present percentage composition of respondents on factors responsible for deplorable state of technical and skill training institute, remodulation strategy. Mean score index factor was calculated for the variables. Data were presented in tables and other modes. The questionnaire was calibrated on a scale 1 to 5, with 1 representing “strongly disagree (SD)” 2 – being disagree (D) 3 – being neither agree nor disagree (N), 5- being strongly agree (SA).

Agreement index of the respondents was generated using the relation $M.A.I = 5S.A + 4A + 3S.D + 2D + 1N/5(S.A + A + S.D + D + N)$

$$M.A.I = \frac{1}{N} \left(\sum A_{ij} \right) \quad \text{where } M.A.I = \text{Mean Agreement Index} \quad A = \text{Agreement variable} \quad i = \text{Lower boundary, } j = \text{Upper boundary}$$

a. N = Frequency of Variable Σ = Summation Notation.

5.10 SCOPE AND LIMITATION OF THE STUDY.

The study and the data used are limited to the opinion sampling of trainers at technical skill training institute and restricted to Lagos State.

6.0 RESULTS AND DISCUSSION

In this section parameters considered under the re-modulation concept was presented. The parameters revolved around Repositioning strategy, Benchmarking techniques and procedures and Establishing Calibrated Local Program

Table 1 Factor Responsible for Deplorable State of Technical and Skill Training Institution

S/N	Variables	Mean Score	Ranking
1	Poor funding of schools	0.90	1 st
2	Insufficient laboratory for practical works	0.80	3 rd
3	Lack of well-equipped laboratory	0.89	2 nd
4	Youth not interested in vocation education	0.76	4 th
5	Trainers non challant attitude	0.75	5 th
6	Non supervision of trainers by superior officers	0.68	7 th
7	Curricula has no bearing with practical	0.64	8 th
8	Inadequate supervision of students practical work	0.72	6 th
9	Lack of adequate Technical know-how by tutors	0.55	10 th
10	Teachers not motivated to stay long on practical.	0.60	9 th

Source: Amusan et al.,(2016)

In Table 1 above poor funding of that institution by the stakeholder was ranked 1st, with mean index value 0.90 virtually there is no field of science training whereby money is needed, poor funding is the bane of technological development in Nigeria. This is adjudged the strongest of the factors. Followed closely is lack of well equipped laboratory with mean index value 0.89. It huge fund to equip a laboratory, therefore for a well equipped laboratory. Insufficient laboratory for practical works was ranked 3rd with mean index value of 0.80. Also, Youth not interested in vocation education with mean index value of 0.76 was ranked 4th, while non challant attitude of the trainers/teachers was ranked 5th with mean index value 0.76. Against the background of the outcome of the analysis, the problems need to be countered thus the need to redesign the modules of the technical education. To this end therefore, the repositioning strategy was presented in Tables 2,3 and 4.

7.0 Repositioning Strategy.

Strategy to be adopted in repositioning skill acquisition and training institutions is packaged under the following: developing technical skill acquisition education, benchmarking techniques and procedures, establishing calibrated local programs. The detail is presented in Tables 2,3 and 4

Table 2: Developing Technical Skill Acquisition Education

S/N	Variables	Mean Score	Ranking
1	Training to be given by competent individual	0.98	1 st
2	Automatic machine deployment	0.79	5 th
3	The skilled workshop personnel to be given extensive training	0.87	3 rd
4	Provision of preparatory instruction in developing basic manipulative skills.	0.85	4 th
5	Using questionnaire to determine local needs.	0.74	6 th
6	Setting up Special Classes: Evening, Part-time classes and others.	0.97	2 nd

Source: Amusan et al.,(2016)

In Table 2, strategies that could be applied in developing skill acquisition institutions were articulated, this includes but not limited to the following factors (Training to be given by competent individual, Training of students should be given to a qualified individual who has had foremanship or instructor's training courses. The need to train the trainer in industry is increasingly becoming important, most artisans need to be trained and retrained since they handles most artisans work on site, therefore, the skilled artisans' instructor requires extensive knowledge and skill) and Automatic machine deployment.

The factors further includes: The skilled workshop personnel to be given extensive training (Twentieth century technological industrialist often need services of trained skilled worker, semiskilled workers, foremen, engineers, and top level century). Also, Provision of preparatory instruction in developing basic manipulative skills, Provision of preparatory instruction in developing basic manipulative skills, Using questionnaire to determine local needs and Setting up Special Classes: Evening, Part-time classes and others.

Moreover, based on the analysis of the responses; Training to be given by competent individual has mean index of 0.98 and was ranked 1st, Setting up Special Classes: Evening, Part-time classes and others with mean index of 0.97 was ranked 2nd. The skilled workshop personnel to be given extensive training scored mean index of 0.87 and ranked 3rd. Also, Provision of preparatory instruction in developing basic manipulative skills with mean index 0.85 was ranked 4th while Automatic machine deployment with index 0.79 and Using questionnaire to determine local needs with mean index 0.74 were ranked 5th and 6th respectively.

Table 3 Benchmarking Techniques and Procedures

1	VARIABLES	MEAN SCORE	RANKING
	Developing new teaching methods	0.94	2 nd
2	Organizing Instructional Program	0.96	1 st
3	Familiarization of Instructors with Instructional method	0.94	2 nd
4	Testing Student and Evaluating training effectiveness.	0.90	3 rd
5	Testing of Equipment	0.82	5 th
6	Teachers to have well established plan for appraising students.	0.83	4 th
7	Extensive use of teaching materials.	0.80	6 th

Source: Amusan et al.,(2016)

Table 3 above illustrates the techniques and procedure that could be adopted in repositioning the institutions offering technical education who are to train skilled artisans and professionals. Organizing instructional program was ranked first with Index value of 0.96. The reason for this preference lies in the fact that, instruction given in technical training institute and colleges is given for the purpose of empowering the students in order to develop their skill, knowledge, attitude, perception and emotion required to perform the task required. Therefore, there should be a robust program that should be in place to provide quality to the information being given out to trainees. The program would as well provide means of monitoring performance of students and trainers.

Moreover, familiarization of instructors with instructional method is another technique that could be used as one of the bench marking strategies for repositioning . This factor was ranked 2nd with mean index value of 0.94. Instructors need to be familiar with instruction methods, method varies from one place to another, methods as design by the management should have been designed in such a way that would have include variety and provide rich content, it is the responsibility of trainers to adopted the organized instruction method. One of the reasons behind diverse standards as found in practice in most of the parts of the country is haphazard techniques being used by trainer in the name of innovation which most often don't produce right results in trainee.

Also, testing student and evaluating training effectiveness was ranked 3rd with mean index value 0.90. Test is an education tool that could be used to evaluate the degree of assimilation of subject matter being taught. It evaluate level of understanding of trainee or students and by the way measures the effectiveness of the teaching process and method applied. Therefore, in order to bring out the best in students and improve trainers' performance there should be timely evaluation of training effectiveness at training institutions. (Sheridan, 2004).

Also, teacher should as well have a method of assessing students' performance as training progresses ,this factor was rated as 4th with mean index value . Testing of teaching equipment and extensive use of teaching material were ranked 5th and 6th respectively.

Table 4 Establishing Calibrated Local Program 1

Source: Amusan et al.,(2016)

Another repositioning strategy is presented in Table 4 above. Planning local program to accommodate artisan, semi-skilled and skilled labor at the grass root was advocated. This was ranked first, followed closely with provision of facilities and equipment for the program which was scored 0.87 and ranked 2nd . Also, in establishing local programme,resources and personnel should be set aside, for the smooth running of the institute. One of the reasons for poor training output sometimes is poor funding. Setting up special skill acquisition plan and program for teachers and trainers for adults artisan can as well help improve output of the institute in term of on job performance. The factor was ranked 4th . Creating area vocational education program was ranked 5th with index value of 0.75 while advocacy in term of supervisor possessing qualification comparable to higher institutional supervisor was ranked 5th with index value 0.75.

Table 5.Roles of stakeholders in meeting the demands of global economy.

S/N	VARIABLES	MEAN SCORE	RANKING
1	Lecturers to develop intimate relationship with students and curriculum	0.70	
2	Lecturers should be adequately skilling ICT knowledge and be up-to-date on global economy information	0.85	3 rd
3	New teaching pedagogy should be adopted in line with international global standard.	0.88	1 st
4	Lecturer and policy makers should be involved in curriculum planning.	0.86	2 nd
5	Establishing an inclusive and collaborative feed back mechanism on formulated policies and procedures.	0.85	3 rd

Source: Amusan et al.,(2016)

Strategies that could be adopted is presented in Tables 5 presented, new teaching pedagogy should be adopted in line with international global standard is ranked 1st Lecturer and policy makers should be involved in curriculum planning ranked 2nd , the duo of Establishing an inclusive and collaborative feed back mechanism on formulated policies and procedures and Lecturers should be adequately skilled in ICT knowledge and be up-to-date on global economy information were ranked 3rd respectively. Lecturers to develop intimate relationship with students and curriculum was however ranked 4th .

New technical education paradigms are emerging, some developing construction economies like Malaysia and Singapore, have embraced certain construction and technical education pedagogy and it has transformed their technical sector dramatically. Inclusive and collaborative feedback is necessary on any policy that had been made, this would prevent the gap that usually exist between policy makers and the populace. Also, including the players in the act of policy drafting and implementation would guarantee success in the policy application.

Moreover, lecturer and students should be adequately empowered with new technological education in their knowledge impartation and replication, this is one of the ways to keep in touch with current global practice in technical education.

Table 6: Means of Improving Technological Education

1	Organizing conferences and seminar on enlightment campaign		
2	Provision of facilities and equipment for local program	0.87	2 nd
3	Relevant department to be responsible for maintain and repair of institutions' machines	0.75	5 th
4	Improving people perception about technological educations.	0.86	3 rd
5	Granting Institute Credit for trade and Industrial Experience	0.85	4 th
6	Setting up special ICT acquisition plan and program for teachers and trainers for adults artisan	0.85	4 th
7	Prompt provision of consumable materials for practical based on international standards.	0.75	5 th

Source: Amusan et al.,(2016)

Means of Improving Technological Education in this study is as presented in Table 6. Organizing conferences and seminar on enlightenment campaign is ranked 1st, followed closely by Provision of facilities and equipment for local program which is ranked 2nd, Improving people perception about technological educations ranked 3rd, Granting Institute Credit for trade and Industrial Experience and Setting up special ICT acquisition plan and program for teachers and trainers for adults artisan were ranked 4th respectively. Relevant department to be responsible for maintain and repair of institutions' machines and Prompt provision of consumable materials for practical based on international standards.

international standards were also ranked 5th respectively.

CONCLUSION.

The repositioning strategy is as presented, some of them include: , Establishing local training programs, Developing Technical Skill Acquisition Education Planning of the local program, Planning local program to accommodate artisan, semi-skilled and skilled labor at the grass root Setting up special skill acquisition program for teachers of adult classes, Instruction given in technical training institute and colleges is given for the purpose of empowering the students in order to develop their skill, knowledge, attitude, perception and emotion required to perform the task required. Therefore, there should be a robust program that should be in place to provide quality to the information being given out to trainees. The program would as well provide means of monitoring performance of students and trainers.

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Role of Tablet Technology Towards Children with Autism Learning Development: A Study on the Acceptance of Special Education Teachers

Muhamad Fairus KAMARUZAMAN

*Formgiving Design Research Group,
Faculty of Art & Design, Universiti Teknologi MARA,
40450 Shah Alam, Selangor, Malaysia
muhamadfairus@salam.uitm.edu.my*

Harrinni Md NOOR

*Faculty of Education, Universiti Teknologi MARA,
42300 Puncak Alam, Selangor, Malaysia
harrinni@salam.uitm.edu.my*

Mustaffa Halabi Haji AZAHARI

*Creative Visual Exchange Research Group,
Faculty of Art & Design, Universiti Teknologi MARA,
42300 Puncak Alam, Selangor, Malaysia
mustaffa@salam.uitm.edu.my*

ABSTRACT

Tablet technology is an eminent handheld interactive program device that has been trendy used these days among teachers, instructors and children. The state of the art indicates that tablet technology is competent in supporting learning and sustaining educational knowledge. Nevertheless, tablet technology centred learning are still limited in Malaysia. In this study, we investigate the acceptance of special education teachers towards the use of tablet technology in teaching and learning for children with autism. Besides that, we also analyse the instructional benefits of using the tablet technology in special educational school and autism centre especially in the classrooms. Five special education teachers and four autism experts from Klang Valley, Selangor, Malaysia participated in this research study. A tablet technology with a pre-installation of basic numeracy learning apps has been used as a medium to transport the education knowledge towards children with autism. Based on the interview and discussion with the special education teachers as well as autism experts, they believed that with the used of tablet technology the ability to assist not only children with autism, but to the teachers as well as instructors will meet the new expectations regarding the academic achievement and educational outcomes. Therefore, it is hoped with the used of tablet technology it will be able to nurture the learning development among children with autism and to improve their quality of life in future.

INTRODUCTION

Learning style or learning process refers to learning latest information, including plans and approaches that have been used in teaching and learning as preferred by children. Children with autism learn in different ways although there are many theories about cognitive learning and theory of mind (Hasnah Toran, 2013). According to Macizo, Soriano, and Paredes (2016) in their study stated that special need children would swiftly learn if they can use their preferred technique. Even though learning approach is vital, Nugrahani (2007) and Ungang (2008) stated the use of appropriates teaching and learning aids in educating are also essential. Hence, Hayes et al. (2010) and M. F. Kamaruzaman, Rahman, S.H.A., Abdullah, K.Z., Anwar, R. (2013) confer the significant of technology reform that may perhaps assist the teachers and instructors to delivers a modernistic teaching and learning approach for children with autism.

The use of technology for assisting children with autism is a comparatively new and emerging field, especially in Malaysia. The Ministry of Education (MOE), Malaysia is working closely with the Ministry of Communications and Multimedia, Malaysia to equip every school setting with technology know-how, internet access and virtual learning environment via 1BestariNet. It is the Malaysia Government wish to provide all children including children with special disability with equal access to quality education that form skilful,

knowledgeable and united Malaysian as one. Every child will learn how to continue acquiring knowledge throughout their lives and to be able to connect different pieces of knowledge. It is a hope that every child will gain control of essential cognitive skills by the aid of technology regardless of skill level. This is an area where the approach has historically fallen short, with children being less able than they should be in applying the academic knowledge.

Technology proficiency creates a predictable environment with consistency where every child may and can interact without worrying about the unpredictability of other individual interactions. It is extensively agreed that children with autism have a high interest in technology devices and an affinity for using them (Hourcade, Williams, Miller, Huebner, & Liang, 2013; M. F. Kamaruzaman, Nor, H.M., Azahari, M.H.H., 2016; Porayska-Pomsta et al., 2012; Wass & Porayska-Pomsta, 2013). They offer multisensory stimulation through touch and movement. According to M. F. Kamaruzaman, Nor, and Azahari (2016), N. M. Rani, Yusoff, and Kamaruzaman (2015) most children with autism who use technologies may influence them, and they find easy to use, enhance concentrate and sustain their attention in the educational activity.

Dealing with children with autism pose enormous challenges to both families and professionals at homes and also in schools. According to Bryant, Bryant, and Smith (2016), in challenge to unravel the answers to these enigma in this present world, the main concern bordering the teachers and other professionals in encounter the children with autism are behaviour, cognitive thinking, perceptive, sensitive and psychomotor necessitates in the classrooms is the use of assistive learning technology, the correct way to use it, where to get the content application and how to utilise the devices. Assistive learning technology is a derived from Information and Communication Technology (ICT) with the history linked to a computer technology reform.

ROLE OF TABLE TECHNOLOGY ON CHILDREN WITH AUTISM IN LEARNING DEVELOPMENT

Technology these days plays an essential part of peoples' lives, be it at home or work. It is the key to success in industries such as arts, education, trading, transportation and so forth. Since human beings carry on to become increasingly reliant on technology devices and gadgets, academic sectors are also fortunate to have teaching and learning mechanisms to enhance students' inclusive experience. Ever since there is an increasing interest in the academic research area particularly in designing interactive technologies based interventions for children with autism. This technology could be unique gallows for assisting and inspiring the special need education environment.

Advance in ICT has led to several innovative applications with various visual supports integrated and the design modelling on technology-based intervention for children with autism. It includes tablet technology which has been extensively described as an effective approach for nurturing children with autism abilities (M. F. Kamaruzaman, Nor, et al., 2016; Moore, Cheng, McGrath, & Powell, 2005). The crucial feature to build, design and practically plan an effective tablet technology intervention program is a thoroughly customise a solution that is strictly fit for the target users. At the most basic level, every child needs to be entirely literate and numerate. Understanding basic numeracy is essential for every children with autism. This will furnish them with fundamental life skills and enables them to perform well in society so that they can form value for themselves, their community, and the nation (M. F. Kamaruzaman, Azahari, M.H.H., 2014; M. F. Kamaruzaman, Noor, Hanapiah, & Azahari, 2016). According to Kulik (2003) and M. F. Kamaruzaman, Nor, et al. (2016), the usage of assistive learning technology has been found to be beneficial in the instruction of children with autism. Assistive learning technology can highlight essential matter, divide content into minor subjects' components and provide immediate feedback regarding response accuracy (DuPaul & Eckert, 1998; N. M. Rani, Rahman, & Kamaruzaman, 2015). In term of the technologies used for joint attention purposes, tablets and mobile applications are the most prevalent (Aresti-Bartolome & Garcia-Zapirain, 2014). It is the reasonably priced that makes the tablets and mobile applications auspicious compared to others joint attention technologies such as virtual reality and robot. The tablet and mobile applications can be used equivalence with other tools in the classroom such as visual cards, books and board games. However, the use of tablet technology as a learning aid in accelerating the special education sector here in Malaysia is still at the provisional stage.

Assistive learning technology refers to any mechanism devices whether it has been modified or customised that is used to increase and improve the cognitive learning capabilities of a child with a disability (Turnbull, Huerta, Stowe, Weldon, & Schrandt, 2009). It includes tablet devices, smartphone, and PDAs. This is because tablet, smartphone, and PDAs are flexible and portable. A handheld device is easily carried for on the go, and there is peer acceptance. Due to its reasonably priced that makes the tablets and mobile applications auspicious compared to others joint attention technologies such as virtual reality and robot. The tablet and mobile applications can be used equivalence with other tools in the classroom such as visual cards, books and board games. The touchscreen and layout are more accessible for children with autism; the sliding and tapping are easier than typing. Assistive learning technology allows for adaptability and motivation. Hence, it composes the visual images comprehensible and user-friendly by using computer graphic which captures and maintain children with autism attention.

Excessive research has been done on the use of tablet technology for children with autism. However it is beyond the state-of-the-art scope to determine the variable children with autism in Malaysia especially on its wisdom, diversity culture, religion and civilisation (Cheung & Slavin, 2013; Kulik, 2003; Toran, 2011). Many types of research have suggested that there may be differential effects for the effectiveness of the tablet technology based on the skill targeted and the age of the population (Murphy et al., 2002). Although there are more than 40 years of research on the use of technology and special education, access to technologies that are used to support children learning outcome changed remarkably with the 1997 re-authorisation of the Individuals with Disabilities in Education Act (IDEA). The amendment of IDEA 1997 (and subsequent re-authorisations of IDEA in 2004) required that all children with disabilities be considered for assistive learning technology to support their progress and participation in the general education curriculum. A. Blackhurst and Edyburn (2000) have described this as a defining moment for special education technology in the modern era.

Instructional technologies, in particular, a computer-based instruction have the ability to help children with autism, teachers and instructors meet the new expectations regarding the academic achievement and educational outcomes. Part of the optimism about tablet technology transformative role in special education has focused on its potential to provide flexibility in the materials and practices surrounding academic curriculum for special learning disabilities. The use of tablet technology to enhance learning is an effective approach for children with learning disability. A. E. Blackhurst (2005) and M. F. Kamaruzaman, Noor, and Azahari (2016) indicates that tablet technology can make learning environments more accessible, besides it can enhance self-reliance among individual with learning disabilities especially children with autism. Tablet technology can also help children with autism to accomplish educational goals, and when used strategically, technology know-how can help bypass conditions that once prevented these children to achieve self-reliance as well as humanising their quality of life. Figure 1 display a sample of tablet technology.



Figure 1: Sample of Tablet Technology which has been used in this research study

The use of tablet technology may provide a compensatory alternative and when embedded with quality visual images instruction, improve achievement may ensue (MacArthur, Ferretti, Okolo, & Cavalier, 2001). According to Fasting and Halaas Lyster (2005), N. M. Rani, Ramli, Legino, Azahari, and Kamaruzaman (2016), when teachers utilised the tablet technology, it may assist children with autism in understanding facts, and when embedded within the effective instruction, tablet technology could provide the means for children with autism to planned which reflective of their knowledge, experience and skills. The use of tablet devices within the school setting provides numerous benefits, including greater flexibility in location of the intervention, easy access to cost efficient application and lower cost when compared to laptop or desktop computer (Ayres, Mechling, & Sansosti, 2013; Bouck & Flanagan, 2016; Sansosti, Doolan, Remaklus, Krupko, & Sansosti, 2015). However, few studies have yet examined the efficacy of the tablet-based intervention for children with autism. Additionally, given the wide variety of application used on tablet devices, most studies do not use the same application for intervention. Therefore it creates a gap of knowledge to grasp on the efficacy of using touch screen learning technology. Additionally, Khan (2010) and Konstantinidis, Hitoglou-Antoniadou, Luneski, Bamidis, and Nikolaidou (2009), N. Rani, Legino, Mudzafar, and Kamaruzaman (2014), believed that all children including the children with autism learn better with the interactive program materials and with the assistive learning technology that engages learners for better cognitive intensity. The tablet technology objectives are to assists children with autism to remain concentrate, in a bid to facilitate learning within the school setting. Despite this, children with learning disabilities often experience better achievement when they been allowed to use their capabilities to work around with their disabilities. Tablet technology instruments combine the best of both of these practices (Adebisi, Liman, & Longpoe, 2015; Higgins & Raskind, 1999; M. F. Kamaruzaman, Rani, N.M., Nor,H.M., Azahari, M.H.H., 2016).

TABLET TECHNOLOGY REFLEXION TOWARDS CHILDREN WITH AUTISM LEARNING DEVELOPMENT

The performance treatment comprehended a qualitative approach by using the data collected from the field notes and video recording supported by structured execution checklists. From the study conducted, we pointed out that the special education school and autism lab programs did not emphasise on the use of tablet technology as a teaching aids in the local classroom learning environment. Due to this factor, most of the teaching and learning ecosystem for children with autism are still using the conventional method that are the cue cards, static images as well as first and then visual approach. Even though the conventional method is still appropriate to use at this point, the advancement and the aid of technology in assisting teaching and learning in the open era of educational must not be overlooked. It is relevant to note that children with autism spend nearly all their time in special education classrooms. It is better to blend the conventional method of teaching and learning together with the technology know-how.

According to Aliza Alias (2013), it is now that this access to education system needs to enhance and improvise in order to produce a self-reliance children and schools that are comparable to the best nationally. She also stated that all education system must be attached to a set of aspirations that are thoroughly attached to its particular national context. Although there are many diverse perspectives on what would make Malaysia's education system incredible, almost all stakeholders agree that Malaysia's education system should do much better if it is to live up to the spirits of all Malaysians.

One of the special need teacher in Sekolah Kebangsaan Raja Muda (Intergrasi), Shah Alam, Selangor, Malaysia point out, the use of technology know-how such as tablets and smartphone in assisting teaching and learning for children with autism is still at the infant age here in Malaysia. He also mentioned that, even though Malaysia vision to developed as a fully developed country by the year of 2020. It need a fully support from top down organisation. It includes the challenge of establishing a progressive people. This also include the population of individual with special need. The populace that is innovative, critical mind and always looking forwards to achieved a holistic growth for all. At the same time, Malaysia National Philosophy of Education call for a developing the potential of individuals in a holistic and integrated manner in order to produce individuals who knowledgeable, physically balance and harmoniously. In order to support the country's ICT plan as well as to

associate with the country vision of 2020, the education system has to be transformed. He also stated that the Western countries have championing the use of tablet technology in assisting children with autism and learning disability for ages and he is aware the significance and the outcome of using these approaches for teaching and learning are quite remarkable. It is a hope and a matter of time, MOE, Malaysia will implement the use of tablet technology in a local school here in Malaysia.

During the preliminary investigation and interview on the usage of tablet technology as a teaching aid for children with autism. We have introduced a tablet based numeracy learning application (TaLNA) which has been formed and designed carefully for children with autism learning development. The content of the apps was adapted and align with the Integrated Curriculum for Learning Disabilities issued by MOE Malaysia. During the experimentation in the Autism Lab, UKM, Bangi Selangor, Sekolah Kebangsaan Raja Muda (Intergrasi), Shah Alam and Sekolah Kebangsaan Puncak Alam, Selangor, they found up that most children with autism who been given a try to use the TaLNA apps really enjoy, enthuse, and motivate. In reference to Figure 2, its shows how comfortable children with autism in handling and operating the tablet technology.

Despite the fact of tablet technology is not the primary mechanism in teaching and learning for children with autism here in Malaysia. It is found that, the tablet technology give an impetus to attract children with autism to continue as well as maintaining their level of attention in learning environment. It is a new dimension of learning to children with autism not only to enhance their cognitive, affective and psychomotor domain but also to complement the present teaching and learning educational system in Malaysia.

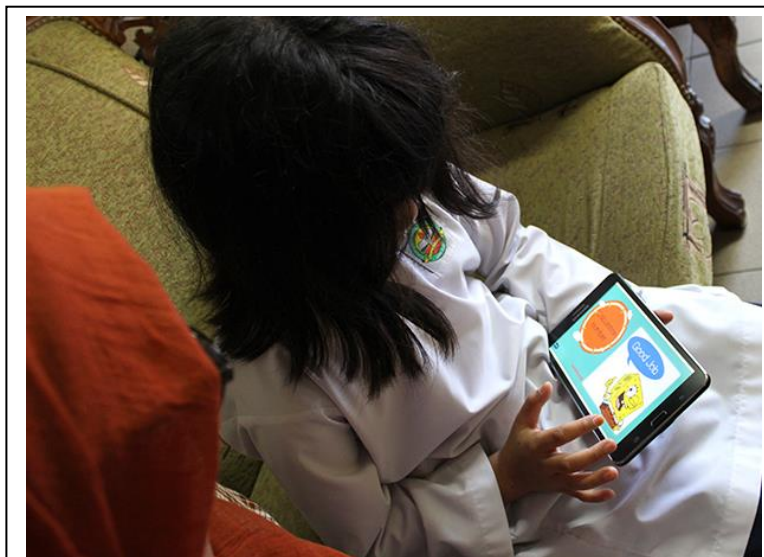


Figure 2: Children with autism show how comfortable there are while using the assistive learning technology device

DATA ANALYSIS TO DETERMINE THE INFLUENCE AND IMPLICATION OF TABLET TECHNOLOGY TOWARDS CHILDREN WITH AUTISM LEARNING DEVELOPMENT

Based on the analysis from the special education teachers and panel of autism experts, all of them without a doubt indicate that the tablet technology is the modern approach in teaching and learning for children with autism. They also decided that the usage of flash card, cue card was outmoded even though the approach is still relevant but the emergence of technology know how provides a significant impact towards teaching and learning particularly for children with autism.

The intelligence and penetration of tablet technology offers induction or stimulation encouragement towards these children to arouse with the application content. With the advancement of computer graphics, audio video,

visual brightness, and colourful layout allowed the tablet technology to engage naturally with the children. Based on Table 1, it is relevant to note that all teacher consented that the tablet technology is very influence and user-friendly in complementing the conventional teaching approach. This information also has been agreed by all the autism experts whereby the tablet technology will boost the recent teaching pedagogy, please refer to Table 2. The tablet technology has given a new dimension and revolution in education world especially for children with autism.

It can be concluded that the tablet technology does influence on teaching and learning for children with autism. This is due to its mechanism which is very portable, easily carried, user-friendly and can promote peer acceptance. Besides, the touch screen and layout are more accessible for children with autism because the devices offer sliding and tapping function, which is easier than typing and scrolling a mouse (M. F. Kamaruzaman, Nor, et al., 2016). All of this feature will naturally boost the children with autism enthusiasm and motivation to discover and learn new thing.

Table 1. Special School Teachers reaction on the influence and significance of tablet technology for children with autism learning environment

No	Name	Institutional	Complement Conventional approach		User- Friendliness		Influence	
			Yes	No	Yes	No	Yes	No
1	Special Education Teacher 1	SK Raja Muda Shah Alam, Selangor	√		√		√	
2	Special Education Teacher 2	SK Raja Muda Shah Alam, Selangor	√		√		√	
3	Special Education Teacher 3	SK Bandar Puncak Alam, Selangor	√		√		√	
4	Special Education Teacher 4	SK Bandar Puncak Alam, Selangor	√		√		√	
5	Special Education Teacher 5	Autism Lab, UKM Bangi, Selangor	√		√		√	
6	Special Education Teacher 6	Autism Lab, UKM Bangi, Selangor	√		√		√	

Note: All special education teachers has agreed on the influence and practicality that has been created by tablet technology towards teaching and learning

Table 2. Autism expert reaction on the influence and significance of assistive learning technology for children with autism learning environment

No	Name	Institutional	Complement Conventional approach		User- Friendliness		Autism experts' reaction on tablet technology	
			Yes	No	Yes	No	Useful	Not Useful
1	Expert 1	Faculty of Education, UKM, Selangor	√		√		√	

2	Expert 2	SK Raja Muda Integrasi, Shah Alam, Selangor	√	√	√
3	Expert 3	IDEAS Autism Centre, Rawang, Selangor	√	√	√
4	Expert 4	SK Bandar Puncak Alam, Selangor	√	√	√

Note: All autism experts agreed that tablet technology complements the traditional method of teaching and learning. It also creates a new diversity in education for children with autism.

FINDING

Most of the special education teachers agreed that the tablet technology inspired and enhanced the mind, visual and psychomotor of children with autism. Autism experts also reckoned with the new dimension of learning intervention, to reduce the duration of time to learn the basic numeracy and calculation skill is possible. Hence, it provides more flexibility and convenience way to study and acknowledge the conventional learning approach. Perhaps these children will survive the challenging adulthood, to be independent, and successfully achieve a better quality of life.

CONCLUSION

Children with autism have a variety of challenges, and they need an impressive frame up of support that should begin in their formative years. With early intervention, outcomes are better. Challenges attending to one aspect of a situation, cognitive inflexibility and over selectivity require additional support. Learning environments can be difficult due to this challenge. Structuring the instructional environment with predictable schedules, having knowledgeable teachers who are well versed with autism as well as having experience with a different kind of learner in the Autism Spectrum are critical elements that foster children success. A variety of forms of technology can be used to assist, foster learning, practice and support visual curriculum. Tablet technology and its tools can inspire enthusiasm and provide options for children with autism instructional content. Data analysis and finding have been one of the most important phases in this research study. The finding demonstrates that the special education teachers and autism experts believed there are a strong connection and interest in the use of tablet technology towards children with autism learning development. Tablet technology will probably never replace efficacious treatment in Autism Spectrum Disorder, just like it will probably never replace the special education teachers. However, the state-of-the-art in educational technology strongly suggests that by using tablet technology, it possible to support both structured and open-ended models for learning.

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Roma in the Czech and Slovak Republic in the Spectrum of National Diversity

Jaroslav BALVÍN

Institute of Pedagogical Studies, Faculty of Humanities

Tomáš Bata University Zlín, Czech Republic

balvin@fhs.utb.cz

ABSTRACT

Roma in the Czech and Slovak Republic are the most significant national minority. Not only numerically but also in social, cultural, linguistic, and educational character of problems. The aim of the paper is to analyse selected aspects of diversity in the relationship between Roma communities and the majority society. Especially in the field of education, cultural and historical.

INTRODUCTION

In former Czechoslovakia, split in 2003 to the Czech Republic and the Slovak Republic, there is together nearly 1 million Roma nationals living there. Of which 300 thousand individuals in the Czech Republic and 500 thousand in the Slovak Republic. This number and the living standards of the Romany communities create a number of complex situations in social, political and educational spheres. Both the Czech and the Slovak governments pay a lot of attention to these issues. As a consequence of the considerable diversity between the Roma and the majority populations as well as other national minorities living in these countries there is tension within the societies often manifested by hateful interventions of ultra-right-wing parties against the Roma population, concentrated in certain specific localities (like for example in the years 2011-2012 in the north of Bohemia near the German border in the towns of Rumburk, Šluknov and Warnsdorf). (More about Roma: Lázníčková, Davidová, Horváthová, Kumanová, Raichlová, Hübschmannová, Nečas, 1999, Kwadrans, 2011, Lacková, 1996).

For all these reasons Roma issues have been studied by a number of authors. I would like to mention a couple of recent ones whose work gave rise to this essay. Major works have been written in the area of multicultural education. Jakub Hladík, expert in multicultural competences, focuses on this area and defines the role of multicultural competences also in relation to the Roma national minority. In his opinion, multicultural competences are also relevant in preparation of teachers-to-be for work with Roma pupils at schools (Hladík, 2016). Examination of the relationship between Roma and majority population is an important aspect of analysis of the position of the Roma communities. These relations have been studied by the pair of authors Jana Smílková and Jaroslav Balvín, who accentuate dangers of the discriminatory practices existing in the relationship of part of the majority population to the Roma community and vice versa - directed from the Roma side towards the majority population (Smílková, Balvín, 2017). Slovak authors dealing with this theme include for example Ms. Lenka Haburajova-Ilavská, focusing on the relationship of the Slovak government and Slovak institutions to Roma communities. Haburajová - Ilavská also analyses the needs and the reality of the Roma national minority giving rise to a number of often irresolvable problems in the society (Haburajová - Ilavská, 2013). Questions of education of adult Roma individuals with regard to andragogy are studied in the most recent publications by Ivana Pirohová, Marek Lukáč and Silvia Lukáčová. This publication summarises experience in education of Roma pupils in the Slovak Republic and defines perspectives related to the asserted inclusion in majority education (Pirohová, Lukáč, Lukáčová, 2016).

Looking for innovative methods of work with Roma pupils is a major part of the idea. This is also what an article by Jaroslav Balvín and Lenka Haburajova - Ilavská is about. These authors deal with the option of application of play methods in teaching Roma pupils (Balvín, Haburajová - Ilavská, 2014). The author of the present article focuses on education of Roma pupils, both children and adults, and on major personalities of Roma culture (Balvín, 1999, 2004, 2007, 2008, 2011, 2013, 2016).

The following text analyses some of the issues the author considers relevant for national diversity and the relationship of the Roma minority to the majority population and options of their national and cultural identity.

THE STUDY

ROMA IN THE SPECTRUM OF NATIONAL DIVERSITY IN THE CZECH AND SLOVAK REPUBLIC

Roma community is a national minority *sui juris* in both the Czech and the Slovak Republic. To be a national minority and not a foreigner to the Czech Republic entails several legislative rules allowing members of national

minorities to maintain their language, culture and identity in the society. These include four conditions: 1) To be a citizen, 2) To contribute to the national economy, 3) To declare the status of national minority by establishment of active national associations, 4) To stay long-term in the territory of the Czech Republic as national minority. These conditions are met, inter alia, by the Roma national minority, whose members are historically the earliest members of the society, living in the territory of the Czech and the Slovak Republics since 13th - 14th century. Thus, the Roma population is a full-fledged member of the national minorities in the country (although they were often deprived of this right by the past regime on the grounds of declaring them just a social group and not a national minority). There are currently fourteen national minorities in the Czech Republic. They include Belarussian, Bulgarian, Croatian, Hungarian, German, Polish, Roma, Ruthenian, Russian, Greek, Slovak, Serbian, Ukrainian and Vietnamese minorities.

There is a certain tension between the minorities and the majority population following from cultural diversity. The reason is different understanding of values, share in economy, social security etc. There are sociological probes studying relations between the majority and the minorities which reveal the bottom position of the Roma minority in the hierarchy of qualitative relations between the minorities and the majority. Roma female writer Elena Lacková named one of the deep causes of this condition as follows: *"Slovaks and Czechs hardly know us (Roma), looking at us with blatant prejudice..."* (Lacková, 1997, in Manuš, 1998, p. 190).

On the other hand, there is the fact that there is diversity even within every national minority and there is some tension among its own members. Elene Lacková showed this on the example of the very Roma minority: *"To tell the truth, Roma people themselves can discriminate. Roma people are humans and suffer from prejudices in relation to the unknown. Hardly any Czech or Slovak knows, though, that not every Roma individual is the same, that our nation is split to various groups like Czechs, Poles, Bulgarians, Serbians and Croats, each group is group per se, with its own habits and rites, its dialect, its professions, in short its way of life"* (Lacková, 1997, in Manuš, 1998, p. 190).

ROMA ENTRY TO THE SCENE OF CZECH AND SLOVAK HISTORY

Roma population entered the Bohemian and Slovak territory in 13th and 14th centuries. In Bohemia an exact date is known from Dalimil chronicle mentioning presence of Roma nationals in 1242. They were called Kartas, for when they met local people they said: *"kartas boh"*, which is translated by philosophers as *"big hunger"*. These people were often considered to be Tartar spies preceding Mongolian raids against Bohemia and Slovakia. (Málek, 1998, p. 167)

This race, coming to Bohemia and spreading across Europe, is also mentioned by the Czech writer Vladislav Vančura in his artistic rendering of Czech history called *Obrazy z dějin národa českého*. (Vančura, 1940, in Manuš, 1998, pp. 164-166).

The first written mention about Roma presence in Slovakia dates from 1322. In that year the mayor of Spišská Nová Ves wrote that migrant Gypsies were settling in the surrounding forests. A major act was the provision of the protective safe-conduct for the Roma leader Ladislav at Spiš castle by Emperor Sigismund of Luxembourg. This event is dated 17 April 1423 and the Emperor thus permitted free Roma wandering across the country and their camping near towns and cities. The Roma communities also presented this safe-conduct when arriving at France. And as this document came from Slovakia and Bohemia, Roma communities began to be called Bohemians. (On Roma history in Bohemian and Slovak territory see also Horváthová, 1999, p. 15-23, Lhotka, 1999, p. 25-27, Nečas, 1999, p. 29-31, Davidová, 1999, p. 33-37)

ROMA JOURNEY THROUGH CENTURIES IN BOHEMIA AND SLOVAKIA

Since their **arrival in Europe, including Bohemia and Slovakia**, the relationship between Roma and majority populations has undergone complex development. From the original interest and enchantment by the new, unknown ethnic from far east to chases and liquidation in 16th and 17th centuries. This was followed by assimilation in 18th and 19th centuries. Humanisation of the relationship was disturbed by various discriminatory and coercive legislative acts. The most violent attack against the Roma population as a non-adaptable community came in the form of the genocide in the context of 20th century holocaust.

At present the Czech and Slovak Republics strive at creation of mutually correct relationships between the Roma minority and the majority populations although on the other hand there are still parties and movement trying to discredit the Roma position in the society. The history of Roma existence in our territory is marked by a couple of important milestones:

Three hundred years ago ancestors of the present Roma community began to settle at the outskirts of Slovak villages where they established cooperation with local farmers: they made their baskets and forged products for them. And Roma music bands played at the farmers' weddings and dances. A similar symbiosis developed in

Bohemia where Roma groups mainly settled in South Moravia. A different way to earn their living was developed by the **Olach Roma group**. They migrated across the country and lived on small thefts in addition to performing certain professions. That threw a shadow on the settled Roma communities and so neither them nor the majority population liked Olachs. (See Lacková, 1997, in Manuš, 1998, p. 190). The Olach Roma migration was only stopped in 1959 by issue of the sate ban of migration.

Roma in the First Czechoslovak Republic (1918-1938) were under strict control of the government and, on the other hand, the first **positive projects** for development of their nationality became to develop, including for example the Roma school in Uzhorod founded in 1926.

In the period of World War 2 the genocide programme and the consequences of holocaust nearly eliminated the Roma nation in Bohemia and Moravia (with 7 to 15 thousand Roma victims). In Slovakia, a thousand Roma people died in work camps or in war purges.

The fate of the Roma nation in the years 1945-1989 was marked by the paternalist approach of the society based on the communist ideology. The Roma population was to be “re-educated” in the Czechoslovakia of the time. That was done not only through special schools but also through their work liability.

Roma condition after the Velvet Revolution in 1989 has been both positively and negatively affected by the new market mechanisms. The positive role is performed by the Roma representation in the government in the form of the *Government Council for Roma Community Affairs*, by their own civic associations, their *Museum of Roma Culture in Brno*, or their own theatre called *Romathan* in Košice, Slovakia. Another major positive fact is the establishment of professional academic institutes for studies of cultural and social matters of Roma communities. (They include for example the Department of Roma Studies at the Faculty of Arts, Charles University in Prague, Czech Republic, or the Institute of Roma Studies at Constantine the Philosopher University in Nitra, Slovak Republic). Cultural activities introducing to the general public qualities of Roma music, singing and dance are no less important. One of the popular events held in the capital city of Prague in May already for nineteen years is the Roma World Festival Khamoro (Khamoro = Little Sun).

ROMA PERSONALITIES IN CZECH AND SLOVAK REPUBLICS

Unlike majority cultures, Roma written culture only began to develop in 1920s. It was developed by Roma personalities who, with the help of non-Roma experts knowledgeable of Roma languages (in Czechoslovakia represented by Milena Hübschmannová and Eva Davidová), began to write in Roma language. Every nation has its outstanding personalities. The Roma nation has them too, despite the doubts of the majority. The following chapters will introduce some of them in our opinion most significantly contributing or having contributed to development of Roma culture. The author of this text had the chance to be in close contact with most of them for twenty years since 1993 and therefore his information about them comes from his personal experience in their personalities and work developed in the context of the struggle for Roma identity and national emancipation.

THREE MAJOR ROMA PERSONALITIES IN THE CZECH REPUBLIC

ROMA POET PHDR. VLADO OLÁH, 1947- 2012

This poet was the first Roma writer accepted as member of the Czech Community of Writers and granted the Literary Prize of Milena Hübschmannová in 2006. He also founded and for many years presided the civic association Roma Publishing and Cultural Society with registered seat in Prague based on Christian principles. His work is an artist's confession of affection for the mankind in general and the Roma nation in particular. His most popular collections of poems include: *Khamori lulud'i* (Sunflower), *Le khamereske čhave* (Children of the Sun), *Khamutno kamiben* (Glow of Love), *Amaro drom pal o Udut* (Our Way to the Light). His Christian faith was expressed by Vlado Oláh by his translation of biblical texts to the Roma language under the title *Apostolic Deeds*.

ROMA POLITICIAN ING. KAREL HOLOMEK, BORN 1937

Ing. Karel Holomek comes from a mixed marriage. He is offspring of Moravian Roma group and son to Tomáš Holomek, the first university-educated Roma in the Czech Republic. He has been Roma politician, president of the Moravian Roma Community, member of the Council of the Government of the Czech Republic for Roma Community Matters for many years. He is also known to the European political scene as a supporter for Roma integration in the majority societies. He is also father to PhDr. Jana Horváthová, for years successful director of the Museum of Roma Culture in Brno. His creed, expressing the efforts of many Roma and Czech activists to eliminate frictions between Roma and non-Roma groups, is embodied in the following statement: “*I want to*

build bridges between Roma and Gadjo... I want to contribute to formation of Roma representation expressing interests of all Roma people in the country... Success is still hard to achieve... “

At present he is president of the Roma Community in Moravia, honorary president of the Society of Experts and Friends of the Museum of Roma Culture in Brno, director of the International Roma Centre of the Helsinki Civic Assembly, member of the Government Council for Human Rights and editor-in-chief of the Roma journal *Romano hangos* (Romany Voice).

POLITICIAN AND LAWYER JUDR. EMIL ŠČUKA, BORN 1957

JUDR. Emil Ščuka is a former attorney, later politician representing Roma interests in the Czech Republic and worldwide. In 1990 he was elected Secretary General of the International Romany Union (IRU) and between 2000 and 2004 its president. His major merits on the international scene include the Declaration of Roma Nation of 2000 and his representative role in the United Nations Organisation. On the domestic scene, he founded the Romany Civic Initiative (RCI) political party in the still undivided Czechoslovakia after the Velvet Revolution in 1989. Thanks to its success in elections eight Roma deputies became members of the Czech and Slovak Parliaments. Emil Ščuka initiated and organised several major Roma Art Festivals called ROMFEST. In the area of education of Roma students, he established the Secondary Roma School of Law and Sociology. At present JUDr. Emil Ščuka holds the post of headmaster of the International Conservatory Prague.

THREE MAJOR ROMA PERSONALITIES IN THE SLOVAK REPUBLIC

ROMA FEMALE WRITER ELENA LACKOVÁ, 1921-2003

Mgr. Elena Lacková, born Doktorová, was born in Velký Šariš, Slovakia, in 1921 and died in Košice, Slovakia, in 2003. She was the first Roma female in Czechoslovakia who graduated in Adult Education. She became a widely renowned female writer for children and youth. In addition, she worked in many cultural centres as an expert in education. She wrote poems, fairy-tales, short stories and stage plays in the Roma language. In 2000 the President of Slovakia granted her a state award. Her major works using art language to express identity of the Roma nation and its struggle for emancipation include the stage play *Burning Gypsy Camp* and the radio play *Zhuzhika*. Further major achievements include Roma fairy tales and her autobiography called *I Was Born Under Lucky Star*. Her three short stories about Roma holocaust warn against holocaust which also negatively affected Roma nation in Czechoslovakia: *The Dead Do Not Return*, *Life in the Wind* and *White Ravens*.

ROMA POET DEZIDER BANGA, BORN 1939

Dezider Banga is Slovak poet, translator and TV dramaturge. Dezider Banga comes from a Romany family. He graduated from Faculty of Arts, Comenius University in Bratislava, majoring in Slovak language and literature and History. After graduation, he worked as secondary school teacher, translator, TV dramaturge and editor-in-chief of the Roma journal called *Romana*. His literary achievement is based on poetry. The first collections of Dezider Banga are based on Gypsy folk art which he translated to Slovak. Banga's poems spring from authentic love experience. His major works include the anthology of Romany poetry called *Song over the Wind* and the anthology of Roma fairy-tales entitled *Black Hair and Paramisa* (fairy-tales). His contribution to education of Roma children is represented by the Roma spelling book called *Romano hangos* (Roma Voice) of 1993.

ROMA PHYSICIAN AND POLITICIAN JÁN CIBULA, 1939-2013

Ján Cibula was born in poverty in the family of a Roma musician in Slovakia. As doctor of medicine he became a respected specialist in Bern, Switzerland. He worked there in his profession till 2002. In addition to his job of general practitioner he devoted his time and money to the struggle for the rights of the Roma nation. He was one of the founders of the International Romany Union - IRU - in 1971 at its first congress in Oprington near London. That congress elected him representative of IRU in the Commission for Human Rights of UNO in Geneva. In 1978 he was elected president of the International Romany Union. He received a number of international awards for his activity. Including one from the Slovak Government. In 2008 he received the "Prize for Humanness" recognizing his long-term efforts in dissemination of information about Roma holocaust and request for compensation for its victims.

INTERNATIONAL ROMA PERSONALITIES CONNECTED WITH CZECH AND SLOVAK HISTORY

IAN HANCOCK (in Romany language Yanko le Redzhosko)

Ian Hancock is a Roma historian and philologist of U.S.A., university professor. He was born in 1942 and became Roma teacher and advocate. He comes from England. He is one of the major authors in the area of Roma studies. The Slovak University of Constantine the Philosopher in Nitra, the Institute of Romany Studies granted

him Doctor Honoris Causa in 2008. His main literary achievement dealing with history and culture of Roma nation in global relations is called *We, the Roma Nation* (in Roma language *Ame sam e Rromane dzhene*).

HRISTO SLAVOV KYUCHUKOV

Hristo Kyuchukov is Roma psycholinguist coming from Bulgaria, university professor. He was born in 1962 in the community of Bulgarian Moslem Roma. He is a leading specialist in Roma language and Roma children education in Europe. He obtained his academic title of professor of general linguistics with a focus on Roma and Turkish languages at Matej Bel University in Banská Bystrica, Slovakia, in 2015. In the years 2007-2012 he taught at the Department of Roma Studies at University of Constantine the Philosopher in Nitra, where his professional knowledge greatly contributed to development of his department. At present he lives in Berlin, contributing to development of Romany nation and language studies. In 2017 he became professor at Silesian University in Czesin, Poland.

ROMANI OSCAR ROSE

Romani Rose is a Roma activist, born in Germany in 1946. He lost 13 relatives in holocaust. He is president of the Central Committee of German Sinti and Roma.

ROMA EDUCATION

Education of Roma children was introduced in Czechoslovakia after World War 2 with difficulties. The situation was further complicated by the arrival of Slovak Roma groups to Bohemia. Most of the present Roma people in the Czech Republic come from Slovakia for Bohemian Roma nation was nearly completely eliminated in concentration camps in the course of World War 2.

The system of special schools developed in Czechoslovakia in 1960s and 1970s respected the specifics of the Roma social situation. But there was a major pitfall in this system too. The special schools were designed for children with mental handicaps. But problems with education of Roma children were certainly not due to such handicaps. Czech Republic was sharply criticised for this method of Roma children education from abroad.

After 1989 change was sought in this system through finding and introducing special methods of education respecting the specific situation of Roma children. The criticism also reflected in introduction of inclusive education across the Czech system of education. Despite the number of critics inclusive education of Roma children and youth has been firmly established. And the conference on inclusive education in Roma schools in 2017 held in the context of the *International Roma Festival Khamoro* in Prague revealed not only good chances of the elementary education to include Roma children but also the possibility of preparation of these pupils for university studies and successful inclusion in the job market and in the society generally. (Trmice elementary school).

Slovaks are rather sceptical about inclusive education of Roma children. As mentioned by the Slovak expert Ivana Pirohová together with Marek Lukáč and Silvia Lukáčová, with reference to other experts (Kusá, Kostlán, Rusnáková, 2010) *“school as operated today on the basis of “state commission” and parent commission is not able to balance the disadvantage of children coming from families with the lowest socio-economic status and motivate their interest in further education”* (Pirohová, Lukáč, Lukáčová, 2016, p. 109)

Acceptance of the model of inclusive education in Slovakia is a long-term process requiring support on all levels and mainly from the teachers themselves who should be systematically prepared for application of inclusion... (Pirohová, Lukáč, Lukáčová, 2016, p. 132)

RESEARCH ON ATTITUDES AND RELATIONS OF STUDENTS OF SOCIAL PEDAGOGY AND ANDRAGOGY AT ZLÍN UNIVERSITY TO ROMA EDUCATION

METHODS

The **subjects** of the quantitative research included 255 extra-mural students of social pedagogy and andragogy at Tomáš Bata University in Zlín in combined course. The **purpose** of the research, partly published herein, is to analyse student attitudes to Roma children as the subject of frequent solutions of complex social, cultural and educational issues in professional practice of social pedagogues and andragogists.

The basic questions summarised in an electronic questionnaire to be filled out by the students included:

- 1) What in your opinion is the public opinion on the Roma communities?
- 2) What is the professional attitude to the Roma nation of social pedagogues, andragogists, teachers and other specialists dealing with Roma community related issues?
- 3) What is your personal attitude of a citizen and professional?

- 4) What is your opinion on the ability of multicultural policy and education to harmonise the relation between the Roma minority and the majority society?
- 5) What in your opinion is the attitude of the Roma nation to the majority?
- 6) Do you think that there is specific Roma culture?
- 7) Do you think that Roma culture is able to bring values to the majority?
- 8) Do you think that Roma culture is able to positively affect philosophical and ethical aspects of relations in the present globalised world?

The first questions (1-4) concerned attitudes and relations between the Roma minority and the majority society. The next section of the questionnaire focused on finding out opinions of the students on the existence of Roma culture and its potential to influence the cultural value system in the society (questions 5-8).

FINDINGS

The research started with finding out the number of students studying social pedagogy and andragogy. As shown by the below diagram, over 50% of the students were students of the first year of master course in social pedagogy, and 20% were students in their first year of bachelor course in social pedagogy. The rest of the students were students of andragogy.

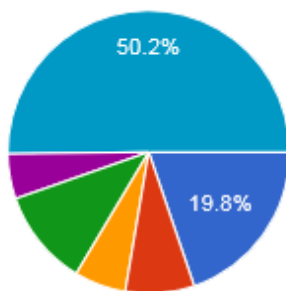


Figure 1: What subject do you study?

1. Year Bachelor's Studies – Social Pedagogy, Combined Studies	50	19.7%
1. Year Bachelor's Studies – Andragogy, Combined Studies	20	7.9%
2. Year Bachelor's Studies – Social Pedagogy, Combined Studies	15	5.9%
2. Year Bachelor's Studies – Social Pedagogy, Combined Studies	28	11%
3. Year Bachelor's Studies – Andragogy, Combined Studies	13	5.1%
1. Year Master Studies – Social Pedagogy	127	50%

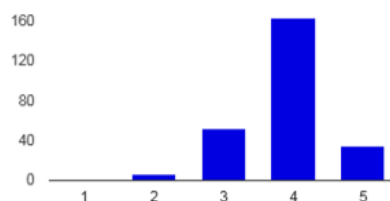


Figure 2: In your own opinion what attitude has the public about the Roma?

Very good:	1	0	0%
	2	7	2.8%
	3	51	20.1%
	4	162	63.8%
Very bad, negative:	5	34	13.4%

The next question concerned the students' opinion on the general attitude of the public to the Roma minority. The results were very expressive. Excellent attitude to the Roma minority was in the opinion of the students excluded from the range of attitudes of the majority population. The second rank of positive attitude was only represented by less than 3%. The fourth and the fifth rank were represented by worst relations to the Roma minority, allowing to conclude that 76 of the majority population represent negative attitudes to Roma people, in the students' opinion.

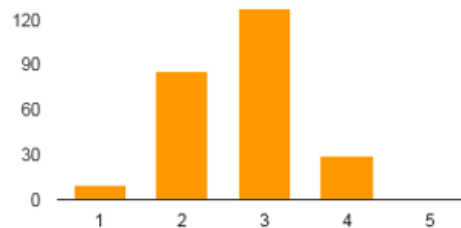


Figure 3: In your opinion what attitude to the Roma (Roma pupils, parents and other members of Roma community) has the professional sphere (teacher, Andragogues, social workers etc.)?

<i>Very good:</i>	1	10	3.9%
	2	86	33.9%
	3	128	50.4%
	4	29	11.4%
<i>Very bad, negative:</i>	5	1	0.4%

In connection with this question we were interested in the students' opinion as current or future professionals in support professions on the attitude of professionals of the support professions to the Roma subjects of their work. A positive result was that the students assessed excellent relation to Roma minority in 4% of their answers and the second best in 34% of answers. Most students reported the attitude to Roma population in the middle of the scale in 50% and the worst relation was reported by 0.4 % (just one of the 255 students). This result reflects the fact that professional recognise the necessity of a positive attitude to the Roma subjects of their work and consider it also an important basis for successful or at least optimum work among representatives of Roma communities.

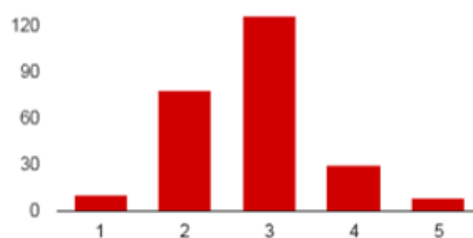


Figure 4: Your personal opinion to the Roma communities:

<i>Very good:</i>	1	10	4%
	2	78	30.8%
	3	127	50.2%
	4	30	11.9%
<i>Very bad, negative:</i>	5	8	3.2%

A similar result was discovered in the answers to the question about personal attitude of the students to the Roma children. Excellent relation was reported by ten students (4 %), but the worst, negative attitude was reported by a higher number than in the case of the previous question: 8 students (3 %) expressed a very negative personal attitude to Roma minority. This shows that the relationships of professionals to the Roma subjects are very differentiated and cannot be simply ordered by an ethical code.

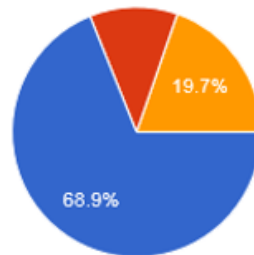


Figure 5: Do you think, multiculturalism can achieve better coherence between Roma and Non-Roma people and their better integration into civil and professional society?

<i>Yes, it can</i>	175	68.9%
<i>No, it cannot</i>	29	11.4%
<i>I do not know, I cannot judge</i>	50	19.7%

In the context of the current sceptical opinions on the role of multicultural education in the society we were interested in the students' opinions on potential positive effect of the multicultural scene on better inclusion of the Roma minority in the society. The opinion of 175 students of the 255 (68.9%) that this effect is possible may be considered positive. Negative answers were given by 11.4 % of the respondents and 50 students said they are not able to judge that. These results may be considered a positive starting point for further development of multicultural scene and education as a society-wide matter in relation to the Roma minority and the majority alike.

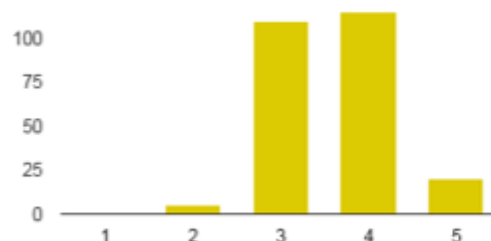


Figure 6: In your own opinion, what attitude have Roma about to the major society?

<i>Very good:</i>	1	0	0%
	2	6	2.4%
	3	109	43.4%
	4	115	45.8%
<i>Very bad:</i>	5	21	8.4%

We also asked about the relation of the Roma minority to the majority society. The students considered excellent relation of the Roma people to the majority society absent. Only 6 students mentioned the second-best attitude as possible. The 88% together occupying the third and the fourth rank is seen positive. Despite that the students thought that the worst attitude to the Roma minority was held by 8.4 % of the majority population. The fact that

our research also considered the attitude of the Roma minority to us as the majority is a significant asset of the research. This question represented reciprocity in our mutual relationship.

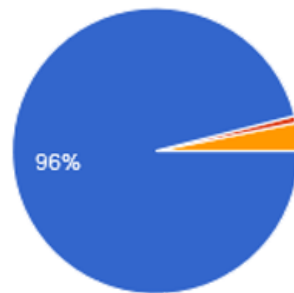


Figure 7: Do you think, Roma people have their own culture?

<i>Yes, they have</i>	243	96%
<i>No, they have not</i>	2	0.8%
<i>I do not know</i>	8	3.2%

The question was asked on purpose for the author of the present text, making use of his long-term experience, was aware that most students as well as the general public refuse to accept existence of Romany culture beyond some “violin playing and singing”.

A positive finding concerned acknowledgement of Roma culture as a system of material and spiritual manifestations of Roma life by most of the respondents, i.e. 243 students (96 %). Only two respondents refused to admit existence of Roma culture as a special entity and eight students could not judge that.

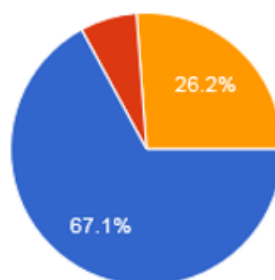


Figure 8: Do you think, that we can draw from Roma culture inspiration for life's Value enrichment of the major society?

<i>Yes, we can</i>	169	67.1%
<i>No, we cannot</i>	17	6.7%
<i>I do not know</i>	66	26.2%

Another important finding was the 67 % of the students gave a positive answer to the question of the possibility to use Roma culture in the sense of value enrichment of the life of the majority society. 66 % did not know or could not judge that. This also creates space for deeper and improved preparation of the students of the support professions, social pedagogy and social work so that future professionals can make use of knowledge of Roma culture for instilment of better understanding between the Roma and non-Roma populations.

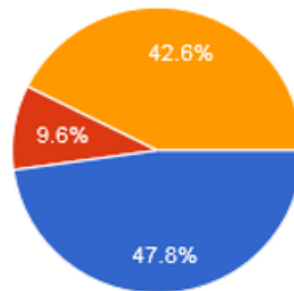


Figure 9: Do you think, that Roma culture could enrich the philosophical and ethical view to resolve relationships in the society and in our global world?

<i>Yes, it could</i>	120	47.8%
<i>No, it could not</i>	24	9.6%
<i>I do not know</i>	107	42.6%

120 students of 255 answered Yes to the question whether Roma culture might enrich the philosophical and ethical approach to the current globalised works. On the other hand, these attitudes show that there is a broad range of opportunities for improvement of awareness on the quality of the philosophical and ethical basis of Roma culture with the aim to improve the general knowledge of Roma culture and its values as adequate to the values of any other culture in the current globalised world.

CONCLUSION

The present text is divided into three parts. The first provides the basic classification of national minorities in the Czech and the Slovak Republics. We have mentioned the major position of the Roma minority among the 14 national minorities living in the country, albeit considered since 2000 as a nation without any territorial anchoring.

The second part points out some of the main milestones of development of the relationship between the Roma communities and the majority society. This account only outlines the complexity and the dramatic context of the development. The period of Romany holocaust was pointed out as the most critical milestone in Roma history.

The third part characterises some major Romany personalities coming from the Czech and the Slovak Republics. They are paired by major international representatives of the global Roma community. The purpose of this was to show that Roma nation has its outstanding personalities respected as its leaders struggling for preservation of the Roma national identity, culture and emancipation.

The theoretical part was concluded by an image of the current situation in the system of education in the Czech and Slovak Republics based on inclusion of Roma pupils in the mainstream education of the country population. This trend strives to give birth to new representatives of the Roma nation that might be placed next to those from the past introduced above.

This theoretical part is followed by a practical part. The practical part presents results of a quantitative research among students of social pedagogy and andragogy. The following conclusions follow from our research on the situation of Roma communities in the Czech and Slovak Republic implemented among extra-mural students of social pedagogy and andragogy at Tomáš Bata University in Zlín:

- 1) There is a major difference in attitudes of professionals assisting Roma community by their professional work and the general public to the Roma minority. The attitude of the professionals is more positive than the attitude of the general public. This represents a great potential of development of correct relationships between the Roma and the majority population.
- 2) Positive answers prevailed in connection with questions about quality of Roma culture and its potential for involvement in positive processes of development of the global culture.
- 3) Our students showed a strongly positive approach to multicultural aspects of the present world in contrast to the generally sceptic attitude: the future and present professional strongly positively assessed

the options of development of multicultural relations between Roma and non-Roma communities in the society.

We will conclude by the opinion of the former director of the Museum of Roma Culture in Brno: The resources about the Roma nation are very unilateral, for as mentioned by the former director of the Museum of Roma Culture in Brno, Mrs. Ilona Lázníčková, *“they mainly grasp the sides of Roma life in conflict with the majority society, or the state. This unilateral approach is further supported by the long-term lack of interest of many fields of study in Roma studies, their non-recognition of the Roma minority as a full-fledged national minority with all rights and development options and the tabooisation of a number of related facts by the past political regime”* (Lázníčková, 1999, pp. 5-6).

Our paper, presented at the conference, in contrast to this statement, tried to objectivise the view of the Roma national minority and the Roma nation. The history of the Roma nation is very dramatic and represents a good lesson even for the majority societies within which the Roma people ended their long journey from their original country - India.

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Satisfaction Level of Faculty of Education Students with the Service Quality of Teaching

H. Ömer BEYDOĞAN

Ahi Evran University

hobeydogan@gmail.com

ABSTRACT

Today, the quality of the teaching service provided in educational institutions is evaluated based on perceptions of students who receive the teaching service in question. Quality in teaching involves certain decisions and practices which lead to improvements in student learning and satisfaction before, during, and after the teaching process. School policies which guide student learning and apply a teaching program that is generally accepted by the society constitute the basis for student satisfaction. It was aimed in this study to explore satisfaction of students enrolled in the Faculty of Education with teaching service quality.

The survey method was employed in the study to describe the current situation. The sample included 449 randomly selected students enrolled in different departments of the Faculty of Education, Ahi Evran University. Survey questions and the teaching service quality scale developed by the researcher were used for data collection. Validity and reliability of the teaching service quality scale were tested with 670 students. Exploratory and confirmatory factor analysis showed that the scale explained 57.26% of the total variance and had a 7-factor structure. The Kaiser-Meyer-Olkin (KMO) coefficient of the scale was 0.895 and the Barlett Test significance value was significant above at $p < 0.00$ level. The Cronbach's Alpha reliability coefficient of the scale was $\alpha = 0.854$ and the test-retest method applied to 130 students produced a stability factor of $r = .872$.

Regarding α values for the factors of the scale, the relationship was found to be significant at 0.777 level of physical and technological equipment; at 0.635 level for appropriate environment; at 0.715 level for integrity in learning; at 0.721 level for encouraging learning; at 0.386 for keeping up-to-date; at 0.598 for internalizing learning; and at 0.535 level for process-based evaluation. Fit index values of the seven factors of the scale, which were found as a result of exploratory factor analysis, were calculated using confirmatory factor analysis. Fit index values were RMSEA= 0.061, SRMR= 0.050 NFI= 0.92, CFI= 0.95, GFI= 0.86, and AGFI= 0.83.

The study attempted the answer the question, "What is the satisfaction level of the students with teaching services in relation to the factors of the scale and teaching practices?". Correlation with satisfaction level and predictive power for satisfaction level were explored for each factor of the scale. The data collected in the study was analyzed and results were discussed comparatively with literature findings. Certain recommendations were presented within the framework of findings obtained in the study to improve teaching service quality in education faculties and ensure student satisfaction.

Keywords: Educational service, educational quality, educational environment, physical and technological equipment, integrity and actuality in learning

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INTRODUCTION

Different opinions have been suggested about the concept of quality to this day. While Deming defines quality as fitness of the product or the performance to desired quality characteristics and judgment of the consumer about the product or service (Deming, 1998, p.137); Juran defines it as fitness for intended use (Juran, 1986, p.22), while Crosby defines it as conformance to requirements (Efil, 2003, p.10). Taguchi (1986) considers quality in education as deviations from educational objectives at the end of the teaching-learning process. He suggests that less deviation means better quality in education. Japanese scientist Ishikawa includes categories such as quality of work, quality of service, quality of information, quality of process, quality of people including workers, engineers, managers, and executives, quality of system, quality of company, quality of objectives, and so on (Ishikawa, 1997, p.47). The individual and the education received by the individual are the basis of all services and products, and therefore the main determining factor for quality.

Formal education is carried out through teaching. For this reason, the concept of education quality is usually identified with teaching quality. Today, the highest-level teaching institutions, universities, are looking for ways to be recognized (or accredited) by international or national organizations, which audit institutions and give quality certificates, in order to demonstrate the quality of their services and products (Saarinen, 2005).

1. QUALITY IN TEACHING

Hunter (1979), who dealt with the concept of teaching quality, notes that it involves making and implementing decisions before, during, and after instruction to increase the probability of learning. Ensuring teaching quality is the activity of ensuring student satisfaction through school policies developed by administrators in order to foster a mentality which will guide teaching. It is possible to mention teaching quality to the extent that students are able to improve their desired skills and creativity at the end of the teaching process and to the extent that institutions are able to meet expectations of students and other stakeholders of education with the teaching service which they provide during the teaching process. Quality in teaching refers to a situation where student and parent expectations are met, educational objectives are achieved, and student potential is revealed.

The teacher must provide a good learning environment, improve learning motivation, and ensure that students engage in self-learning and learn by doing and experiencing (Vermeule and Schmidt, 2008). Teaching is an activity which involves the teacher-student interaction, efficient use of language to allow for positive change in student attitudes and behaviors, and sharing the belief that educational ideals and goals can be attained (Kyriakides, Campbell, and Christofidou, 2002). According to White, Wyne, Stuck, and Coop (1987), the teaching-learning process involves ensuring enhanced student behaviors by managing student behaviors, presenting appropriate messages, guiding students throughout the learning process, and managing learning through useful feedback.

Brookes University (2005) addresses quality in teaching in nine dimensions: courses, lecturers' motivation, instructional design, relationship among students, relationship between students and lecturers, assignment, lecturers' competence, obstacles and constraints, and evaluation. Wilkie (1990) defines customer satisfaction as the emotional response to the evaluation of the affairs of consuming a product or receiving a service. Satisfaction with teaching and learning quality is the student response after the lecture. It is possible to say that increased teaching and learning quality increases student satisfaction.

Ramsden (1991), Rowley (1996), and Stringer and Irwing (1998) found a strong correlation between instructor quality and perceived teaching quality of students. Henning et al. (2001) discovered that the quality of teaching and students' emotional commitment to the institution were important to maintain the students' loyalty. Ander and Burns (1990) suggested that, for high teaching quality, teachers must interact and communicate with their students in such a way that it will change students' learning behavior. Teaching is an activity which involves the teacher-student interaction, efficient use of language to allow for positive change in student attitudes and behaviors, and sharing the belief that educational ideals and goals can be attained (Kyriakides, Campbell, and Christofidou, 2002).

The relationship between the student and teacher in and out of the classroom has significant effects on the student. There are numerous studies which show that the relationship between the student and the teacher out of the classroom influences the student's personal and social development, academic achievement, self-confidence, perceived self-worth, and willingness to assume active roles in the learning process (Kuh and Hu, 2001; Endo and Harpel, 1982; Thompson, 2001).

The way that the student positions himself/herself in the learning process impacts the teaching quality considerably. In student-centered teaching, student is the receiver, the controller, and the reflector of the teaching service. Rather than just performing given tasks and being a spectator during classroom activities, the student benefits from the teaching service, controls efficiency and performance of the teaching service, actively participates in intra-classroom management processes with his/her ideas, behaviors, and criticisms, and uses his/her critical-thinking skills freely to reflect his/her opinion.

While communication is important for teaching quality, it does not only refer to instruction or conveying implicit messages via teaching materials. Studies show that students are affected by attitudes and behaviors of teachers, rather than the information provided by them (Gözütok, 1988; Baykul, 1990; Elçi, 2002; Akkoyunlu, 2003).

White, Wyne, Stuck, and Coop (1987) suggests that managing student behaviors, presenting appropriate messages, guiding students throughout the learning process, and managing learning through useful feedback will

improve the quality of the the teaching-learning process. Learning-related behaviors of the student must be strengthened at the end of this process. In all these processes, teachers are expected to present information to students in an empathetic manner. Good presentation may be considered as an indication of being a good teacher.

By its nature, teaching involves abstract and intertwined concepts and active processes. For this reason, teaching quality involves much more than just teaching and learning. According to Borahan and Ziarati (2002), quality assurance in teaching is all those planned and systematic actions necessary to provide sufficient confidence that a product or service will satisfy given requirements for quality.

Quality in teaching is to develop a shared mentality which will guide teaching, ensuring that teachers adopt school policies, enhancing student satisfaction, and equipping students with appropriate knowledge and skills at the end of the teaching process, and contributing to their creativity. Only then the teaching service can meet the expectations of stakeholders (teachers, students, and parents). Meeting expectations of students and parents will allow for achieving educational goals as well.

Emanuel and Adams (2006) suggested 5 dimensions to evaluate classroom performance of instructors: “Tangibles”, which include appearance of the classroom, student seating, and the like; “reliability”, which is the instructor’s ability to instruct the course dependably and accurately; “responsiveness”, which addresses the instructor’s willingness to respond to students’ questions and concerns, “assurance”, which refers to the instructor’s knowledge and ability to convey trust and confidence to students; and “empathy”, which is the caring and individual attention the instructor provides to his/her students.

Ramsden (1981), Rowley (1996), and Stringer and Irwing (1998) found a strong correlation between instructor quality and perceived teaching quality of students. Henning et al. (2001) revealed that the quality of teaching and students’ emotional commitment to the institution were important to maintain the students’ loyalty.

Faculty of education students participate in various activities in their environment, establish positive relationships with their peers and faculty members, successfully manage interactions with their environment, participate in artistic activities such as theater, painting, and music, which are activities that enrich their lives in the faculty and contribute to their satisfaction. However, the determining factor in the center of these interactions is their perception about the purposeful teaching activity.

It was found in various studies on student satisfaction (Şara & Kocabaş, 2012; Tatlı et al., 2011; Ulusoy et al., 2010; Açıkan & Saydan, 2009; Şahin, 2009; Uzgören & Uzgören, 2006; Ceylan & Demirkaya, 2006; Kaya & Engin, 2007) that students were “moderately” or “highly” satisfied with the quality of education which they receive. In studies where students evaluated instructors (Arslantaş, 2011; Şen & Erişen, 2002), it was reported that students found instructors to lack effective teaching skills and incompetent in many aspects. Awang and İsmail (2010) and Ekinçi and Burgaz (2007) found that university students had high expectations, yet low satisfaction levels, which led to reduced student motivation. This study aims to explore effects of physical equipment in the faculty of education, integrity in learning, keeping up-to-date, encouraging learning, internalizing learning, and process-based evaluation on student satisfaction.

2. THE PURPOSE AND THE SIGNIFICANCE OF THE STUDY

Main components of the teaching quality in educational institutions are the instructor, the student, and the administrative personnel, who provide intermediary services. Complementary components of the instructor-student interaction based teaching process include physical equipment; teaching-learning environment; psychological atmosphere; student-instructor relationships; communication style; teaching strategies and methods adopted in the teaching-learning process, techniques used to implement such strategies and methods, content of teaching, teaching materials, and evaluation processes. It is also very important that teaching service providers follow new developments in teaching, encourage students to learn, and use appropriate evaluation tools and techniques to receive feedback. Students, who are the recipients of the teaching service, will make the best and most effective decision regarding the quality of the teaching service.

Appropriate physical and technological equipment: Every educational institution desires to provide physical settings where students can meet their biological, psychological, and social needs and maintain interaction among themselves. If the educational environment lacks a visually comfortable environment, students may experience physiological and psychological problems such as false perception, reduced academic achievement, fatigue, and irritability (Çabuk, 2006). School buildings and classrooms must be suitable for ergonomic use and designed to meet expectations of all student groups. Unfortunately, school buildings and yards in Turkey are not properly planned and do not fit to the environment. Başar (2003) found that the majority of elementary schools are stuck between residential buildings, open to noise pollution, environmental pollution, and other threats, have additional buildings which deface the school and the environment and shrink yards, which are already quite small in most cases, and school buildings are not suitable for education with respect to their structural properties and equipment. Although the most commonly preferred colors in elementary school buildings include yellow, pink, and peach (Barker, 1982), it is reported that straw yellow and salmon pink are the most preferred colors for schools in Turkey (Akar and Sadık: 2003; Halis, 2000). Students' perceptions about the physical structure and equipment of the school where they receive education are stuck in their minds. Perceptions are the building blocks of satisfaction. Schools usually do not have sufficient physical equipment (laboratory, multi-purpose salons, workshops, physical education areas, etc.). The school environment becomes more attractive for students when the physical structure and equipment have a modern appearance and are supported with technological tools and materials (Soedijati & Pratminingsih, 2011). In appropriate physical conditions in schools lead to crowded classrooms and classrooms shared by multiple student groups. When the physical environment is organized in a way that it will create enthusiasm in the student, it serves as an external stimulus to encourage the student to learn.

Appropriate environment: A physical environment where teaching is carried out requires an organization where instructors and students can interact, students act freely in terms of their learning, students and instructors do not encounter constraints, and different learning components come together. An appropriate environment is where the student, an important stakeholder of interaction, willingly participate in the process. The student should find opportunities to acquire knowledge, have fun, learn, and achieve satisfaction in this environment. An appropriate environment refers to an interaction-based atmosphere which allows for psychological and social integration. All elements which are stakeholders of teaching are transformed into elements that fit to the nature of the student. The environment is one of the basic factors which define the character of teaching and impact student satisfaction.

Integrity in teaching: Integrity in teaching refers to conveying information from the same discipline or different disciplines to the student without breaking the body of information into pieces. Integrity in teaching is to allow students use their holistic and higher-order thinking skills to use information from different disciplines to solve problems which they encounter. The purpose of making connections between other courses and interdisciplines in the teaching process is to ensure integrity in teaching to improve students' basic and higher-order thinking skills with a thematic approach. Integrity has a very important function in seamless and correct progress of the teaching process. According to Jacobs (1989) and Erickson (1995), the student improves his/her personal awareness and available potential thanks to integrity of teaching.

Encouraging learning: Teaching is an activity carried out in a purposeful and planned manner. Encouraging the student to learn is to create enthusiasm in the student and motivate the student. It is a process which aims to eliminate physiological and psychological deprivations of the student, trigger a behavior or an urge for a specific purpose, and maintain the behavior or the urge (Tevrüz and Sürekli, 1996:33). When motivating students to encourage them to learn, the question is whether to aim achievement motivation or commitment motivation. According to Başaran (1982, p. 178), it is preferred to prompt achievement motivation in some societies, while commitment motivation is preferred in others (Başaran, 1982: 178). It is essential to prompt the achievement motivation in the teaching process. Students who act with this motivation have more confidence and have less anxiety and take firm steps toward their goals. This allows students to cope with anxiety and improves perceived satisfaction.

Keeping up-to-date: One of the basic criteria related to adequateness of teaching services is designing decision-making processes in accordance with current conditions. Determining course contents according to current subjects and requirements of the specific industry helps meet student expectations and improves student satisfaction with education experience (Bjorklund, Parente, & Sathianathan, 2004).

Internalizing learning: Learning occurs as a result of a transformation process in individuals. The student respond to new stimuli, then accepts them, and finally advocate them in his/her cognitive world by integrating them. The individual begins to cognitively advocate his/her new experiences in the school when he/she reaches a level where individual-specific learning takes place.

Process-based evaluation: Process-based evaluation is a type of evaluation which allows for receiving constant feedback for the program by revealing difficulties encountered by students throughout the teaching-learning process and taking measures to eliminate such difficulties (Fitzpatrick, Sanders, and Forten, 2004:16). It is part of a process where students are guided throughout the teaching-learning experience, acquire knowledge and skills, and practice-based learning-teaching strategies are employed (Ashman and Conway, 1993: 56). It is a measurement and evaluation approach in which students are monitored within the process, supported for meaningful and permanent learning, and given feedback. Teaching process carried out with this approach allows students to receive feedback any time and at any level.

It is essential for institutions to evaluate their teaching service performance according to student conceptions and experiences in order to maintain teaching quality within a process which involves change and competition. This study aims to evaluate teaching service quality in faculty of education based on student perceptions.

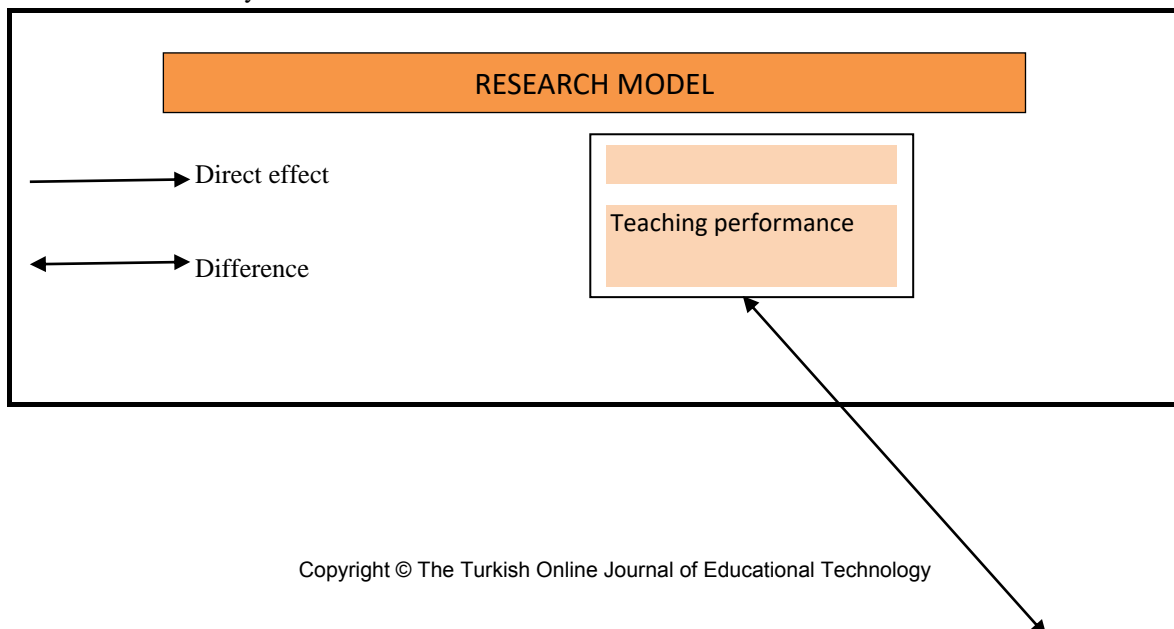
Problem: Students shape their perceptions regarding the quality of the teaching service provided by the educational institution depending on the institution's performance in the teaching process. This perception helps student form their opinion about the institution's value, integrate with the institution, digest their learnings, and internalize their professional competence. In this study, an attempt was made to answer the question, "What are the perceptions of students who attend the faculty of education to acquire competences required by the teaching profession?". Based on the main problem, sub-problems of the study were determined as follows:

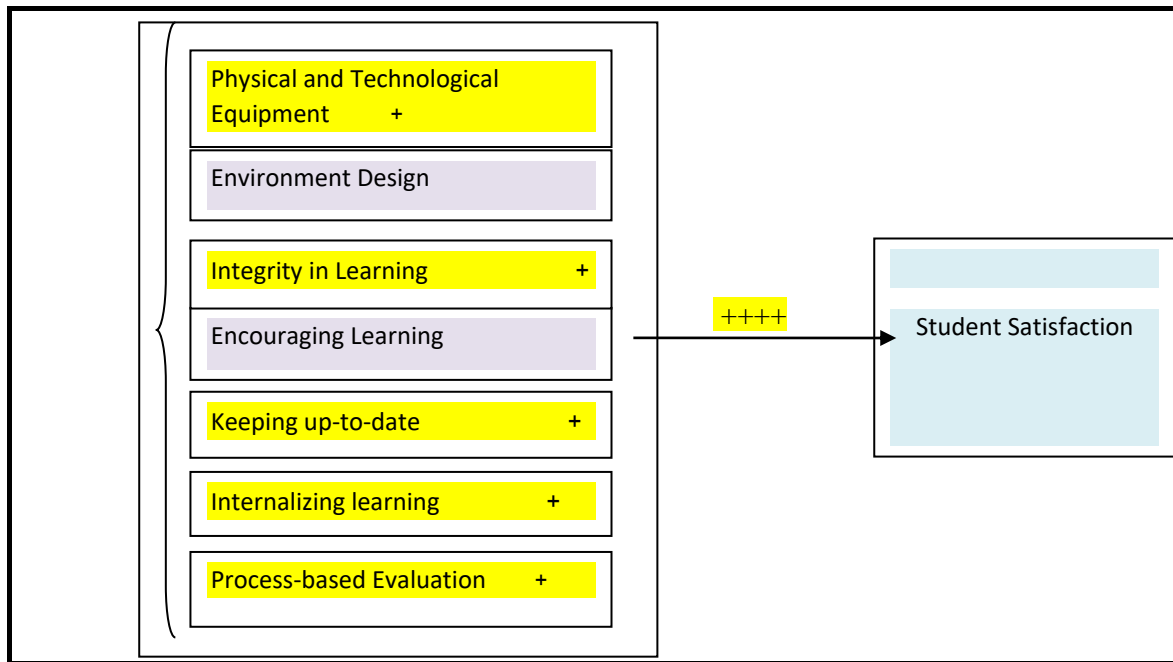
- 1) Is there a difference between genders in terms of satisfaction with teaching service quality?
- 2) Is there a difference between preference levels in terms of satisfaction with teaching service quality?
- 1) Is there a difference between departments in terms of satisfaction with teaching service quality?
- 4) Do variables of physical and technological equipment, encouraging learning, keeping up-to-date, integrity in learning, internalizing learning, and process-based evaluation affect student satisfaction?

3. METHOD

The purpose of the study was to determine perceptions of Faculty of Education students regarding the teaching service quality based on interactions and experiences in the learning process. To this end, the survey method was employed to describe the current situation.

The model of the study was constructed as follows.





The main elements of the model were determined by considering performance areas which are reflected at the end of the teaching process. Every student requires a physical teaching environment where he/she can meet his educational needs, appropriate technological equipment in this environment, stimuli and practices which encourage learning, presentation of up-to-date learning experiences and learning activities in integrity, applications which allow him/her internalize what he/she acquired throughout the process, and evaluation practices spread across the process so that he/she can make decisions about his/her situation. All of these activities are processes which administrators, instructors, and deputy administrators carry out in cooperation.

Measurement tool: Statistical values related to the validity and reliability of the measurement tool used in the study are given below. The measurement tool was a Likert-type scale consisting of 7 factors and 35 items. The principal component analysis of the scale showed that the eigenvalue was 12.79% in the first factor; 12.63% for the second factors; 8.36% for the third factor; 7.73% for the fourth factor, 6.26% for the fifth factor; 3.72% for the sixth factor, and 3.005% for the seventh factor. Model fit indicators obtained as a result of the confirmatory factor analysis performed for values produced by the principal component analysis were as follows: χ^2/df (2.64), RMSEA (0.061), SRMR (0.050), GFI (0.86), AGFI (0.83), NFI (0.92), CFI (0.95). In terms of scale reliability, all of the items in the scale were significantly discriminatory at $P=0.05$ significance level and item-total test correlation values were found to vary from 0.409 to 0.620. Test-retest showed that the correlation value between two applications of the scale was $r = .85$ and the Cronbach's Alpha internal consistency coefficient was calculated to be $r = .87$. The sample included 449 randomly selected third and fourth year students receiving teaching service for two or more years and enrolled in different departments of the faculty or fourth year students enrolled in the pedagogical formation program. Participation in the study was on voluntary basis. Surveys answered by the students were collected and the resulting data was entered into the package program for analysis.

Data Analysis

The data was analyzed in computer environment using SPSS 20.01 package program. "T test" was used in dual comparisons made to determine whether student satisfaction with teaching service quality was affected by gender, preference, and department variables or not, and one-way analysis of variance was used in comparisons between more than two variables. The significance level was $p = 0.05$ for all statistical calculations. Correlation values between dimensions were calculated to determine whether elements of the teaching service quality affected student satisfaction and then multiple regression analysis was performed to reveal how much independent variables affected student satisfaction according to correlation values.

4. FINDINGS

Table 1 shows the distribution of the students included in the sample by gender.

Table 1. Distribution of the students by gender

Branch	Female		Male		Total	
	Frequenc y	Percent	Frequenc y	Percent	Frequenc y	Percent
Science teaching	34	75.6	11	24.4	45	10.0
Elementary math. teach.	38	86.4	6	13.6	44	9.8
Pre-school teach.	45	.75	15	.25	60	13.4
Form teach.	29	64.4	16	35.6	45	10.0
Social studies teach.	37	77.1	11	22.9	48	10.7
Turkish teach.	30	60	10	40	40	8.9
PCG	30	60	20	40	50	11.1
History teach.	29	63	17	37	46	10.2
Mathematics teach.	20	60.6	13	39.4	33	7.3
Phy. ed. teach.	13	34.2	25	65.8	38	8.5
Total	305	0.679	144	0.320	449	100.0

As shown in Table 1, the ratio of the female students (%.679) enrolled in the Faculty of Education was higher than the ratio of male students (.320%).

Sub-problem 1: Is there a difference between genders in terms of satisfaction with teaching service quality?

Findings Related to Sub-problem 1

In order the answer the first question of the study, “Is there a difference between genders in terms of satisfaction with teaching service quality?”, the mean of the total satisfaction score of the students was calculated. *T*-test was performed to explore whether there was a significant difference between genders in terms of the mean of the total satisfaction score of the students. Results can be seen in Table 2.

Table 2: Results of the *t*-test performed to determine the difference between genders in terms of the mean of the total satisfaction score

Gender	N	X	SK	t	sd	p
Female	305	2.9760	.63558	.255	447	.799
Male	144	2.9597	.62259			

As shown in Table 2, there was no significant difference between genders in terms of the mean of the total satisfaction score ($t(447) = .799 : p > .05$). The mean score obtained by the female students from the satisfaction with teaching service quality scale was $\bar{x} = 2.97$, whereas the mean score obtained by the male students from the satisfaction with teaching service quality scale was $\bar{x} = 2.95$.

Sub-problem 2: Is there a difference between preference levels in terms of satisfaction with teaching service quality?

Findings Related to Sub-problem 2

In order the answer the second question of the study, “Is there a difference between preference levels in terms of satisfaction with teaching service quality?”, total satisfaction with teaching service quality scores of the students were calculated. One-way ANOVA was performed to explore whether there was a significant difference between preference types in terms satisfaction with teaching service quality. Results can be seen in Table 3.

Table 3. Results of the t-test performed to determine the difference between departments in terms of satisfaction with teaching service quality

Preference type	Sum of Squares	df	Mean Square	F	Sig.
Between the groups	2.751	4	.688	1.740	.140
	.064	1	.064	.162	.687
	1.078	1	1.078	2.727	.099
	1.673	3	.558	1.411	.239
Within the groups	175.508	444	.395		
Total	178.259	448			

As shown in Table 3, there was no significant difference between preference types in terms of satisfaction with teaching service quality scores ($F(444) = .140, p > .05$). It was observed that the preference variable did not lead to difference in terms of satisfaction with teaching service quality.

3. Sub-problem 3: Is there a difference between departments in terms of satisfaction with teaching service quality?

Findings Related to Sub-problem 3

In order the answer the third question of the study, “Is there a difference between departments in terms of satisfaction with teaching service quality?”, total satisfaction with teaching service quality scores of the students were calculated. One-way ANOVA was performed to explore whether there was a significant difference between departments in terms satisfaction with teaching service quality. Results can be seen in Table 4.

Table 4: One-way ANOVA performed to determine the difference between departments in terms satisfaction with teaching service quality

Departments	Sum of Squares	df	Mean Square	F	Sig.
Between the groups	9.599	9	1.067	2.776	.004
	1.806	1	1.806	4.701	.031
	7.793	8	.974	2.536	.010
Within the groups	168.660	439	.384		
Total	178.259	448			

As shown in Table 4, there was a statistically significant difference between departments in terms of satisfaction with teaching service quality scores ($F(9-439) = 2.776, p < .05$). According to the results of the Scheffe test performed to find which department caused the difference in satisfaction with teaching service quality, mean satisfaction with teaching service quality scores of the students in “Pre-school teaching”, “Form teaching”, and “Turkish teaching” departments were higher compared to the students in “Science teaching”, “Elementary mathematics teaching”, and “Psychological Counseling and Guidance” departments. While the students in the Pre-school teaching department had the highest mean satisfaction with teaching service quality scores with $X = 3.109$, the students in the Science teaching department had the lowest with $X = 2.62$.

Sub-problem 4: Do variables of physical and technological equipment, encouraging learning, keeping up-to-date, integrity in learning, internalizing learning, and process-based evaluation affect student satisfaction?

Findings Related to Sub-problem 4

Table 5. Arithmetic mean, standard deviation, correlation, skewness, and kurtosis values related to factors of the satisfaction with teaching service quality scale

	FTE	AE	IE	EL	KU	IL	PE
FTE	1						
AE	.313**	1					
IE	.543**	.252**	1				
EL	.494**	.402**	.441**	1			
KU	.173**	.240**	.160**	.319**	1		
IL	.404**	.263**	.398**	.558**	.366**	1	
PE	.407**	.273**	.320**	.340**	.121*	.103*	1
Arithmetic mean	19.871	13.759	16.755	11.781	9.276	7.155	6.9235
Standard deviation	5.5372	5.2519	4.8371	3.6666	3.0079	2.6032	2.21251
Skewness	-.428	.173	-.460	-.063	.163	-.300	-.202
Kurtosis	-.163	-.738	-.295	-.519	-.499	-.813	-.271

**Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlation values between the factors of the scale were significant at $p=0.01$ level. There was a positive relationship between correlation values between $r=0.18$ and $r=0.52$.

Table 6. Number of items in and Cronbach's α values of the factors of the satisfaction with teaching service quality scale

Variables	Number of Items	Cronbach's α values
Physical and technological equipment	6	0.83
Appropriate environment	8	0.84
Integrity in learning	6	0.64
Encouraging learning	5	0.76
Keeping up-to-date	4	0.77
Internalizing learning	3	0.64
Process-based evaluation	3	0.63

The relationship between two or more variables is calculated with Pearson correlation coefficient. The correlation value varies between -1 and 1. A value of -1.00 or +1.00 indicates excellent correlation. If the value is negative, there is negative correlation, and if the value is positive, there is positive correlation. As shown in the table above, variables related to teaching service quality (Physical and technological equipment, Appropriate Environment, Encouraging learning, Keeping up-to-date, Integrity in learning, Internalizing learning, and Process-based evaluation) were found to influence student satisfaction positively. Physical and technological equipment ($\alpha = 0.83$) in the environment where teaching is carried out was found to influence student satisfaction positively at 0.01 significance level. This was followed by Appropriate Environment ($\alpha = 0.84$), which was also found to influence student satisfaction positively at 0.01 significance level. There was a high correlation between Keeping up-to-date ($\alpha = 0.77$) and student satisfaction. This was followed by Encouraging learning ($\alpha = 0.76$), which refers to a teaching approach that motivates and guides students and help them focus on their goals. There was a correlation between satisfaction and Internalizing learning ($\alpha = 0.64$) as well, which is a dimension necessary to ensure students understand, construct, and practice what they learn. There was a moderate correlation between satisfaction and Integrity in learning and process-based evaluation ($\alpha = 0.63$) factors.

Table 7. *Results of the general regression analysis regarding predictive power of independent variables for the dependent variable*

	Standardized Coefficients	t	sig	Colinetary		
				Tolerance	VIF	
Physical and technological equipment	.512	13.442	.000	.575	1.740	hypothesis accepted
Appropriate environment	.029	.907	.365	.795	1.258	hypothesis rejected
Encouraging learning	-.011	-.308	.758	.642	1.557	hypothesis rejected
Keeping up-to-date	.463	11.662	.000	.529	1.892	hypothesis accepted
Integrity in learning	.103	3.244	.001	.831	1.203	hypothesis accepted
Internalizing learning	-.141	-3.747	.000	.593	1.687	hypothesis accepted
Process-based evaluation	-.038	-1.133	.258	.759	1.317	hypothesis rejected
Adjust R ²	.627					
F	108.397					
Sigma	.000					

The multiple linear regression analysis which was performed to determine whether independent variables believed to be effective on student satisfaction (Physical and technological equipment, Encouraging learning, Keeping up-to-date, Integrity in learning, Internalizing learning, and Process-based evaluation) predicted the dependent variable (satisfaction with teaching service) showed a significant relationship between student satisfaction and variables of Physical and technological equipment, Encouraging learning, Integrity in learning, Internalizing learning, and Process-based evaluation ($R=0.796$) and the model was significant ($F(7-440) 0108.397$, $p>0.001$). As shown in Table 7, these seven variables explained satisfaction by %633 ($R^2= 0.633$). According to standardized regression coefficients, the order of importance of the predictor variables for student satisfaction were as follows: Physical and technological equipment ($Beta=0.512$), Encouraging learning ($Beta=0.020$), Keeping up-to-date ($Beta=0.11$), Integrity in learning ($Beta=0.463$), Internalizing learning ($Beta=0.103$), Process-based evaluation ($Beta=0.141$). Considering significance tests of regression coefficients, variables of physical and technological equipment ($p<0.05$), integrity in learning ($p< 0.05$), and internalizing learning ($p<0.05$) were seen to be significant predictors of satisfaction. The tolerance values (Collinearity) varied 0.529 and 1.892. As shown in the table, the multiple regression analysis produced a value of $R^2= 0.633$ for predictor variables. This result explained 63% of the variance in independent variables. This was significant at $p=0.05$ level. Tolerance values were within the expected range.

CONCLUSION AND RECOMMENDATIONS

In this study, student satisfaction was investigated based on gender, preference, and department variables, their satisfaction with teaching service quality scores were calculated and analyzed according to the variables. According to the findings, there was no significant difference between genders or preference levels in terms of satisfaction with teaching service quality scores. Students form their perception regarding teaching service quality based on their experiences and expectations. Enrolling in their preferred school increases their expectation and it seems that current practices are not so poor as to reverse their expectations. Satisfaction levels of the students in the Faculty of Education were usually above moderate. It was shown in a study conducted by Ko and Chung (2014), satisfaction of students with learning was moderately affected by instructor quality and academic performance.

Considering student satisfaction according to department, it was found that satisfaction level was higher in departments such as the pre-school teaching department and the form teaching department, whereas it was lower in the mathematics teaching department, science teaching department, and the psychological counseling and guidance department. It is reported in the literature that students who perceive behaviors of instructors positively have higher academic achievement and there is a positive correlation between achievement and attitude (Akkoyunlu, 2003; Baykul, 1990; Elçi, 2002; Özler, 1998). Our finding might have resulted from attitudes and behaviors of instructors in the department, their competence to communicate with students, or their instruction style.

Physical and technological equipment, using up-to-date approaches in teaching, carrying out the teaching process with a holistic approach, and performing activities which help students internalize what they learn seem to be variables that influence satisfaction. The following measures may be taken in light of findings obtained. Student quotas in education faculties should be determined taking short- and long-term requirements of the country. Physical structures in education faculties (buildings, classrooms, conference halls, Libraries, laboratories, workshops, practice centers, and other spaces) should be designed in a way that they will support a student-centered approach and active learning.

The teaching environment, the number of students in the classroom, the active course load of each instructor should be determined in accordance with international standards to improve the effectiveness of programs in the faculty of education.

Programs in the Faculty of Education should be updated in regular intervals to meet student requirements. Changes implemented in a planned manner should be revised in accordance with elements of the program. E-libraries open to common access should be established to share significant studies conducted in relation to education faculties.

Guidance services should be provided throughout the teacher training process with a holistic approach which will meet psycho-social and physiological requirements of students.

The internalization process should be supported by providing a training program based on graduate standards. The training program should cover all qualifications required to be an expert.

The number and quality of education faculties in the country should be determined according to social requirements and revised according to scientific findings with an approach which does not ignore student requirements.

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Scale Development and Validation for Career Aptitude Test for Designers in South Korea

Imjoo GIL
Dongseo University

Daedong HAHN
Pusan National University

ABSTRACT

Career Aptitude Test for Designers (CATD) was developed through a series of research in South Korea. The test was intended for future designers to check if they have design talents or aptitude. This is a direct and supportive manner of guiding students in their design-career decisions. Three previous studies on developing CATD were presented briefly, focusing on the structure of CATD items. The participants in the present study were 1,251 students majoring in design (a 4-year course) at 13 universities across S. Korea. The structural model of CATD was evaluated with confirmatory factor analysis, which is the first follow-up empirical study since its standardization in 2009. Results showed that the seven-factor model of ‘basic design competency’ and the five-factor model of ‘advanced design competency’ provided a good fit. It was concluded that CATD is a useful instrument for university students in S. Korea to identify their aptitude as future designers.

Key words: Career Aptitude Test for Designers, Scale Validation, Design Ability, Basic Design Competency, Advanced Design Competency

INTRODUCTION

The attempt to develop a career aptitude test for future designers to check if they have design talents or aptitude was borne from the lack of direct and supportive manner in South Korea (S. Korea) to guide students in their design-career decisions. In particular, the need for objective methods that complement performance-based assessments has led to a series of research to develop the ‘Career Aptitude Test for Designers (CATD)’. The test was developed to guide design-major college students, who would want to diagnose their aptitude as a potential designer and to explore the specific majors within the design field (Gil, Park, & Yang, 2009). Before the emergence of CATD, students who were interested in exploring their aptitude as potential designers were used to being limited and confused, having no other way to check their design aptitude except for their portfolio to be examined by an expert designer. Colleges and universities in S. Korea provide students with support systems such as career counseling centers with psychological tests. Students who plan on a college major in a design field, and who ponder about their specific major area, could also use one of the vocational interest tests or multiple aptitude tests, which include sub-tests for spatial ability, perceptual reasoning, and sometimes personality tests related to certain careers. However, these tests are merely an indirect way of evaluating their aptitude as potential designers. Often, the advices they get are easily fallible and based on intuitive and aesthetic judgment rather than objective methods.

In recent years, the design field has become more specialized, multidisciplinary, and commercialized compared with the past, providing more promising career paths for students, but at the same time, causing more confusion and uncertainty to the students. Furthermore, the number of freshmen in design schools who start their university without performance-test screening before admission is increasing in S. Korea (Gil, 2011). This situation also causes those students to be, at times, uncertain with their abilities and future careers in the field of design. There has not been any follow-up research to update the norms of CATD that can meet the demands of those changes during 4 years since its standardization. Hence, due to recent changes and the need for follow-up research, this study was planned to verify the validity of CATD to ensure if the test is still psychometrically appropriate, using a sample of current design-major students in universities in S. Korea.

RELEVANT LITERATURE

Though there has been no direct history to measure design aptitude objectively, related literature can be classified into four topics. First, artistic judgment aptitude, which is a foundational aspect of artistic ability related to visual preference that contributes to artistic expression (Bezruczko & Frois, 2011), was developed as a psychometric construct. Second, researchers wanted to evaluate what children have learned in their art and design subjects in primary and secondary schools. Thus, they developed objective achievement tests to assess students’ visual art learning. Third, the model curriculum for art and design subject in elementary and secondary school has been studied continually. Fourth, the selection criteria during college admissions for those interested in art and design have been controversial.

Although the history of measuring artistic judgment aptitude had begun as early as the beginning of the 20th century in the US, artistic judgment aptitude today still does not have an objective or reliable method of

identification (Bezruczko & Vimercati, 2004). Eysenck (1972b) reported three tests of aesthetic sensitivity in 1970s and they were proven capable of measuring the effect of specialized training rather than aesthetic sensitivity. Researchers have conducted studies of children's preference for visual stimuli with polygons or other visual designs (Bezruczko & Schroeder, 1996). Numerous empirical evidence on artistic judgment testing during the first half of the 20th century had led to the development of many visual memory tests such as the Benton Visual Retention Test (1974), Wechsler Memory Scale (revised, 1987), Biber Figural Learning Test (1989), and Continuous Visual Memory Test (2003). Some of these tests were used in clinical practice. With these tests, researchers have put more emphasis on comparing the artists' and the laypersons' visual preference on perception. A research finding showed that laypersons prefer more complexity in both abstract and figurative images than artists, who tend to prefer less complex, more coherent images (Bezruczko, 2002). Gordon (2005) argued that children with an aptitude for drawing, whether they are autistic or not, had a facility for seeing wholes in terms of their parts rather than as unified gestalts.

One of the problems that hinders the development of objective tests on artistic and design aptitude and achievement is that art educators or experts do not want or like to depend on objective tests even though they agree on the need for tests. Rayment and Britton (2007) noted that the concept of art and assessment is mutually and implacably hostile. Hickman (2007) argued that some aspects of learning in art and design should not be assessed at all. Although activities of art and design are essentially unique and creative, another line of research noted the need for objective tests that complement performance-based assessment (Frechtling, 1991).

In England and Wales, a statutory requirement for teachers to assess art and design subjects has been in existence since 1997. A scale of 1 to 8 was introduced to art and design subjects as with other subjects. Not only have researchers tried to develop a method to measure artistic judgment aptitude, but they have also developed objective achievement tests to assess students' visual art learning.

The problems in identifying design aptitude are similar to the issues with identifying artistic judgment aptitude. It is not certain what the underlying dimensions and factors are with regard to the talents designers have and how to measure such talents or abilities before students start their career. Most of the prestigious schools of art, design, and architecture require applicants to submit 10 to 20 slides of their work. The fundamentals to be included in an applicant's portfolio are a self-portrait, landscapes, still-lives, and a figure drawing. All works should be from personal observations and should show experimentation with color, perspective, and composition, though deciding what to include in a student's portfolio is very subjective (Hoek, 1991).

To develop an objective test for identifying design aptitude, the underlying abilities or factors of being a designer should be identified specifically with empirical validation, not with relying on simplistic folklore formulations. Few have tried to find out those underlying factors. Csikszentmihalyi & Robinson (1990) proposed perceptual, emotional, intellectual, and communicational dimensions for aesthetic experience. For visual and performing art curricula, there are lists of learning objectives as a statewide model curriculum in the US. By categorizing these learning objectives in the state of Illinois, Bezruczko (1992) showed empirical delineation for dimensions of visual art learning as six components.¹ Analysis found that three primary factors (perceptual sensitivity, physical sensitivity, and knowledge of tools) were sufficient to describe the response to the measurement items for Grade 3 learners. Hickman (2007) noted that the General Certificate of Secondary Education (GCSE) examination of art and design in the UK assesses nine abilities.² Bezruczko & Frois (2011) conducted a research for cross-cultural comparison of the dimensions of artistic judgment aptitude targeting schoolchildren between the ages of 9 and 10 years. Two dimensions, simplicity and uniformity, based on the principle of order and complexity showed stability across the Chicago and Lisbon samples. As most of the studies on artistic judgment aptitude and assessment focused on primary and secondary school students' abilities for arts and design subjects, they are not sufficient to identify underlying abilities or factors of talents of a designer for students in early collegiate years.

CATD IN SOUTH KOREA

A series of research was conducted in S. Korea to identify underlying factors of aptitude of a designer. The first study was an overall attempt to investigate underlying factors of 'design career aptitude' from previous job analysis of designers and relevant literatures. After preliminary items were developed, the content validity of those items was examined three times by experts in the field of design. The corrected items were administered to 506 design-major students at universities located in a metropolitan city (Gil & Yang, 2006).

The second study began to conceptualize dimensions of design abilities and to identify detailed abilities and personal qualities in each dimension which is required from future designers. A total of 427 freshmen and sophomore design students at universities in big cities participated in the preliminary test of 20 items of 'basic design competency' and 20 items of 'practical design competency'. After exploratory factor analysis (EFA), 18 items were selected, which measure the four factors of 'basic design competency (BDC)' such as creativity, imaginative ability, planning and initiative ability, and aesthetic sensitivity. Another 18 items were selected which measure four factors (formative ability, sense of color and texture, power of expression, and computer skills) of 'practical design competency (PDC)'. Confirmatory factor analysis (CFA) was conducted with a

reference group which consisted of 335 design-major juniors, seniors, and graduate students at a university. The model of 'BDC' and 'PDC' scales showed over .900 of index (NFI .987, IFI .994, CFI .993) (Gil & Park, 2006). The third study was composed of three consecutive studies. In the 3-1 study, a latent dimension of advanced design competency (ADC) was introduced to identify areas of specialty students have in their interests and patterns of behavior as beginning students in design at a university level. Eighteen items of BDC, 27 items of PDC, and another 27 items of ADC were tested by 516 design-major undergraduates and graduates in a metropolitan area. EFA showed that 18 items which were composed of the four factors of creativity, aesthetic sensitivity, imagination, and planning and initiative abilities were extracted to measure BDC, same as with the second study. For PDC, 20 items were selected which were composed of four factors (formative ability, power of expression, computer skills, and craftsmanship). For ADC, 21 items were selected that measured five factors, namely, fashion, visual, product, media, and space design.

In the 3-1 study, factors that have the most loading value in EFA for PDC items appeared to include a mix of formative ability, power of expression, and a sense of color and texture, unlike the result of the second study. A new fourth factor, 'craftsmanship' was extracted. This means that PDC items are unstable in terms of validity compared with the other two dimensions (BDC and ADC). BDC means basic qualification and the ability required in a design activity including innate tendencies. On the other hand, PDC items are mainly intended to measure acquired competency by education and experience. However, unlike expectation, these two dimensions appeared to be complementary, which is difficult to differentiate between the two dimensions.

In study 3-2, 22 modified items of BDC, 26 items of ADC, and 15 items of PDC were administered to the first nationwide sample. The participants were 1,993 students majoring in design from 16 different universities across S. Korea. Analysis showed instability in the validity of the PDC items, as was the same result in study 3-1. It was concluded that PDC items should be included in the dimension of BDC rather than be an independent dimension.

In study 3-3, final item selection was conducted where 871 university students majoring in design nationwide participated. After EFA, 4 items which show over 0.30 factor loadings on two or more factors were eliminated. BDC turned out to include seven factors, namely, formative ability, imaginative ability, craftsmanship, creativity, computer skills, planning and initiative ability, and aesthetic sensitivity. ADC turned out to include five factors, namely, measure product, space, fashion, media, and visual design. Finally, the CATD was completed with 31 items for BDC and 24 items for ADC. Reliability coefficient for BDC was .89, and for ADC, it was .90 (Gil, 2009). The research summary when developing CATD is shown in Tables 2 and 3.

THE PRESENT STUDY

The present study extended the validity of CATD through the administration of the test to bigger nationwide samples of S. Korean students majoring in design at universities to examine the invariance of the internal structure of CATD. This attempt was the first follow-up validation study after 4 years since the first standardization of CATD. Evidence of structural invariance across different samples with 4-year interval would support the further validity and generalization of CATD.

The model of CATD structure hypothesizes that (a) the BDC response scale can be explained by seven factors, and that of ADC can be explained by five factors. It also hypothesizes that (b) the seven factors of BDC are correlated, and the five factors of ADC are correlated; and (c) the error/uniqueness terms associated with the item measurement are uncorrelated (Figures 1 and 2).

METHOD

PARTICIPANTS

The participants in this study totaled 1,251 design-major students at 13 universities (4-year course) across S. Korea (Table 1). More than 10% of total design-major students nationwide at four-year universities in S. Korea participated. The total number of students majoring in design at four-year universities in S. Korea were 11,440 (2011, KEDI)³. They are ethnically all Korean students between the ages 19 and 24 years (mean age: 21.6 years old); the number of male students is 284 (23.6%) and female students are at 917 (76.4%). The 13 universities are located in a city, two among them (Seoul, Pusan) are metropolitan cities. The 13 four-year universities have a fairly larger student body enrolled at their School of Design compared with other universities in S. Korea. The participants all belonged to the School of Design, not to the College (Department) of Fine Art.

MEASUREMENT AND PROCEDURE

The CATD consists of 55 self-report items structured on a 6-point Likert scale, from 1 (has never been done) to 6 (always do). 31 items among them belong to the dimension of BDC and 24 items to ADC. BDC items measure basic and necessary competence, and the behavioral patterns of a designer. ADC items identify areas of specialty students have in their interests and behavioral characteristics as beginner students in design. Through a series of research on scale development presented earlier, the underlying structure of CATD has been established on empirical and theoretical bases. The scale of BDC consists of seven factors and each has its own

items: 7 items of formative ability (the ability to organize abstract notions to practical outcomes), 6 items of imaginative ability, 5 items of exquisite craftsmanship, 4 items of creativity, 3 items of computer applicability, 3 items of planning and initiative ability, and 3 items of aesthetic sensitivity. The scale of ADC is composed of five factors: industrial (6 items), space (5 items), fashion (5 items), media (4 items), and visual design (4 items). Cronbach's alpha for BDC is .89 and for ADC, .90. The CATD has been commercially marketed since 2009 in S. Korea (appendix).

Administering the CATD was permitted by a representative faculty member from the School of Design of each 13 universities through review of the test items. Students were guided during the test and were informed on possible advantages they could get from the results. Some faculty members took advisory roles for the test construction process, as they agreed that the needs for an objective test to identify the design aptitude for a targeted age group were gradually expanding. The CATD was administered to the participants by graduate assistants or staff members working at the department office. CATD results were handed over to each student. After excluding doubtful and incomplete responses, 1,202 responses were used for the analysis of validity by CFA using Amos21.

CFA was performed to examine if the seven-factor structure of BDC and the five-factor structure of ADC in CATD were supported. Goodness of fit was evaluated using the root mean square error of approximation (RMSEA), comparative fit index (CFI), and Tucker-Lewis index (TLI). Acceptable model fit was defined by the criteria of RMSEA value close to .08 or below, and that of CFI and TLI value are close to 0.90 (Brown & Moore, 2012).

RESULTS

Table 4 shows the indices for goodness of fit to each BDC and ADC scale for the present study and for the study 3-3 data collected in 2008. RMSEA under .06 means a very good fit, and RMSEA between .06 and .08 means a good fit (Hu & Bentler, 1999). In Tables 4, RMSEA values for both scales of BDC and ADC show .063 and .067 each, which are a very good fit, while CFI and TLI values show a bit under 0.90. When compared with the 2008 data, the RMSEA value of BDC (.63) in the present study shows a very good fit similar to the value of the old data (.61), and the RMSEA value of ADC also shows a good fit in both present study (.67) and the old data (.70).

The values of critical ratio and P on the statistical tests of regression weights for the influences of latent variables to each items in the proposed model show significance. In other words, the regression weight for formative ability in the prediction of item no. A2 is significantly different from zero at 0.001 level. All the regression weights in figure 1 and 2 show statistically significant values. Variances of latent variables, that of the error/uniqueness terms, and covariance of each latent variables in BDC and ADC showed statistical significance.

Internal consistency by Cronbach's alpha for the BDC scale is .894, and when each item is removed, the alpha shows .888 to .896. Only one item (item no. 29) showed a higher alpha (.896) when removed. Cronbach's alpha for the ADC scale is .879. When each item is removed, the alpha ranges from .871 to .879. The only one item (item no. B49) showed a higher alpha of .879 than .871 when removed. Using the criterion of 0.30 as an acceptable correlation (Nunnally & Bernstein, 1994), correlations between the items of BDC and total BDC score range from .389 to .624, only item number 29 showed a correlation coefficient of .252. Correlations between the item of ADC and total ADC score range from .384 to .605. No correlations were found to be under 0.30.

DISCUSSIONS

The present study examined the validity of the internal structure of CATD. To this end, 1,251 design-major university students in S. Korea participated in the test. Analysis showed that the seven-factor model of BDC and the five-factor model of ADC provided a good fit for the present nationwide sample, which shows a same good fit as the result of study 3-3.

While χ^2 is reported routinely in the result of CFA, other indices are more heavily used for evaluating goodness of model fit. The most widely accepted global goodness of fit are RMSEA, TLI, and CFI (Brown & Moore, 2012). Based on the RMSEA, it is concluded that the CATD is psychometrically valid self-report instrument for future designers.

Items which showed correlation coefficients under .30 are presumed not to measure similar psychological constructs as other items. In this research, however, due to the large sample size and the fact that correlation coefficients are influenced by sample size, item number 29 which showed a lower correlation coefficient between item score and total BDC score can be considered to measure similar psychological constructs.

The result showed that the structure of CATD has enduring qualities that represent the aptitude of design students over a 6-year period, even though there have been recent changes of specialized and multidisciplinary trait and an increase in the number of students who start university without a performance test or portfolio evaluation in S. Korea. Meanwhile, the interpretation of CATD result should be careful in that this research does

not prove that these dimensions of design aptitude represent qualities that are independent of training or education to be a designer or the innate aspect that takes shape early in development before adolescence. Further research needs to be extended to test the validity of CATD to high school students and to designers working in related areas.

CATD has been used occasionally for students at universities (4-year courses) during counseling on their career decision-making in S. Korea. The empirical verification of the internal structure or underlying factors which comprise the aptitude as a potential designer is in the beginning stage in S. Korea, except for a few attempts with a group of students in a university. Thus, this empirical validation study carries on much importance to the use of CATD afterward and eventually, it will help more students in deciding on their career.

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FOOTNOTES

Knowledge of terms, Knowledge of tools, Knowledge of techniques, Interpretation of an artist's affective intent, Perceptual sensitivity to subtleties in an artwork, Capacity to form cognitive inferences on the basis of visual information.

2Intuitive and imaginative abilities, critical and analytical faculties, the ability to solve problems in visual and tactile forms, the ability to research, the ability to organize abstract notions to practical outcomes, awareness and appreciation of the relationship between art and design and the individual within the historical/social/environmental context, acquisition of a relevant subject-specific working vocabulary, the individual's subject-specific special aptitude and interests, understanding of economic considerations in the inventive use of materials and techniques.

³kess.kedi.re.kr

Table 1. Number of participants

Region	Number of participants	Major	Number of participants
Seoul	248	Industrial design	306
Gyeonggi Province	268	Visual design	201
Chungcheong Province	352	Space design	151
Busan	214	Fashion design	172
Jeolla Province	120	Media design	41
		Communication design	70
		Interior design	166
		Digital contents design	30
		Division of design	40
		Edutainment	25
Total	1,202	Total	1,202

Table 2. Research outline of the first and second studies for developing CATD

	First study		Second study	
Purpose	To identify the subscales and factors that compose 'design career aptitude'		To identify the subscales and factors that compose 'design ability'	
Subjects	506 undergraduates majoring in design		-427 university students majoring in design (freshmen, sophomore) -Reference group (335): 257 juniors and seniors majoring in design, 78 graduates (master and doctorate)	
Analysis	① Content validity by 7 experts ② EFA		① Content validity by 8 experts ② EFA ③ Convergent validity: correlation analysis between sub-factors ④ Cross validity: CFA with reference group (335)	
Results: subscales and factors (variance explained, %) Reliability, α)	Basic job competency (48.4, $\alpha=.82$)	-Interpersonal ability(15.5) -Goal initiative (11.8) -Problem solving ability (11.5) -Self-development ability (9.5)	Basic design competency (60.7, $\alpha=.75$)	-Creativity (22.9) -Imaginative ability (13.4) -Planning skill (12.7) -Sensitivity (10.2)
	Basic design competency (57.0, $\alpha=.87$)	-Basic design skills (13.7) -Computer skills (12.92) -Sense of texture (11.40) -Formative ability (10.09) -Sense of color (8.84)	Practical design ability competency (60.0, $\alpha=.81$)	-Formative ability (18.4) -Sense of color and texture (16.7) -Power of expression (14.1) -Computer skills (10.2)

Table 3. *Research outline of the third study for developing CATD*

	Third study					
	3-1		3-2		3-3	
Purpose	Development of the preliminary scale for CATD and validation		Development of the final scale		Development of the final CATD	
Subjects	516 undergraduates and graduates of a design course		1,993 design-major (4-year course) students from 16 universities nationwide		871 design-majoring (4-year course) students from 8 universities nationwide	
Analysis	① Content validity(5 experts) ② EFA ③ Verification of differences (F) on each item of BDC, PDC, and ADC according to detailed major areas in design		① EFA ② Criterion-related validity		-EFA	
Results: Subscales and factors (exploratory variance, %); reliability, α)	BDC (58.1, $\alpha=.77$)	-Creativity (15.3) -Sensitivity (15.2) -Imagination (13.8) -Planning ability (13.8)	BDC (55.0, $\alpha=.89$)	-Formative ability (10.5) -Creativity (9.0) -Imagination (7.9) -Sensitivity (7.3) -Planning ability (6.8) -Computer skills (6.8) -Craftsmanship (6.5)	BDC (56.6, $\alpha=.89$)	-Formative ability (10.6) -Imagination (10.2) -Craftsmanship (8.2) -Creativity (8.1) -Computer skills (7.2) -Planning ability (6.8) -Sensitivity (5.5)
	PDC(60.6, $\alpha=.82$)	-Formative ability (19.2) -Ability to express oneself (15.9) -Computer skills (13.2) -Craftsmanship (12.3)				
	ADC (60.5, $\alpha=.73$)	-Fashion D (14.0) -Visual D (13.6) -Product D (12.7) -Media D (11.3) -Space D (9.0)	ADC (53.1, $\alpha=.87$)	-Space D (11.8) -Product D (11.7) -Fashion D (10.9) -Visual D (9.8) -Media D(8.9)	ADC (57.0, $\alpha=.90$)	-Product D (15.5) -Space D (11.9) -Fashion D (11.5) -Multimedia D (9.3) -Visual D (8.8)

Table 4. Goodness-of-fit indices for BDC and ADC

Present study						
model	χ^2	df	<i>p</i>	RMSEA	CFI	TLI
BDC(seven-factor model)	2409.648	413	.000	.063	.855	.837
ADC(five-factor model)	1544.843*	242	.000	.067	.885	.869
Study3-3						
model	χ^2	df	<i>p</i>	RMSEA	CFI	TLI
BDC(seven-factor model)	1761.259	413	.000	.061	.848	.817
ADC(five-factor model)	1283.252	242	.000	.070	.852	.829

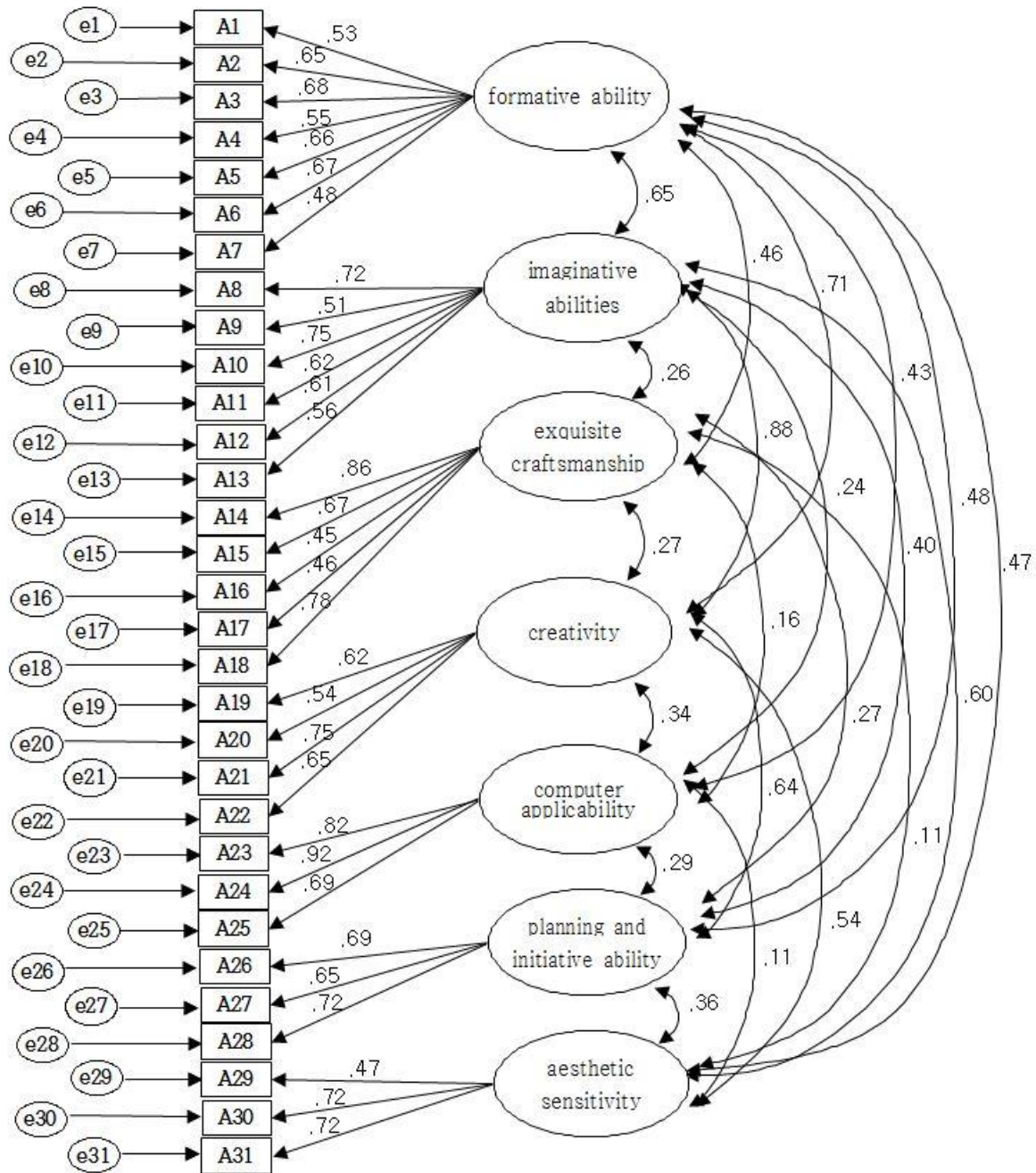


Figure 1. CFA: Seven-factor model of BDC (Standardized estimates)

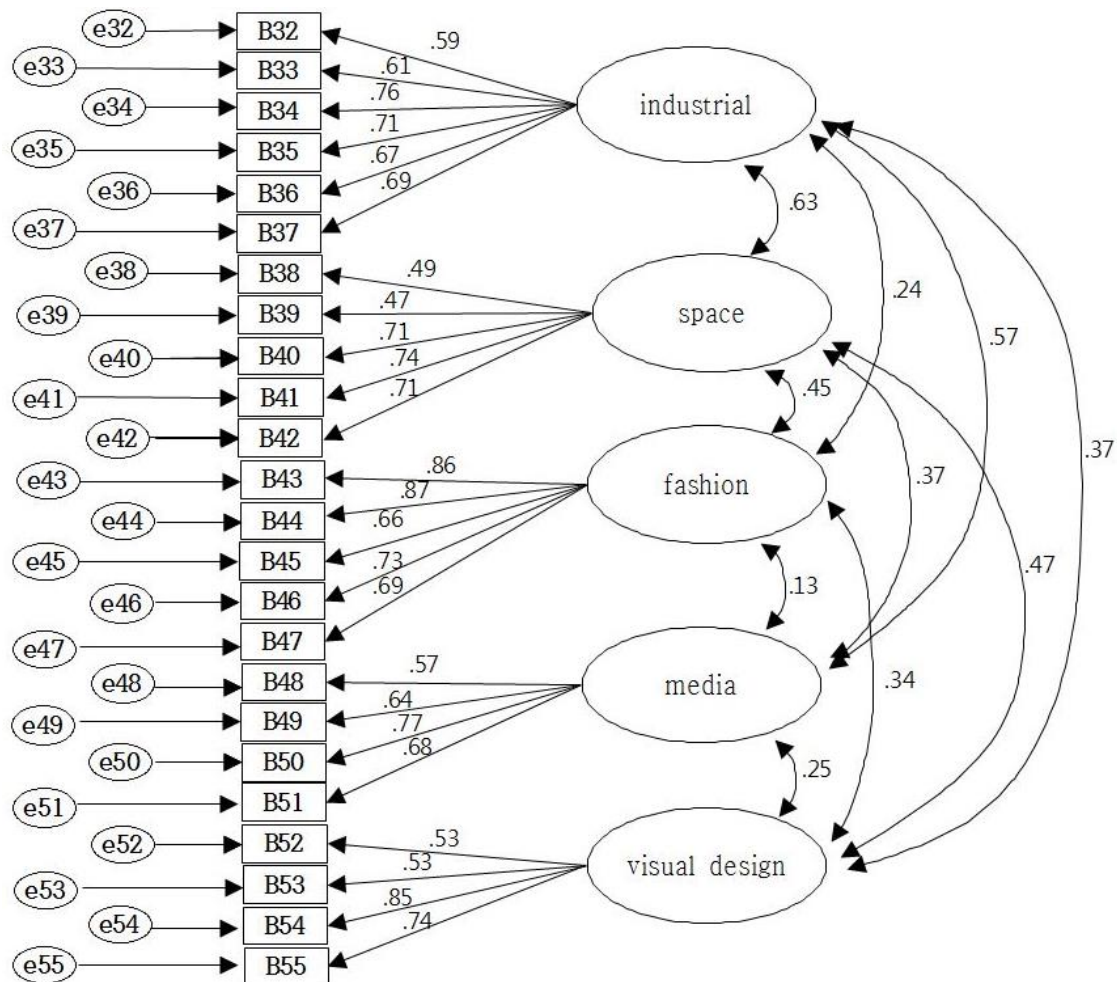


Figure 2. CFA: Five-factor model of ADC (Standardized estimates)

APPENDIX

Items in the CATD

Basic design competency (31 items)

	Never	Very Much
1. I am able to draw persons or things realistically.	1	6
6. I can transform three- dimensional shapes into new images easily.	1	6
7. I can feel delicate differences in color.	1	6
11. I am always thinking of new and exciting experiences.	1	6
12. I usually perceive persons or things in different perspective from others.	1	6
20. I tend to solve a problem more flexibly than others do.	1	6
21. I usually come up with a unique idea others are not likely to think of.	1	6
22. I am able to develop a rough idea into a well-organized exquisite one.	1	6
25. I like to work with computer graphics software (ex. Illustrations, Photoshop).	1	6

..... ① ② ③ ④ ⑤ ⑥

Advanced design competency (24 items)

	Never	Very Much
32. I am able to think of aesthetic and ergonomic aspects simultaneously when using a product.....	① ② ③ ④ ⑤ ⑥	
37. I am able to identify a solid figure easily by looking at the planar figure.....	① ② ③ ④ ⑤ ⑥	
39. I am able to position and find a way using a rough map.....	① ② ③ ④ ⑤ ⑥	
45. I can easily identify a characteristic of any brand after looking at a certain product.....	① ② ③ ④ ⑤ ⑥	
46. I am especially interested in fashion shown in mass media.....	① ② ③ ④ ⑤ ⑥	
49. I am especially interested in video work (three-dimension, animation, motion graphics).....	① ② ③ ④ ⑤ ⑥	
54. I am able to express a core image using a terse sentence or a word.....	① ② ③ ④ ⑤ ⑥	

Scale of Social Values in Turkish Folklore

Azmiye Yinal

European University of Lefke

Nuran Soytekin

Near East University

Habib Derzinevesi

Near East University

ABSTRACT

This research is modeled according to the descriptive survey model. Research collects data from existing properties of participants without any changes and try to get the views of participants about existing situation. Description method is aimed to describe research approach in existing situation or the past. The subject of the research, attempt to define their terms. There is no struggle for affecting or changing the situation. The most significant thing is observing the required object and identifying it. In this regard, the research model is based on the model of descriptive scan to determine social values in Turkish Folklore.

Key words: Turkish Folklore, Social Values

INTRODUCTION

Folk can be used with the names of the people or tribes that emerged together with the birth of the groups in which the work is divided, such as political, religious, economic and social events. Folks are more important because they have the characteristic of living under cultural qualifications and preserving their cultural characteristics (Yardımcı 1999: 1).

Folklore is a science which is closely related to sciences such as Sociology, Ethnology, Social and Cultural Anthropology, Psychology, Literature, Linguistics, History, Art History, Medicine, Geography and Law. When in need, it may have been benefitting from that discipline's methods and findings and comparisons may have been done by creating a parallelism between the datas regarding to the folklores of other countries. (Kalaycı 2014: 2).

Beside these concepts and values with significant value for the people and for the people in science have taken their place among the issues discussed in many disciplines.

While it has been emphasized on the subject of values, it appears that it has not been made as clear as conceptual meaning (Dilmaç, 2002).

Folklore

In Turkey, the concept of folklore is generally used as folklore and started to used in European countries between 1913 and 1914. After the conquest of Istanbul, the age of discovery that started in Europe, have a significant share in the spread of the concept of reform and Renaissance movements. As a result of discoveries, urbanization and industrialization, the humanism, romanticism and enlightenment including cultural and political influences have emerged. The contribution of the new dimensions and interpretations which is coming with the French Revolution to the public approaches can not be denied (Oğuz 2012: 14).

When we look at the products of popular science, it is seen that some of verbal, some of them are created and transmitted by the behaviors, some of them are transmitted together with the words and behaviors. It is possible to say that certain features such as traditional, diversity, stereotyping and adoption in the form of folk art products, verbal production and oral transmission based on the word are clear (Durbilmez 2013: 104).

There are some common judgments that are agreed by some national scientists for a public consciousness that examines the material and spiritual cultures of the people's strata from a psychological and sociological point of view in terms of history. It is possible to list them as follows (Yardımcı 1999: 4-5):

1. Folklore forms the science of traditions
2. It examines all the actions that are believed and practiced by the traditions inherited from the ancestors.
3. The tradition that the people have learned for themselves includes legends, word order, riddles and beliefs about stars and magic, as well as information and practices..
4. It includes the cultural remnants, even if it is more or less deteriorated day by day.

As a result, everything that is peculiar to the public in relation to folklore can be called anonymous ancestry, tradition, knowledge and any social action of the people . The main reason for the formation of folklore is the development of national romanticism and the simultaneous formation of nationalist movements of folklore spread in Europe.. In this process, among the Ottoman Turks, the idea of Ottomanism is tried to be kept alive instead of nationalism. For this reason, the development and results of public approaches in Europe have not attracted much attention of Turkish intellectuals (Oğuz 2012: 14).

In the Ottoman society, there is a distinction between the educated-cultivated class(havas) and plebs(avam). In this case; The conception corresponding to the meaning of the concept of the people used in the 19th century, began to be used as equivalent to the concept of the peasant after the 20th century in Europe. The separation of this class, which has been transformed by the changes in the management system, has become a full distinction between peasant and urban. When the studies of the public were accelerated and started to develop, the first public arts researches in our country were made within the scope of the villagers and villages. The 19th century is closely related to the notion that the concept of folklore does not define these games because of the fact that the first public arts researches on the popular folklore that make up some of the popular knowledge, is another reflection of the concepts of folk and folklore used in Europe. Even today still can not be corrected as a folklorist arising from this wrong, expressions like Folklore and Folk Team Play are among the problems from that period (Ekici 2012: 4).

The transfer of national culture and Turkish folklore towards young people should take place among the tasks of national education. The best way to do this is to transfer it to literature and history. In this way, however, individuals will be able to acquire a national identity and live a life compatible with the society that they live in.(Cemiloğlu 2003: 15). It can be said that the language, which is the most important carrier of the cult, is in the best works of literature and the way of culturing and educating a nation culturally is also passed through literature because almost all of life and life view styles are reflected in these works. This culturing emerges as both learning in literature and history, as well as monitoring the development of Turkish culture, which is reflected in literature. (Özbay 2002: 115). As a result, it is possible to say that Turkish society is rich in cultural and social terms. However, it is vital that these values are transferred to the new generation correctly.

Social Values

Values can be defined as standards, beliefs, or moral principles that are accepted within an individual or social group. (Collins, 1991: 1694). It is also possible to say that your values are comprehensive and empowering principles and beliefs that guide the human being in their lives and bring together the societies as well as the distinction between the groups (Avcı, 2007: 21).

The whole of the principles or means that can be used to measure the material and spiritual needs of people and their separation from other assets can be called social value. The most important characteristic of social values is the extent of behavior and activities. In short, social values offer us criteria and measures to understand what is wrong, good and bad, beautiful and ugly. Social values are people-specific and universal. It is also bipolar and has parallelism and integrity in itself. In addition to these, happiness and lack of social values give people unhappiness. It is possible to say that the need for social values is above all needs (Sarı 2013: 202).

METHODOLOGY

The Method of Research

This research was modeled according to the descriptive scanning model. Data were collected without any changes in the characteristics of the participants of the research and the opinions of the subjects were tried to be taken about the present situation. It is a research approach that aims to describe the way of description as it is, or as it exists, as it exist The method of description is a research approach which aimed at describing the past or present situation as it existss. It is attempted to describe the event that is the subject of the investigation as if it is within its own conditions. The effort to change and influence the event is not shown. In this context, the research model is based on a descriptive screening model.

Analysis Of The Data

SPSS 23.0 package program was used in the analysis of the data obtained from Scale of Social Values In Turkish Folklore and applied to the sampling participant. Frequency analysis was applied for the demographic and personal information of the sample participants. Frequency analysis is used to tabulate the numbers and percentages to describe the values of one or more variables or their distribution characteristics. The findings are tabulated and expressed as percentage (%) and frequency (f). As a result of the data obtained from the sample participants, in the analysis of the sub-problems of the research, The Independent test was used to test whether the scores obtained from two unrelated samples varied significantly from each other. ANalysis Of Variance(ANOVA) was used to test whether two or more unrelated sample averages significantly differed from each other. In order to determine the difference between the groups when the ANOVA results were significant, the Scheffe test was used if the variances were homogeneous and the Tamhane's T2 test was used if the variances were homogeneous. Numerical improvements were interpreted and interpreted as tabulations, and a significant difference between the independent variables was tested at $\alpha = 0.05$ level.

FINDINGS AND COMMENTS

This section of the survey sample included disclosure of demographic information and research belong to the bottom so that you can install the resulting data to respond to problems of statistical methods and analysis to the findings and interpretations of these findings.

1. Scale Validity and Reliability Analysis Results

A validity and reliability analysis was conducted for the scale measured by the Social Values Scale in the Turkish Folklore Scale used in the research part of the study. Cronbach's Alpha test statistic was used for the validity and reliability of the questionnaires.

Cronbach's Alpha Coefficient, evaluation criterion;

$0.00 \leq \alpha < 0.40$ scale is not reliable.

$0.40 \leq \alpha < 0.60$ Scale has low reliability.

$0.60 \leq \alpha < 0.80$ The scale is fairly reliable.

$0.80 \leq \alpha < 1.00$ The scale is highly reliable.

Table 1. Scale Validity / Results of Reliability Analysis

<i>Cronbach's Alpha</i>	<i>Number of Substance</i>
0,900	42

Table 1 sample group Scale of Social Values In Turkish Folklore "applied reliability, $\alpha = 900$ and highly reliable, so this value is sufficient for the research.

2. Interpreting Frequency Schedules

In this part of the survey, collective frequency distribution tables will be created and interpreted according to the personal information and scale included in the questionnaire.

Table 2. *Distribution of Participants*

		<i>f</i>	%
Gender	Female	39	39
	Male	61	61
	Total	100	100
Age	Age 20-30	20	20
	Age 30-40	44	44
	Age 40-50	36	36
	Total	100	100

As shown in Table 2, 39% of participants were female, 61% were male, 20% were 20-30 years, 44% were 30-40 years and 36% were 40-50 years old 100 individuals were included in the survey.

Table 3. *Descriptive Statistics for Sub-Dimension*

	\bar{x}	SS
I move with them to solve the problems of the people in difficult situation	3,64	1,20
I see competition as a tool to lead the to success.	3,77	1,17
I give great importance to my family.	2,65	1,27
I percieve as a opposite site who dont think in a same way with me..	2,88	1,30
It is important that people trust me.	3,39	1,29
I prefer to work alone to work together.	2,18	1,12
Religion can be effective in state administration.	3,31	1,23
I see the money as a power among people.	2,96	1,40
Women must play an active role in the management of family.	3,27	1,14
I know that the thoughts of the people who are in opposition can also be valuable.	2,07	1,17
I always appreciate hard working people.	2,10	1,16
If I get a job offer from another country, I can pass to that country.	2,18	1,29

As shown in Table 3, the participants of the sample, "I will move with them to solve the problems of the people in difficult situation", from the expressions of the " eagerness to learn " sub-dimension of Scale of Social Values In Turkish Folklore = 3.64 mean and SS = 1.20 standard deviation It is dispersed at the level of instability. It is distributed at the level of "unsteadiness" with a mean of 3.77 and a standard deviation of 1.17 with the expression "I see it as a tool to lead the competition to success". It is distributed at the level of "I do not care about the individuals in my family" with a mean of 2.65 and SS = 1.27 standard deviation. It is distributed at the level of "I do not consider people who do not fit my system of thought as a counterparty" with a mean of 2.88 and SS = 1.30 standard deviation. "It is important for people to trust me." = 3.39 mean and SS = 1.29 standard deviations. The expression "I prefer to work alone to work alone" is distributed at the level of I do not participate with a mean of 2,18 and a standard deviation of SS = 1,12. It is distributed at the level of "undecided" with a mean of 3,31 mean and SS = 1,23 standard deviation. "I see the money as a source of power among people." The expression is distributed at the level of I do not agree with the mean of 2.96 and SS = 1.40 standard deviation. It is distributed at the level of "unsteadiness" with a mean of 3,27 mean and SS = 1,14 standard deviation. It is

distributed at the level of "I do not know that people's thoughts of the opposing intellectuals may be valuable." With a mean of 2,07 and a standard deviation of SS = 1,17. It is distributed at the level of "I do not agree with the hard working people" with a mean of 2.10 and a standard deviation of SS = 1.16. If I get a good job offer from another country, I can pass to that country's nationality. "= 2,18 mean and SS = 1,29 standard deviations.

Table 4. *Descriptive Statistics for Sub-Dimension*

	\bar{x}	SS
I design new things in my dreams.	2,57	1,39
If seller make a discount at shopping,I do not take the bill.	3,52	1,15
my professional career is highly valued in terms of ethics	3,47	0,99
I accept the necessity of having a family.	3,28	1,14
Whatever it takes, I prefer to be honest all the time	2,97	1,27
I obey the general hygiene rules where I live.	3,23	1,25
	3,02	1,29
I like being good to others.	3,37	1,10
I try to stay away from the behaviors that would cause waste in daily life.	4,00	1,10

As can be seen from table 4, sample Turkish folklore participants who created the "Social Values" from the bottom of the scale size I design new things in my dreams."= 2.57 average and SS = 1.39 and it spreads with disagree level of the standard deviation. It is distributed at the level of "neutral" with an average of 3.52 mean and SS = 1.15 standard deviation.

It is distributed at the level of " neutral " with a mean of 3.47 and a standard deviation of SS = 0.99 in "my professional career is highly valued in terms of ethics"."I accept the necessity of having a family." this expression is distributed at the level of the neutral with an average of 3.28 and a standard deviation of 1.14. It is distributed at the level of "I do not agree at all costs" with a mean of 2.97 and SS = 1.27 standard deviations. It is distributed at the level of " neutral " with a mean of 3,23 mean and SS = 1,25 standard deviation, in the phrase "I follow the general hygiene rules in my living environment."

It is distributed at the level of " neutral " with an average of 3.02 mean and SS = 1.29 standard deviation. The expression "I like to be good to others." is distributed at the level of neutral with a mean of 3.37 and a standard deviation of SS = 1.10. "I try to stay away from the behaviors that would cause waste in daily life." Statement is distributed at the level of agreeing fully with an average of 4.00 and SS = 1.10 standard deviation.

Table 0 5 Scale of Social Values In Turkish Folklore,Identification Of Lower Size Statistic

	\bar{x}	SS
I can work with other people in the competition environment.	3,45	1,37
My religion has a large effect on the events that I met in life.	3,70	1,23
Scientifically proven knowledge is important.	2,87	1,37
I believe that the participation of woman to the worklife can cause damage.	2,75	1,35
Trying to figure out the cause of the behavior of people around me.	3,30	1,41
Being hardworking and useful person is important for me.	2,60	1,33
I believe the divinity of the army and military service.	3,07	1,23
I can be happy with the person that who is suitable for my culture	3,17	1,44
As a conscious voter, Im fulfilling my duty.	3,15	1,26

As shown in Table 5, the participants who made the sample, Scale of Social Values In Turkish Folklore expressions are distributed at the level of "I can work in the competition environment with others" expression = 3.45 mean and SS = 1.37 standard deviation. "Religious beliefs have great influence on events that I encounter in life." The expression is distributed at the level of indecision with a mean of 3.70 and a standard deviation of SS = 1.23. It is distributed at the level of "I do not care about scientifically proven knowledge" with a mean of 2.87 and SS = 1.37 standard deviations. "I believe that the participation of women in the working life is harmful to the family structure" is distributed at the level of "I do not agree" with a mean of 2.75 and SS = 1.35 standard deviation. With a mean of 3.30 and a mean deviation of 1.41 from the mean of "I try to understand the causes of the behavior of people in the environment." It is distributed at the level of "I am hardworking, it is important for me to be a good worker" with a mean of 2.60 and a standard deviation of SS = 1.33. "I believe in the sanctity of the army and its military service." The expression is distributed at the level of unsteadiness with an average of 3.07 and a standard deviation of SS = 1.23. "I believe that my culture can be happy with a matching partner." The expression is distributed at the level of unstable with an average of 3.17 and a standard deviation of 1.44. "Satisfying citizenship as a conscious voter" is distributed at the level of indecision with an average of 3.15 and a standard deviation of 1.26.

Table 6. *Scale of Social Values In Turkish Folklore Identification Of Lower Size Statistic*

	\bar{x}	SS
Secularism means the protection of freedom of religion and conscience.	2,17	1,16
I will act on my duty and responsibilities in the work I do.	2,12	1,03
Your worship has helped people to develop tolerant behavior..	2,18	1,23
I live in a system of thought that never compromises national values.	2,56	1,36
I try to stay away from the people who do not give me a trust.	3,57	1,20
I believe that social assistance will be effective in solving the problems of society.	3,35	1,26
I want to question the things that known by everyone else.	3,24	1,10
I believe that there is a creator, who created us.	2,93	1,22
I will pay attention to the consequences of behaving for others	3,19	1,34
I believe that information and ideas that can not be proved are not reliable.	3,33	1,32
I search for the different way for the work that I want to do.	3,44	1,23
I think I can keep a long relationship with my partner when I build a family..	3,73	1,33

As shown in Table 5, the participants who made the sample, " Scale of Social Values In Turkish Folklore expresses "secularism means the protection of freedom of religion and conscience", with a mean of 2,17 and a standard deviation of SS = 1,16. I do not agree with the statement "I will act on my duty and responsibilities in the work I do" = 2.12 average and SS = 1.03 standard deviation. I believe that "Your worship has helped people to develop tolerant behavior." The expression is disaggregated by a mean of 2,18 and a standard deviation of SS = 1,23. "I live in a system of thinking that never compromises national values." = 2.56 average and SS = 1.36 standard deviation. "I try to stay away from building relationships with people who do not trust me" is distributed at the level of unstable with mean = 3.57 mean and SS = 1.20 standard deviation. "We believe that social assistance will be effective in solving the problems of the society." The expression is distributed at the level of unstable with an average of 3.35 and a standard deviation of SS = 1.26. It is distributed at the level of "unsteadiness" with a mean of 3.24 mean and SS = 1.10 standard deviation. It is distributed at the level of "I do not believe that we are a creator who creates us" with a mean of 2.93 and SS = 1.22 standard deviations. "I will pay attention to the consequences of behaving as I do for others" is distributed at the level of "I do not agree" with a mean of 3.19 and SS = 1.34 standard deviation. It is distributed at the level of "unstable" with a mean of 3,33 mean and SS = 1,32 standard deviation, "I believe that unsubstantiated knowledge and beliefs are not reliable." It is distributed at the level of "unstable" with a mean of 3,44 mean and SS = 1,23 standard deviations. "I think I can keep a long relationship with my partner when I build a family." The expression is distributed at the level of unstable with an average of 3.73 and a standard deviation of 1.33.

3. Variation Analysis

Table 7. Analysis Of The Differences By Gender

	<i>Gender</i>	<i>N</i>	\bar{X}	<i>SS</i>	<i>t</i>	<i>p</i>
Learning demand	Female	39	2,85	0,68	-0,137	0,891
	Male	61	2,87	0,71		
Two	Female	39	3,22	0,71	-0,573	0,568
	Male	61	3,30	0,77		
Three	Female	39	3,13	0,96	0,134	0,893
	Male	61	3,11	0,96		
Four	Female	39	2,97	0,88	-0,152	0,880
	Male	61	2,99	0,84		

Table 7, Turkish folk Science Social Values in terms of the gender level Scale child dimensions is not observed significant difference between average ($p = 0.891$, $p = 0.568$, $p = 0.893$, $p = 0.880 > 0.05$). In other words; According to Social Values Of Turkish Folklore, gender level showed similar distribution, that is, the lower the scale dimension of learning. They're the equivalent of social value for average level.

Table 8. Analysis Of The Differences By Age

	<i>Age</i>	<i>N</i>	\bar{X}	<i>SS</i>	<i>F</i>	<i>p</i>
Eagerness to learn	Age 20-30	20	2,85	0,60	0,636	0,531
	Age 30-40	44	2,79	0,78		
	Age 40-50	36	2,97	0,63		
	Total	100	2,87	0,70		
two	Age 20-30	20	3,23	0,80	0,546	0,581
	Age 30-40	44	3,20	0,81		
	Age 40-50	36	3,37	0,63		
	Total	100	3,27	0,74		
three	Age 20-30	20	2,97	0,99	3,195	0,045
	Age 30-40	44	2,93	0,97		
	Age 40-50	36	3,43	0,85		
	Total	100	3,12	0,95		
four	Age 20-30	20	2,96	0,87	1,544	0,219
	Age 30-40	44	2,84	0,89		
	Age 40-50	36	3,17	0,78		
	Total	100	2,98	0,85		

When Table 8 were examined, the age variable in terms of the scale of Social Values In Turkish people are learning the child size request and social value is not significant differences observed between average ($p = 0.531$, $p = 0.581$ and $p = 0.219 > 0.05$). In other words; age according to the Social Values Scale of Turkish Folklore in the level of similar distribution of lower dimension, so learning request and the average age of social value for level is equivalent to according to the level. According to the age levels it is found that there is a statistically significant difference in the social value subscale ($p = 0.045 < 0.05$). This difference was found to be due to the average of adult social values from 30-40 years and 40-50 years, while the average age of participants in the 40-50 age range was significantly higher than those in the age of 20-30 .

CONCLUSION

This research was modeled according to the descriptive scanning model. Data were gathered without any change in the characteristics of the participants of the research and the opinions of the subjects were tried to be taken about the present situation. It is a research approach that aims to describe the way of description as it is, or as it exists, as it exists. It is attempted to describe the event that is the subject of the investigation as if it is within its own conditions. The effort to change and influence the event is not shown. The important thing is to observe what you want to know and define it. In this context, the research model is based on a descriptive screening model because of the need to determine Social Values in Turkish Folklore. 100 subjects were included in the study, 39% of whom were female, 61% were male, 20% were 20-30 years, 44% were 30-40 years old and 36% were 40-50 years old.

According to the age levels ,it is found that there is a statistically significant difference in the social value subscale ($p = 0.045 < 0,05$). While the average age of participants in the 40-50 age range was significantly higher than those in the age of 20-30 range, this difference was found the average of adult social values from 30-40 years and 40-50 years.

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APPENDIX-1

Scale of Social Values In Turkish Folklore

The purpose of this study is to develop The Scale of Social Values In Turkish Folklore. The interview form consists of 40 open questions. We ask your for most sincerely and friendly answer .

Uz. Nuran SOYTEKİN

Uz. Azmiye YINAL

Prf. Dr. Habib DERZİNEVESİ

School Image Based on Its Value Messages

Eva POLIAKOVÁ

*Faculty of Education
Comenius University in Bratislava
Slovakia
poliakova@fedu.uniba.sk*

Anežka HAMRANOVÁ

*Faculty of Education
Comenius University in Bratislava
Slovakia
hamranova@fedu.uniba.sk*

Blandína ŠRAMOVÁ

*Faculty of Education
Comenius University in Bratislava
Slovakia
sramovab@fedu.uniba.sk*

ABSTRACT

The study focuses on the school image based on its value messages, as perceived by pupils in former education. The theoretical framework is constructed of elemental value conceptualisation, the explanation of value messages and power of the school. The attention is equally focused on the school image in the context of the education turnover as a reaction to the value crisis and value orientation crisis in young people. This paper introduces a short trip to the typology of school reforms in the Slovak Republic. Moreover, it observes the individual value preference with emphasis on the reflection of moral messages of the school in the attitude of university students. The goal of the present study is to demonstrate how the university students perceive the norms that are presented to them during their studies. We are particularly focused on the norms relating to the partnership and parenthood education, notably if and how these themes are presented to the students by the school. The sample was composed of 38 university students (34 females, 4 males), the future psychology teachers in primary and secondary school. Applied ethical discourse opened the themes that are still regarded as controversial, such as the norms of sexual behaviour, and the risky patterns of behaviour found especially in young women's sexuality. The present study is a part of the project VEGA 1/0623/15 "Value Messages Perceived by Pupils in Formal Education".

Key words: Values, value messages, value framework, value structure, norms, school habituation, school image, value preference in the group of young people

INTRODUCTION

The values and their preference in the present-day young generation are often discussed in various contexts. Researchers look for the causes determining the current state of value preference and value orientation of the young generation. What is clear is the reality that the value structure is always determined by the generation, by the current culture, but also by the political and ideological state of the society, which makes the value structure multifactoral. That is why the values, value orientation, and value messages can be found in the theoretical and methodological portfolios of many scientific fields, especially psychology, pedagogy, social sciences, sociology, and recently neurology and social medicine (e.g., finding the value of health or behavioural aspects of health).

Our professional interest is focused on the research of the values in psychological context, where the values are regarded as the attributes of the human existence, personality, society, family, and school.

Main foundations to understanding the values, value orientation, and value messages

We live in a very complex social environment. Our decision-making, values, and norms are significantly influenced by the media, the society, and the political, artistic, and scientific (who have probably the least influence) figures. Social norms are the measures of human behaviour – our own and of other people (Zahn et al., 2008 in Koukolík, 2016). Bilsky and Schwartz (1987 in Koukolík, 2016) add that the social norms are composed of abstract concepts tied to emotional state and social action.

Value messages of schools

The formative influence of school shows that the value messages communicate the values and the value dimensions of the learning process. They have an impact on the forming of the pupil's value structure of the personality, on the group, and on the society. The longer and more intense the influence, the more effective it is in affecting the scale of values. However, the value preferences in the scale of values can sometimes be just verbally proclaimed, rather than

experienced (e.g., *the value of health is usually proclaimed as the most important value, but the individual does little to nothing to support their health*). It can also be illustrated by the high preference of the family value in the scale of values, but in the real life, this value decreases, and the sociologists have rung the alarm bell for some time now to point out that we witness the so called family crisis. The question is, however, which factors influence these discrepancies between the proclaimed value and the real-life experienced value. In this context, it is important to look closer on the scale of values and its limits, boundaries, and delimitation of the accepted values. In the pedagogy and psychology literature, the answers to the importance of the limits in the educational process have been intensively searched for in the past few years. The value framework represents a space, a demarcation of accepted, respected, and presented values of each individual. It is, therefore, an important dimension of values forming the individual (Prudký, 2009). The value framework is sometimes mistaken for the structure of values. The structure of values comprises of an organised inner system of values of each individual and is manifested in the life values preferences, value orientation, and value framework. It is considered to be a significant phenomenon creating the patterns of behaviour. The structure of values is present in the values, i.e. the norms of behaviour.

In each historical period, the society created a set of norms, the moral codex, which was universally valid and comprised of the rules, norms, values, and social behaviour (Fukuyama, 2005). This codex was controlled and sanctioned if needed. The same goes for the present day. We witness the value preferences in the time where the philosophy of “no limits” dominates.

School image

The image of the school represents its main contours enrooted in the school’s ability to pass on the ideas about the world, reality, science, and its role in the life of the members of the society. Therefore, it presents the different understandings of the world and of the human in a broad diversification. The school image is influenced by the different understandings of the values. The goal of the school in this context is to teach the pupils to understand and to use the human values, norms, and virtues. To put it differently, it aims to cultivate a moral intuition in the pupils (Koukolík, 2010). Thus, the school should inevitably secure the transfer of the sociocultural regulations in the course of the entire educational process, from the preschool age until when the student is ready for work.

The school habituation is a daily, regular socialization transfer, where the impact of the values and norms of the behaviour has its place. During the socialization process, an individual learns the basic norms and values that are presented to them by the culture and the environment where they grow up. These norms and values are either interiorized, rejected, or treated indifferently. It is important to remember that in the school area, the applied forms of repetitive synchronization and coordination of the behaviour constitute a specific school dispositions. These later, in the form of a “child habituation”, function as the “generative schemes” for the subsequent social action and behaviour with a respect for the mediated values and norms (Kaščák, 2006, p. 97).

In the present study, we asked a question identical to that of K.P.Liessmann (2015): “WHAT DOES THE SCHOOL HAVE, WHAT CAN IT DO?” Liessmann quotes P. Bieri (in Liessmann, 2015, p.96) who, apart from other things, defined the important dimensions of the education: “one’s own orientation, understanding, knowledge of history, communication skills, self-determination, moral sensibility, and poetic experience.” According to Bieri, education cannot be called *education* if it does not contain self-appreciation, self-reflexion, values, and evaluation. The author stresses that the school cannot be focused solely on the training of the operational competences, thus bringing up only the homo-jobs. Similarly, Liessmann (2015, p. 97, 113) reminds that “where the education is understood only as a training, the practice of the lack of education emerges in its limited and limiting nature.” The omnipresent practice of the lack of education demonstrates that we have become cowardly, petty, propelled, limiting, and inhuman. It is Liessmann (2012) who came up with the strongest criticism of the current European education in his sociological essay “The theory of lack of education”. He pointed out the still inspiring studies of Wilhelm von Humboldt who developed an idea that, based on philosophy, three stages of schooling could exist: 1/ elementary, 2/ scholastic, 3/ university. Humboldt’s concept describes the central tasks of school: a/ which cultural techniques each person should master in order to maintain a chance of acquiring further knowledge, b/ what kind of knowledge secondary schools should offer, so that the understanding of our world and a desire to learn more are ensured, c/ how the institution with a central role in the clarification of the learning and of the scientific instruction should be designed.

Attempts to change the “school spirit” are visible from 1990 in Slovakia, as well. This year can be characterised as a groundbreaking point in the terms of our whole society. It was preceded by November 1989 (Velvet Revolution) which brought considerable political and social changes that had their impact on the perception of the social image of schools, education, and life perspectives. These changes logically led to a new philosophy of education and upbringing in our country. In 1990, a new school project called “*The Spirit of School*” was introduced. The ambition of this project was, amongst other things, to “*create the highest human values*” in the educational system. In 1994, another education system-change project was presented, named “*Constantine*”. Here, socialization of the children and the youth, creative and humanistic education, and understanding of the humans and their place in the world were emphasized. Introduced in 2014, a project “*Millenium*” was more focused on the curriculum changes rather than the changes in values. To shortly evaluate the impact and results of these projects, we must note that apart from the daring plans, resolutions, and

suggestions, nothing big has changed in the Slovak schools. All of the projects brought solely curricular changes and additions, but not changes in character-forming values. In all cases, it was rather a reform of the previously reformed. The formative power of schools is still discussed, but the discussions stay only on the level of images and expectations.

Therefore, we ask: *What power does the school have nowadays?* Does it have the ability to form, influence, and change the behaviour and actions of the pupils and the students visiting it? O. Kaščák (2006) defines the school as a formal, state-controlled institution that “*universally influences the behaviour*”, an institution where “the school becomes an element of the global social influence, it becomes a component of the social power”. There is no doubt that the school is one of the main socialization institutions, meaning that it fulfils the social functions, too. It is an environment where the entire generations are being social and educated. This is where the *power of the school* lies. However, it is a power restricted by the social changes, by the political power, and also by the big disintegration of the basic moral norms and values.

Many prominent scientists talk about the human crisis – the crisis of the ways of life, and most importantly of the understanding of the values. According to Z. Helus (2011), it is a sign of the failure of the person who “by his own produces the disturbed conditions of life.” Helus also reminds the notes of Anthony Giddens (2000, in Helus, 2011) about the weakening of the generally limiting moral ties and virtues. Fromm (2009, in Helus, 2011) named it an “*anthropological grounding of the crisis*.” Viktor Frankl (1997, in Helus, 2011) talks about an existential or noogenic neurosis which can be also manifested as an effort for natural human dignity. The anomaly, which instils an idea that everything is permitted in the present-day era, tolerates immoral behaviour and deception. It all starts with cheating and lying in school where *performance* is more important than *morality*. It was only the end of the 19th century and the classic of modern sociology Durkheim (in Fukuyama, 2005) already warned about the risk of the expansion of the anomaly that would weaken the broad acceptance and clear respect for the norms constituting the main pillars of the society. He also stressed that something that was later called a *great disintegration* by Francis Fukuyama (2005) would come. It can also be called a general disintegration of the main moral norms and values (Fukuyama, 2005). Z. Helus (2016) proposed the *Education Turnover* by developing an original idea of R. Palouš and Z. Svobodová (2011). Helus emphasizes that a teacher or other educator should not only play a role of a supervisor, controller, or of someone just giving orders, but also develop the potential of an individual. The education as understood by the author is “a complete view of the world and the place or the purpose of the person in it” (Helus, 2016, p.10). According to R. Palouš, “education turnover is an effort to liberate the human from sinking into obtaining the technoscientific operations. The education should be a challenge so that the human places the highest demands of his profession on himself.” (Palouš, Svobodová, 2011). Education turnover is a philosophy focused on the personal qualities, and the individual development respecting the anthropological constants. The authors of this trend place emphasis on the following aspects: 1/ Anthropological – focusing attention on the human, 2/ Ethical – deepening and teaching of the moral attitudes, 3/ Context – teaching the human to be responsible to himself, to nature, and to the world and 4/ Transcendental – orientation of the life from purposefulness to responsibility (Palouš, R., Svobodová, Z. 2011).

The question that arises is what is important in school in terms of the formation of the moral consciousness and the value orientation. It appears that it is mainly: a/ to be open to the values, b/ to be able to create one’s own hierarchy of values, c/ to know the value traditions of one’s own country and family, d/ to be able to respect and keep said values in one’s own life.

Therefore, we were interested in the norms presented by the school as perceived by the present-day university students in the area of the education towards the partnership and the parenthood. We also looked at the preference of the personal values with emphasis on the reflection of the moral messages of the school in the attitude of the university students. The aim of the study was to find out how the university students perceive the norms presented to them during their studies. We were notably focused on the norms concerning the education towards the partnership and the parenthood, and whether and how they are communicated to the students by the school.

METHODS

Participants

The sample was composed of the future teachers of psychology - the first-year students of the Faculty of Pedagogy at the Comenius University, Bratislava. The number of participants was 38 (34 females, 4 males).

Measures

We created our own concept of the research of values. A qualitative design was chosen as the main methodological approach, using two methods. In the beginning of the *discourse*, we applied the concept maps. The students received a blank map on the A4 paper, where they were to write values and norms for the behaviour that came to them within 10 minutes. The resulting values can be found in Fig.1.

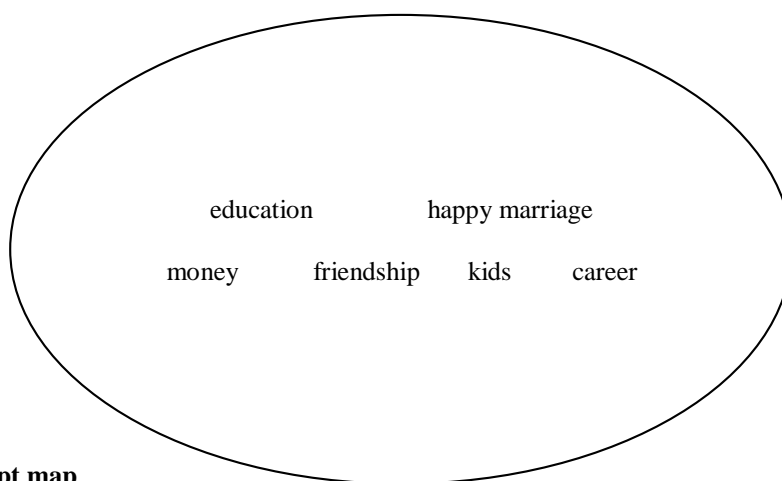


Fig.1 Concept map

Subsequently, the *method of ethical discourse* was used because we find it to be the most suitable procedure, especially in the questions with an arising dilemma. Ethical discourse is characterized by an open communication among the group of participants, it is a form of exchanging and finding arguments and coming to a potential consensus. We abided by the five main rules of ethical discourse (Flyvbjerg, 1999): 1/ no party can be excluded from the discourse; 2/ all of the participants have an equal opportunity to present their suggestions and criticize the question of validity presented by others during the discourse; 3/ participants must want to and be able to empathize with all the demands arising during the discourse; 4/ potential power differences between the participants must be neutralized; 5/ transparency.

RESULTS

The discourse lasted for 90 minutes. All of the participants (34 female, 4 male) agreed to the application of the proposed method with the conditions.

The leader of the discourse (Questioner, Q) firstly explained the reasons behind the discourse and its problematic parts.

Q: *"What I will be interested in are your opinions on the importance of the values in a human life, as well as the importance of the moral norms. You wrote your values into the concept map, and you expressed your opinions and questions about the connections between the values and the moral norms. We said that the moral norms are social regulators of the human behaviour. Could you tell me, what is the oldest regulator of the human behaviour, a universal moral code that is known to us?"*

A general silence ensued, awkward smiles on the faces and soft conversations.

Q: *"Could you tell me, what is that universal moral code?"*

[P2, F]: *"I don't know."*

Q: *"And you?"*

[P1, F]: *"I don't remember."*

[P6, F]: *"I don't know, I've never heard of it."*

None of the students remembered.

Q: *"How many of you attended religious education during primary school?"*

[P10, M]: *"I did."*

[P15, F]: *"Me, too."*

[P5, F]: *"Me, too."*

It turned up that out of 38 students, 7 attended religious education, and the rest attended ethics during secondary school.

Q: *"So, remember what was one of the first information about some rules on how should people behave to each other?"*

Again, quiet consultations and hesitation appeared.

Q: *"Does 'Ten Commandments' say anything to you?"*

The auditorium suddenly became more alive.

[P22, M]: *"Of course, my God, I haven't thought of that."*

[P2, F]: *"Of course I know it, it just didn't occur to me."*

[P27, F]: *"I know something about it, from my childhood."*

Q: *"And could you tell me, what are the norms in Ten Commandments?"*

[P16, F]: *"'You shall not steal', I guess."*

[P22, M]: “‘You shall not commit adultery’ is there, too.”

[P1, F]: “I remember now – ‘you shall not covet’, ‘you shall not commit adultery’, and I think ‘you shall not murder’ is there too, but I’m not sure.”

Q: “I am surprised that you have such problems with one universal regulator of behaviour. So what is your norm, a model for behaviour in the area of morality and everyday life?”

[P32, F]: “Something that our parents told us.”

[P28, F]: “Definitely the parents for the most part.”

[P2, F]: “For me, it was my grandparents, my parents didn’t have time for that.”

[P18, F]: “For me, it was mainly my grandma.”

[P30, F]: “My grandma, as well, today still.”

Q: “Can you remember other Commandments?”

[P16, F]: “I think there was also ‘you shall have no other gods before Me’, but I can’t remember the rest.”

Q: “Alright, I will remind you all of the Commandments, and you think about whether they still have a meaning and a power to form moral conscience of people even nowadays.”

All Ten Commandments were named.

[P2, F]: “Nothing has changed in their validity.”

[P23, F]: “It has, though. The moral rule – ‘you shall not covet’ – is no longer valid.”

[P2, F]: “But you cannot claim that, there is still a lot of couples who keep that rule.”

[P23, F]: “Is that so? Where are they, then? I haven’t met people like that.”

[P2, F]: “That’s because you seek out only those who keep nothing sacred.”

[P23, F]: “Excuse me, you don’t even know me.”

Q: “This is not a conversation about the problem. In our conversation, we do not aim to create moral norms, or to argue whether some patterns of behaviour are bad, because each and every one of you has a right to have his or her own opinion and truth, regardless of what the truth might be. We will move on.”

Q: “What about ethics classes, which is where you were supposed to talk about norms and values and behaviour? What do you remember from that?”

Spontaneous reaction of the majority: “We did nothing at ethics. The teacher said: ‘There you have computers, do whatever you like.’ And that is how all of the classes went.”

[P22, M]: “That’s why I switched to religious education.”

[P13, M]: “Me, too, at least we were doing something.”

Q: “What about the rest of you? You are such a quiet majority. Talk, talk, ask questions, comment. If you do not have any notes and comments on this topic, I do have one more issue. Most of you mentioned in the past that girls do not have moral restraints in sexual behaviour. Why this evaluation? Where do you see the problem that such patterns of sexual behaviour that you marked as inappropriate and immoral are dominating, and why in girls especially?”

[P13, M]: “The girls behave like they have been torn loose.”

[P38, M]: “They go down with anyone, they have no boundaries.”

[P13, M]: “That’s true, they have no morals.”

Q: “Girls, do you agree with that assessment?”

[P2, F]: “The boys are basically right, but they are not different.”

The majority nodded in agreement.

Q: “But where do you see the cause of such behaviour? Is it a problem in the family, is it in insufficient sexual education, where is the problem?”

[P28, F]: “I think we need to focus on the media. What is shown on screen, what sort of behaviour is encouraged.”

[P34, F]: “Definitely the media.”

[P2, F]: “School is not innocent either, we didn’t learn anything there, after all. Is someone here who had a different experience?”

Others laughed and nodded in agreement.

[P32, F]: “In our school, we had one single class in the 7th grade. They screened the anatomy of sexual organs to us and then showed us the examples of sanitary pads.”

[P11, F]: “I guess it was the program ‘When I’m maturing’, or a different one?”

[P32, F]: “I don’t know, I can’t remember.”

[P27, F]: “We learn about sex from the internet and our friends.”

Q: “Are you telling me that you do not talk to your parents about these issues?”

[P26, F]: “We do, but only about the protection against the sexually transmitted diseases.”

[P22, M]: “Can I say something? We talked about sexuality during religious education. That the first sexual intercourse can be only after the wedding and that we ought to be faithful to our partner for the rest of our lives.”

The auditorium became more alive and people were shouting over each other: “Oh, right, I can see that.”, “Those are such foolish ideas.”, “They surely didn’t mean that.”

Q: “But those are moral norms that clearly delineate the behaviour. For religious people, it is a clear and understandable norm about how to behave in an area so sensitive like sexuality. Why do you see the problem in keeping it?”

[P2, F]: “You don’t want to tell us that having only one sexual partner for the entire life can be attainable. I have female friends who have 3-4 sexual partners a year, and I don’t find them amoral.”

[P11, F]: “I also think that today this norm is unacceptable, it is nonsense.”

[P1, F]: “It is not so big of a nonsense, really. Do you know how many less AIDS patients and those with other diseases would be there, not even mentioning how many less unhappy young people?”

[P11, F]: “Please, don’t say things like that, even AIDS can be treated these days.”

[P1, F]: “But you wouldn’t like to catch that, would you?”

[P11, F]: “I don’t sleep with gays.”

[P1, F]: “But are you sure that your partner doesn’t sleep with some gay?”

Q: “As I am listening to you, I gather you perceive this problem as a problem of health, so we talk about the health norm. It, however, says that the norm is only one sexual partner.”

[P2, F]: “But when I have a partner and I sleep with him, I’m faithful to him. And I keep this with every partner.”

Q: “This is called a serial monogamy, but it is also a risk for health and morals. Sure, a requirement to have only one sexual partner in a lifetime is unreal and we would find enough arguments to support this conclusion. We ended up in a moral dilemma and we should resolve it.”

[P27, F]: “Maybe we should talk about bigger responsibility in this area, of girls and boys equally.”

[P3, F]: “How to harmonize moral aspects and health norm with the current lifestyle?”

[P7, F]: “Do you think that present-day teenagers will think about sex in this way, though?”

Q: “That will be your responsibility one day, to prepare the children, the young people, for a high-quality, active, and creative life, including the acceptance of moral norms and values. We opened these issues step-by-step, only naming them and finding the causes of risky behaviours in youth, but the essence has to be in finding the paths leading to the correction of the “public matters”. It is therefore important that the school is the bearer of such correction and change.”

[P8, F]: “More education than knowledge, although I don’t want to trivialize the later.”

[P32, F]: “That is a problem because the world trend is like we described it in our country. Do you think that the school has the power to change anything?”

[P2, F]: “So we change the school.”

The students clearly declared that they care about transparency, especially about passing the right, true, clear, and relevant information about topics that are crucial in their lives.

CONCLUSION

Our concept of research of the power or the “lack of power” of school expected the gain of relevant research data about the transfer of values and moral norms into the life of pupils and students. The question was how they behave in real life in the context of these norms and values, how they evaluate the influence of school on their scale of values, on the value framework, or on the moral norms that were accepted as regulators of their behaviour. The study brings knowledge about the value orientation and the acceptance of the moral norms in university students, in the context of selected theoretical conceptions. It looks for the intersection between the real-life reality and the expected patterns of behaviour within the moral norms. The answers of the university students carry an insight to an evaluation of the power of the school. The applied ethical discourse opened topics that are still regarded as controversial, such as the norms of sexual behaviour, and the risky behaviour of young women in the area of sexuality. The acquired research data brought new knowledge about the power and the losses of school influencing moral attitude, value frameworks, and value orientation of young people.

We see the concretization of the education turnover especially in the developing personality of the individual. We put emphasis on the development of moral conscience, together with the development of moral action in accordance with the ethical norms. If we know our value profile, we can defend our social rank and our ideals that give meaning to the human existence. According to Vernarcová and Ternényová (2016) teachers can make a world of difference for all students and can help them to succeed by implementing certain adaptations or interventions. Knowing the values of their students can lead to maximizing of learning process.

Many authors point out the danger of dehumanization of society, which is of course linked to the value orientation, moral norms, and their acceptance. Therefore, we regard the subject of our research and the results as an important contribution to the change of the spirit of our school. Future teachers regard the norms previously presented to them by the school as insufficient, especially in the area of development, care, and humanization of the pupil. This is the path that the current pedagogy should take, and by doing that, to “face the weakening of the humanizing ethos” (Helus, 2016; Palouš, Svobodová, 2011), to which we are (thanks to the ongoing school reforms, for instance) witnesses.

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Schools as Institutes of Acculturation: A Question of Belonging

Maura SELLARS

School of Education

University of Newcastle

Australia

Maura.Sellars@newcastle.edu.au

ABSTRACT

This paper considers the position of students with refugee experiences in Neo Liberal classrooms. It explicitly raises questions about the notion of belonging, school culture and invariable tensions these constructs create in the context of age - related standardized testing, the epistemological foundations of the curriculum and the inevitable context of competition that is characteristic of economy based schooling. It questions the capacities of Neo Liberal educational systems to educate these students in ways which acknowledge their relative strengths, their cultural richness and their need for holistic, supportive teaching and learning interactions. It also examines the cultural tensions that are created by educational spaces which exclusively privilege the majority culture, as is currently the case in many of the 'host' countries in which these students find themselves. The widespread focus on individualism at the expense of community and on personal achievement and gain as a replacement for collaborative, joint effort may be tolerated as a necessary evil in many western cultures, but may prove to be the ultimate devastating challenge to students with refugee experiences as their communities struggle to come to terms with the horrors of displacement and the subsequent battle to retain their sense of identity.

INTRODUCTION

The world is currently experiencing the most widespread displacement of people that has ever been known. Over sixty five million men, women and children have been forced to flee their homelands in an effort to escape, war, violence, religious and civil conflicts and widespread destruction of the lives they had previously known in their countries of origin (United Nations Refugee Agency, 2017). Over half of this number are young people and children under eighteen years of age. Those who survive face great difficulty and hardship in their quests for new homelands and many spend months and years in camps and temporary accommodations under conditions which cause further stress and trauma. Amongst those who make up this global diaspora are millions of school aged children and young people. They, together with their existing families and communities, exist in hope of finding a new homeland on which to settle, to be accepted and to belong. Currently, however, many of the countries who have agreed to accept these newcomers as citizens have political and educational agenda and policies which marginalize the disadvantaged in their own communities and which do not have the structures and services to productively accommodate the degree of religious, cultural, and social diversity that is characteristic of the displaced communities. Consequently, many individuals with refugee experiences find themselves in new homeland societies which are very different from those they were forced to flee, and into which they are expected to be acculturated and assimilated.

ACCULTURATION

There are two distinct approaches to understanding the what occurs as the result of the coming together of two dissimilar cultures. One approach is the psychological approach which seeks to understand the changes and processes of that individual experience as the result of these interactions (J. Berry, Phinney, Sam, & Vedder, 2006; John W. Berry, 2009; J.W. Berry, Horenczyk, & Kwak, 2006). In this model, acculturation is generally understood to be the 'general process and outcomes (both cultural and psychological) of intercultural interaction' (J. Berry, 1997, p 8). The second, original model is primarily an anthropological model which seeks to explain how people as groups begin to live their lives in the context of other, different cultures (Ogbu, 1995a, 1995b). Both of these perspectives are valuable when discussing acculturation in the context of individuals with refugee experiences as these populations usually arrive in a context which is to be their homeland with others who have similar characteristics and backgrounds. In discussions of acculturation generally, there are several factors which impact on the process of acculturation. These are identified as the size of the groups who are undergoing the changes, the reasons for the migration, how long these groups have been in contact with the majority culture to which they are attempting to integrate and the degree of difference between the two cultural groups. One factor which both perspectives of acculturation agree as a critical factor is the in the predictor of acculturation outcomes is the degree to which the cultural interaction is forced or voluntary (J. Berry et al., 2006; John W. Berry, 2009; J. W. Berry et al., 2006; Ogbu, 1995a, 1995b). This is a particularly important aspect to consider in case of students with refugee experiences as the contact is generally involuntary and there are limited prospects of returning to the homes from which they have fled or been forcibly displaced. This lack of choice makes these individuals more vulnerable to developing an 'oppositional cultural frame of reference' (Ogbu, 1995a, 1995b) in which they engage in behaviour in their cultural groups which are not acceptable ways of behaving in the majority culture; or of developing

negative acculturation attitudes towards intercultural contact as a result of negative interactions such as marginalization (J. Berry, 1997; J. W. Berry et al., 2006). This may be a particularly pertinent factor for consideration in educational settings where students with refugee experiences are regarded as ‘deficit’ and are perceived by themselves and others to be at a disadvantage in relation to the other students from the majority culture. Education systems which are developed in the context of the neoliberal economic politics have particular characteristics and processes which serve to privilege specific groups of students and lack the creativity and flexibility to honor diversity and difference REF. It is in these educational contexts that many students with refugee students find themselves placed in their newly settled contexts and in which they may, in many instances be at considerable risk of not developing positive acculturation attitudes and processes unless considerable accommodations are made to ensure their acceptance and inclusion (Atasay, 2015; Vickers & McCarthy, 2010).

SCHOOLS AS SYSTEMIC INSTITUTIONS

Schools are acknowledged to be the major centre of acculturation for young people (Hamilton & Moore, 2004; Stewart, 2011). They are expected to convey the culture, social expectations and behaviors of the societies in which they are placed. They frequently act as the ‘gatekeepers’ to other learning opportunities and prospective occupations by the implementation of the evaluative practices that are deemed appropriate for the societies in which they are placed. They are generally part of a system, the policies, characteristics and policies of which are implemented as mandatory curricula, processes and procedures. In many cases, these requirements are institutionally implemented with little or no provision for diversity or difference. A student’s age, for example, determines the stage of schooling in which they are placed, what they are expected to learn and the ways in which these expectations can be achieved (Hamilton & Moore, 2004). This alone can be a source of disorientation and distress for many students with refugee experiences. Irrespective of variations in the educational backgrounds of these students, a defining characteristic is that, for some, their schooling has been at least interrupted, for others, formal schooling is a new experience as they have had little or no formal education in their previous context REF. The notion that learning is age related may also be challenging for some students and their communities as coming together to learn what needs to be learned, irrespective of age, is a more familiar concept to many students with refugee experiences, especially those from African countries REF. Despite these factors that place the learning needs of the students as a secondary consideration to the administrative practices and procedures of formal education in most countries where schooling is mandatory from a defined age, the school environment and context are recognized as critical to the potential for students with refugee experiences to develop positive attitudes and intercultural interactions towards acculturation (Stewart, 2011). Historically, students with refugee experiences were generally treated like any other students in a well-meaning effort to minimize difference and demonstrate acceptance into the school community and emphasize the need for assimilation into the mainstream culture (J. Berry, 1997). However, a body of evidence provides evidence that contradicts this notion as a successful strategy (Stewart, 2011), with the result that schools have mainly served to marginalize these students with potentially significant consequences for both the communities with refugee experiences and the communities to which they seek to belong.

The consequences of prioritizing institutional procedures and policies and assuming assimilation will take place has particular impact in school systems which are heavily influenced by neoliberal economic principles. Identified by their focus on individual competition, one size fits, all high stakes testing and inflexible curricula, schools in these systems have the capacity to marginalize not only students with refugee experiences, but any students with a background of disadvantage who do not identify with the complex values, beliefs and principles that are inherent in these schools and systems. Students with refugee experiences are particularly disadvantaged. The issues of language and literacy skills are always problematic as are the difficulties that many students with refugee experiences encounter when subsumed in a world of printed material. This reliance on print impacts not only on students with backgrounds of oracy, but also those students whose educational backgrounds were previously limited to the knowledge of specific religious or cultural texts. The additional stress that is created for these students is accelerated by the ways in which assessment procedures are implemented, most especially in situations where national testing regimes are implemented. Not only may the epistemologies of the curricula, and therefore the contents of the tests, be unfamiliar to them and conflict with their own cultural beliefs and ways of knowing, the language proficiencies required to engage productively with these evaluations of learning only serve to further marginalize and disadvantage these already vulnerable groups of learners. A further disadvantage for many students with refugee experiences may be their physical appearance. These may include facial features, skin colour and general physique that sets them apart from the students of the mainstream culture, resulting in cultural interactions that demonstrate attitudes of prejudice and discrimination by those belonging to the mainstream culture. Once again, this can be particularly dominant in schools and systems that are governed by policies and procedures which are exclusive and inflexible, such as those dominated by ‘one size fits all’ pedagogies and curricula, deficit remedial programs which exaggerate perceived shortcomings and lack of linguistic and other social capital (Bourdieu, 1986, 1990) and which limit the choices of acculturation strategies for students with

refugee experiences.

BELONGING AT SCHOOL

There are different types of acculturation and often, the strategies for some types of acculturation are either too challenging or are not possible in the contexts in which some students with refugee students find themselves (Hamilton & Moore, 2004; Stewart, 2011). Assimilation, which is an expectation in many of the countries who regularly permit an annual quota of migrants, including populations with refugee experiences, into their nations, actually means that these people are expected to forfeit their original cultures and to totally embrace the language, customs and values of the countries in which they are resettled. The opposite of this total immersion in the culture of the 'host' country is separation. This is where the individuals wish to retain their culture of origin and avoid contact with those of other cultures. As a result, these individuals do not readily acquire the language, values and customs of the country in which they are resettled and so find it difficult to sustain productive, positive interaction with others who do not belong to their cultural group. Most at risk of separation are females who do not attend school but remain at home with their communities. Integration is likely when these populations are able to retain the aspects of their culture of origin, but also be able to interact in their new cultural contexts by acquiring language, values and ways of doing that are associated with participating positively and productively in their new cultural contexts. Strategies to integrate have been found to be the successful option for those individuals wishing to adapt to life in another cultural context. There is one more option for acculturation which is especially pertinent when considering the expectations of students with refugee experiences in schools in countries with neoliberal politics and economies. This is marginalization. Marginalization is frequently the result of negative interactions with other cultural groups. Individuals reject their culture of origin because of negative perceptions and interactions with the dominant cultural group and, although they may strive towards achieving the language, norms and values of the dominant group, they are unable to do this effectively or efficiently and, consequently, they also develop negative attitudes towards the dominant cultural group. This can be a particularly problematic outcome in schools, especially those where difference and diversity are met with low degrees of tolerance and limited understanding and support systems. In many schooling contexts, students with refugee experiences simply cannot compete academically with their peers in formal school systems which prioritizes high stakes testing and one size fits all pedagogies and so cannot fully access the cultural capital of education which may lead to a gradual process of marginalization.

CONCLUSION

Acculturation is gradual process which develops over time and changes individuals, communities and the 'host' culture as interactions create new norms and perspectives. It is essential for students with refugee experiences to have significant support systems made available to them in a variety of contexts, including school contexts. It is also vital for the development of positive acculturation strategies and attitudes that students with refugee experiences experience interaction with their peers from the dominant culture, not least for the saturation of language experiences that native language speakers can provide for their classmates (Schumann, 1986). Schools have particular responsibilities as the major avenue by which students with refugee experiences can be acculturated to provide environments which are inclusive, tolerant and accepting of difference. School climate has been well established as an important indicator of student belonging and inclusion REF and consider not only the policies and practices of schools but also the ethos and 'hidden curriculum' REF. for students with refugee experiences, school climate becomes paramount to their future success, not only in academic terms but terms of their social and emotional wellbeing. The question, however, that appears not to have been asked, much less answered, by policy makers, school systems and support agencies is simply this 'How can an educational system that prioritizes individual competition and academic success accommodate students with refugee experiences?' If they cannot successfully compete, the only way they can belong in such education systems is to become the failures that are required to validate winners. Society's risk then is that the only type of acculturation that many students with refugee experiences may be able to develop is that which is least beneficial at all three levels of consideration (J. Berry, 1997): the individual, the institutional and the national.

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School-Work Alternating In Italy: A Critical Study

Francesca SARTORI

*Department of Sociology and Social Research
University of Trento, Italy
francesca.sartori@unitn.it*

Carlo BUZZI

*Department of Sociology and Social Research
University of Trento, Italy
carlo.buzzi@unitn.it*

ABSTRACT

This paper analyzes and critically assesses the school-work alternating model as practiced in the high school system of the Autonomous Province of Trento (Italy). Throughout the assessment, the main weaknesses highlighted by graduates were the limited guidance they received from their teachers and the ineffectiveness of the work placement schemes put in place by the schools. The paper therefore raises fundamental questions about this educational model and suggests that improvements should include greater involvement of the students in selecting and shaping their internships and greater assistance to help students choose career paths or further academic directions.

Keywords: Guidance – Internship – School-work alternating - Post-diploma transition - Work placement

1. THE SCOPE OF THE PROBLEM

Many are the causes external and internal to the labor market that have led to the high rate of youth unemployment in Italy and in many European countries, as well as to job instability that extends long after entering the labor market. The gap between school-based learning and working practice is one of the central factors that adversely affects the ability of young Italians to find an occupation that is coherent and congruent with the educational title obtained, relatively quickly after completing their studies. The Italian school system therefore needs to create conditions for greater employability of its graduates, and especially for those who do not move on to university.

A solution may come from offering opportunities that allow high school students to acquire so-called "key skills" that are particularly sought after by companies (communication, teamwork, leadership, autonomy at work and problem solving). Another important factor for a young person seeking employment also consists in becoming acquainted with work culture and business organization.

As a whole, the education system can hardly provide training that meets the needs of flexibility, adaptation and adjustment to new technologies as well as advanced specialization, which would limit the possibility of a widespread and positive encounter between supply and demand.

A significant step in addressing the problem in Italy is Law No. 107 of 13 July 2015 that has attached particular importance to the work experience of young people during their school years, so much so that it has made it compulsory. To implement *work placement schemes* does not imply only organizing *internship* for students but also to take the outlook of changing the position of school in society, so that it no longer stays exclusively locked within its walls as a repository of knowledge, but opens out to local, national and international cultural and productive reality (Schizzerotto, Barone, 2006).

Internship remains a basic tool albeit to be placed within a larger context. First, internship have nothing to do with employment. Students in general are not paid, but are offered educational goals. They cannot be thought of as a means of creating employment, even though the recruitment of a student on placement may be a valid secondary effect, as confirmed by research conducted in other countries (Mihail, 2006; Smith, Wilson, 2004) and in Italy (AlmaDiploma, 2016).

Highlighted instead are the guidance purposes of internship in producing greater awareness when choosing the path of study after the high school diploma or of the employment sector when seeking a future job. This tool can therefore be considered as an integral part of the guidance process that schools have the task of activating during the last three years of secondary school in Italy. It is within this problematic framework that the survey that this paper deals with was carried out. The survey was conducted between 2013 and 2015 by the *Department of Sociology and Social Research of the University of Trento*, on behalf of IPRASE - the Institute for research and educational experimentation of the Autonomous Province of Trento - and focused on the analysis of students' perceptions, attitudes and decision-making styles during the transition phase. Anna Ress worked on the survey together with the authors of this essay.

The survey questions can be grouped into three main categories:

- a) *Guidance applied*: how was guidance towards employment implemented by the schools? What were the levels of participation? What other sources, channels, or experiences were added to it by the students?
- b) *Guidance perceived*: what degree of success did the guidance towards employment implemented by the schools receive in terms of positivity, satisfaction and usefulness of any experience made? What criticisms were made? What shortcomings were observed?
- c) *Guidance results*: what effect did guidance activities practiced by the schools have on the actual integration of secondary school graduates into the labor market? Are there other non-school paths that could significantly influence labor market access?

2. METHODOLOGY

A first collection of data was conducted by means of a questionnaire distributed to 51 high school 5th year classes (equivalent to a total of 835 students who would graduate at the end of the school year). The procedural nature of the phenomenon analyzed required a second investigation, longitudinally, after graduation. In fact, in the following year 479 graduates were surveyed via two parallel interview methods (*web survey* and *Cati*). It was thus possible to compare the data concerning intended choice with the choice actually made at the conclusion of this transition phase.

As for the variables used, the *current condition*, which identifies the post-diploma situation, distinguishes four main categories: *students*, including those studying *workers*, with the exclusion of students but including those also looking for another job; *young people looking for work*, namely those only looking for a job and not engaged in any other activity; and *NEETs*, or those who do not study, do not work nor are looking for a job. In the analyses, several socio-demographic features such as *gender*, *cultural capital* of the family (defined by the highest academic qualification achieved by the parents) and *citizenship* were used as control variables. Independent variables used by the study include the *type of secondary school attended*, which may be either: (i) a '*liceo*' (high school specializing in scientific, classical, linguistic, social and artistic studies) or (ii) an '*istituto tecnico*' (secondary school specializing in technical and trade subjects); the *final score obtained at the school-leaving examination*; the degree of *guidance-related confidence* achieved in the transition, an *additive index* constructed from a set of attitudes that define the degree of awareness about his/her options through which the young person looks at the future. This index was subsequently recoded into three levels (*low*, *medium*, *high*).

3. THE RESULTS

3.1 Guidance applied

A student's participation in guidance activities for employment purposes is related to that student's will to enter the labor market as soon as the school-leaving diploma high school examination is obtained. In fact, nearly one in three young people declares not to have done anything, in the post-diploma transition phase, to expand his/her future professional horizon through guidance activities, thus showing complete lack of interest in the matter. Only a quarter of the interviewees showed a proactive attitude, claiming they had analysed work prospects in detail. Among the others, participation remained at a substantially passive level. If one observes the prevailing attitude in the different profiles of interviewees, there is less interest in the issue about finding a job among those who have continued their studies than among those who are working or looking for a job. Other analyses have shown that graduates from technical institutes, when compared to '*liceo*' students, were more involved in gaining knowledge about the labor market. It is important to note, however, that even among those, more interested in the professional world, i.e. those who have a job or who are looking for one, as well as among the graduates of technical institutes in general; the proportion of those who have sought detailed information never reaches the majority.

The main source of guidance for over two-thirds of interviewees is Internet. Important for about one-third of young people is also reading newspapers, magazines and specialized brochures. Less significant are events such as trade fairs, placement services and traditional media (TV and radio). If one looks at the role played by the school, one sees that only one in five interviewees turns to school guidance to acquire knowledge about the labor market. As students place relatively little faith in employment guidance activities conducted by schools, which anyway seem to be not very effective, let us analyze the reasons why.

The first element that emerges is the interviewees' scarce perception of having experienced guidance activities. This can be attributed, at least in part, to the lack of recognition of the specific purposes of the guidance activities proposed by the schools. By comparing the activities between them, individual *counseling* initiatives are less frequent compared to other routes such as choice support workshops, skill evaluation tests, university open days, group talks with experts. The perception of having participated in guidance activities is higher among high school graduates from technical institutes compared to '*licei*' graduates, and higher among those who are working or looking for work than among current university students.

Focusing on concrete life experiences considered typical of employment-related guidance, the survey has shown good, at times outstanding, distribution of contacts with the world of labor through personal initiative and events

organized by the school or work placements (see Table 1). The experience-based links between school and work, where they exist, are concentrated in the central years of secondary school and especially in the fourth year. When students reach the fifth year and approach the school-leaving exam, they find it is difficult to have profession-oriented experiences because they are not proposed by the schools and because most of the near-graduation students concentrate their efforts on the final exam of the educational cycle and/or on the preparation for university admission tests.

Almost three-quarters of the students claim, however, that they have had work experience not organized by the school. Less common is work experience organized by the school and *internship* in particular. The survey confirms the trend among vocational schools of offering more opportunities for work experience or work placement opportunities compared to '*licei*'. Finally, it is much more likely that workers have already had work experience when attending secondary high school compared to university students.

Table 1 - Participation in guidance activities during school studies, by type of school (percentage)

	Liceo (N = 254)	Istituto Tecnico (N = 225)	Total (N = 479)
Work experience organized by the school	38.5	67.3	52.1
Other work experiences	70.3	78.2	74.0
Training placements at companies or other bodies	36.9	73.0	53.8

3.2 Guidance perceived

According to the data collected, only one third of young people are satisfied with the information on the employment market received from schools. Looking at interviewees from the perspective of the school path they followed, the least satisfied are the '*licei*' graduates (14.9%) compared to the '*istituti tecnici*' graduates (54.9%), while considering the current condition of the interviewees, university students are more critical of the school's labor market information services (25.2%) than workers (54.1%) or job seekers (38.8%).

Table 2 illustrates the perception of the usefulness of work experiences practiced concretely during high school. According to data collected through the questionnaires, it is evident that job opportunities, organized or not by the school, as well as work training have satisfied in terms of adequacy only from one fifth to one third of those who have experienced them.

Table 2 - Perception of usefulness of work experience, if done, related to current condition (percentages)

	Students	Workers	Job seekers / NEETs	Total
<i>They have been very or quite useful:</i>				
Work experience organized by the school	17.5	29.8	24.2	22.2
Other work experience	20.4	39.0	11.1	24.0
Training placements at companies or other bodies	23.5	44.3	34.3	31.7

3.3 Guiding experience and entering the labor market

Beyond perceptions, that are subjective, there remains the need to measure the actual effectiveness of guiding experiences. Which factors actually affect real opportunities in the post-exam high school transition? Are guiding experiences important in terms of objective results? We have tried to answer these questions by analyzing the incidence of guidance practices compared to the chance of finding work or not after high school graduation. For this reason, the following analyses are limited to the sample of young graduates who have chosen to work or to seek employment, thus excluding current students and *NEETs*.

Probability of getting a job is higher for those who have a meaningful work or training experience (not necessarily related to the job in question): for example, for those who have spent a period of study abroad, the chance to work a few months after graduation was equal to 63.8 % Vs. 54.6% for those who did not have such experience; likewise, the work experience organized by the school increases the chances of working from 53.1% to 61.6%.

Even the practice of *work training placement* organized by the school seems to have a positive impact, albeit in a very limited way, on the access to the labor market, seeing that if the probability of working is equal to 56.1% for those who have not practiced work placement that increases to 59.6% for those who have had this opportunity. However, the most important action seems to be the experience of a job found independently from the school. In fact, we find that 69.7% of those who have experienced work activity independently from the school are inserted in the world of labor after a few months of obtaining the high school degree. Only 27.8% of

those who did not have this experience worked at the time of the interview. This phenomenon apparently proves that work found autonomously or anyhow without the intervention of the school is more functional to the purpose of faster employment of secondary school graduates. However, it should be noted that this is a snapshot of the situation of neo-graduates shortly after obtaining their high school diploma and that in most cases the type of work found when exiting the school system on average consists in a low profile job featuring poor temporal stability. The situation may be different after a longer period of time and with reference to less precarious work. Table 3 shows a more detailed analysis, based on three logistic regression models, conducted to verify the actual extent of some of the factors influencing job opportunities of the young neo-graduates interviewed.

Table 3 - Logistic regression models on worker status rather than on looking for work status, N = 135

	Mod.1 Guidance experience	Mod.2 Demographic indicators	Mod.3 Graduate profile
	Coeff. β (standard error)	Coeff. β (standard error)	Coeff. β (standard error)
<i>Work experience organized by the school (Ref. No)</i>			
Yes	0.215 (0499)	0303 (0514)	0613 (0579)
<i>Other work experience during studies (Ref. No)</i>			
Yes	1,760 (0436) ***	1,749 (0441) ***	1,410 (0491) ***
<i>Work placement during school (Ref. No)</i>			
Yes	0088 (0520)	0009 (0539)	-0538 (0622)
<i>Experiences of study or training abroad (Ref. No)</i>			
Yes	0216 (0386)	0,222 (0411)	0408 (0484)
<i>Gender (ref. Females)</i>			
males		0016 (0415)	-0577 (0544)
<i>Citizenship (ref. Foreigners) ^a</i>			
Italian		-0408 (0711)	-0521 (0846)
<i>Family's Cultural Capital (Ref. Low)</i>			
Medium		0271 (0422)	0768 (0498)
High		0303 (0591)	0575 (0721)
<i>Type of school (Ref. Tech. Inst.)</i>			
Liceo			-0759 (0562)
<i>School-leaving exam score (Ref. 60-69)</i>			
70-79			0105 (0513)
80-100			0304 (0657)
m.v.			1,131 (1302)
<i>Determination index (Ref. Low)</i>			
Medium			1,944 (0577) ***
High			2,216 (0584) ***
m.v.			1,567 (1280)
Pseudo R ²	0110	0115	0250

N.B. ***: p <0.01; **: p <0.05; *: p <0.10; ^a Warning, low numerosness

Model 1 is the starting point and confirms that the most meaningful guiding experiences as regards job placement are those conducted in the workplace independently from the educational institution. Training and professional experiences considered alone account for 11% of the variability in the probability of getting a job.

Model 2 includes the socio-demographic control variables such as gender, nationality and the family's cultural capital in order to ascertain how the guiding experiences conducted remain significant under the same conditions of social status. The impact of such experiences remains unchanged even when considering the socio-demographic aspects of the interviewees. These factors add little to the explanation of the different job opportunities among the high school neo-graduates (11.5%).

The third model introduces school career indicators (type of school attended and school-leaving exam score) and attitude (guidance-related determination index): extra-curricular work experience remains the most important indicator even independently from the type of school education and the degree of motivation shown. This last aspect seems to be very important in finding a job, namely the level of guidance-related determination achieved seems to have a very strong impact on accessing the labor market. Considering these elements too, it explains up to 25% of the diversity in the probability of finding employment. Although these results offer several interesting indications, it is evident that there is undoubtedly a large degree of variability in the job opportunities of young graduates that cannot be explained with these factors.

SUGGESTIONS FOR ENHANCING THE SCHOOL-WORK ALTERNATING MODEL

With this essay, our intention was to explore how and to what extent *school-work alternating* model has been acknowledged by the school system of the Autonomous Province of Trento as a whole. This means not just how it has developed in the "*istituti tecnici*" that for a long time have been offering projects aimed at providing practical skills to future workers, but also how '*licei*' are reorganising in order to comply with national legislation that envisages work experience in collaboration with the world of labor. These are our conclusions:

- The initiatives carried out by schools to guide students in their post-diploma high school choices were many, but a significant part of the students did not see the role played by the educational institution as being particularly active, especially where employment is concerned.
- Predictably, the focus of students on employment opportunities following the diploma depends on their school path: it is greater for students from '*istituti tecnici*' and less intense for those from '*licei*' who, in a greater number, envisage the continuation of their studies.
- Overall, however, the data show that the information on future opportunities is pursued autonomously by the students (via Internet), individualized counseling activities appear to be quantitatively limited, not always evaluated positively and placed on a lower level of importance compared to other activities such as choice supporting workshops, skill evaluation tests, "university open days" and group talks with experts. The appreciation for all of these actions in any case never reaches high levels.
- Lights and shadows also characterize the internship activated in companies, to a variable extent according to the type and quality of individual experience acquired and to the climate found in the labor context. A partly unexpected result entails the need to reflect and rethink how the student address the internship, how he/she is prepared by the school and how the company approaches him/her. It appears, in fact, that institutional education produces rather limited practical effects on the opportunity to find work after secondary school graduation.
- Extra-curricular work experiences are rather more significant in terms of post- high school graduation employability. Those who have acted autonomously in the search for some contact with the world of labor, therefore, seem to have more probability of finding a job quickly after graduation, as seen in the interviewees who were already working five months after graduation. This result is in contrast with the aims of the school's work placement schemes and it sheds doubt on their guiding and educational role, at least as regards their more common applications.
- To improve organizational work placement proposals, it may be useful, instead, to consider the proactive attitudes of young people who have identified, and perhaps even chosen independently, the company where they wish to engage in work experience. Initiative, commitment and motivation in acquiring the necessary skills for a future career already during their studies are useful qualities on the road to success in finding employment. These factors are included in the "guidance-related determination" index that, as we have seen, appears to be closely correlated with the access of the neo-graduated to the world of employment.
- Therefore, rethinking school-work alternating means to conceive internship - which are its constituent instrument – by paying attention to aspects such as student motivation, his/her active involvement in the project, coherence with the student's secondary school subjects, innovative teaching of the skills that accompanies, progress monitoring (done by a school tutor and a company tutor) and, finally, evaluation of the achievement or not of expected results and the student's reflection on or processing of the experience undergone.

- The foregoing phases represent an ideal model of *school-work alternating* that requires, however, flexible interpretation for its implementation in different work contexts and according to the different types of schools. More complexity is highlighted especially for ‘licei’ than for “*istituti tecnici*”, due to their different characteristics and hence the different perspectives of post-secondary school choice.

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Self-Correcting Mechanism in Education: A Mechanism to Improve Reading a Language Taken Online

Nabil Al-AWAWDEH

University of Missouri- Columbia- USA

ngapp5@mail.missouri.edu

ABSTRACT

This paper is showing how, as teachers and online classes monitors, we developed a mechanism to help student to read and comprehend a text at or above grade level. We wanted our students to take ownership of their reading, monitoring themselves while they are reading and self-correcting.

Goal

Self-correction mechanism may seem less important as a diagnostic tool than errors, but it demonstrated for us the way in which a reader is working to make sense of a text he is reading. The students are establishing a self-correcting mechanism to help them to improve reading a language taken online because the results of our students in reading skill show weakness, see the following chart.

	semester 1	semester 2
Reading	65-72%	62-71%
Speaking	85-87%	85-86%
Writing	79-86%	77-83%
Listening	80-83 %	76-83%

As we can see from the results, the reading skill is below average, so we tried to help students to improve it. As teachers, we wanted our students to read at or above level and to take ownership and monitoring themselves while they are reading and then self-correcting when they need to.

Definition: Self-correcting mechanism is a guided mechanism that aims to help student to correct themselves through building reading strategies to improve their reading, so learners correct themselves instead of a teacher doing it.

Recht (1976) says: "...in fact most readers, regress to correct a percentage of their errors. Self-correction occurs when the reader, aware that he has made an oral reading error, moves his eyes back over previously read material and attempts to read the text correctly. He is either successful, producing the expected response, or unsuccessful, producing an alternate response" (P. 632).

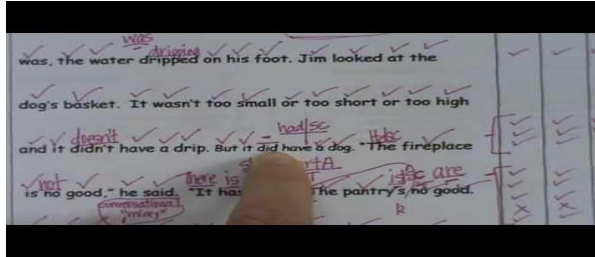
Why using such mechanism

Our established mechanism give the students the ability to self-monitor which enables them to select and use strategies to improve comprehension. Readers who self-monitor know when their reading makes sense and when it does not. If comprehension is blocked, they know what strategies to use to repair it. Self-correcting is a significant component of comprehension. Comprehension monitoring instruction teaches students to: Be aware of what they do understand, Identify what they do not understand and use appropriate strategies to resolve the problems in comprehension, because students learn from their mistakes. D. Recht (1976) says that "Research shows that self-correction is a positive indicator that the reader is comprehending. The correction, then, should not be regarded as an error, but rather as evidence of the reader's successful interaction with the text". So, Self-correcting mechanism helps students to reflect on their own language use and helps them to be more critical of their production.

The mechanism

Teachers can involve learners in self-correcting to different degrees, by giving them more or less guidances as to the location and nature of their errors and examples of good use of a language to compare it with their own reading. One

of the strategies that we use it in our mechanism is a guided reading and running records. Students are asked to record themselves reading into a computer, phone or tablet. The students have a passage in front of them that is at their reading level. They record themselves and then go back and listen to their recorded reading, marking any errors on their paper as shown in the illustration below.



If students are able, we have them mark what they said. They record the number of errors that they made and then repeat the process until they erase the errors. As last step, They should also play back the record and pause it every time they hear a mistake, talk about what they said and how it could be improved. Afterwards, play again and point out any significant errors that they missed and work on correcting the language together.

To do this mechanism, we have developed several strategies and techniques that encourage self-check, provide the necessary tools for self editing and proofreading, develop critical thinking and independence. The positive side of this approach is that evaluation gradually become and internal rather than external process, shifting the focus from grades to self-check and diminishing the tension caused by grades.

How to perform these strategies and techniques

To perform the strategy: we recommend the students to do the following three steps:

1) Reading aloud and record: It provide a demonstration of stopping within a text and predicting or searching for cues to self-correct. Stop and talk about why you have to look for more information (e.g., "Oooops! That didn't make sense. I need to...").this strategy has several advantages and among them:A) It trains them to listen to themselves. Too many students rush through answers without even taking a few seconds to gather their thoughts. B)It helps them take responsibility for their learning. The teacher is not there to correct them all the time, and the teacher can't correct every single mistake. C)It helps students gain a better awareness of the language. They're not just saying things in a language. They really "get it". D) It boosts confidence. When a teacher corrects a student, this mistake is singled out. The more a teacher corrects someone, the more aware they are of their mistakes – their confidence suffers. But by self-correcting, the student is taking charge; corrections are less easier. E) It allows students to gauge their own problem areas. Some might come to realize they always make verb tense mistakes. Others might see they need to improve their vocabulary and word choice.

2) the second step is to find the mistakes but First of all, we should help our students to define a mistake concerning their case. For us, a mistake is a misuse of the rule/s that has already been studied and exercised. A mistake is not a wrong use of rule/s or vocabulary that have not yet been studied. One of the effective technique, that we used, is to ask the students to note their errors. When noting down errors during reading, it is advised to group these mistakes by type by putting them under headings, for example: Subject, verb, Object...etc. when students come to correct them afterwards, they can pick and choose those that are most frequent/ important and also do so in logical order. Based on our experience with students, It is much simpler for students to follow if they correct their errors in its categories. It is also important to note that we encourage them to use colorful markers and special signs to edit, see the following Examples: Ex. She is read the book (error is the V), eliminate. (error is V. elimate).

3) The third step is to re-reread aloud: we ask the students to Periodically stop while they read to let the material "sink in" and think about what they just read. Perhaps it brings up certain memories or reminds them of something they like or dislike. We also ask the students to pause to ask themselves whether or not they understand what they are reading. If not, reread again. And ask a closing to the process.

4) In the last step, we ask the students to re-record to improve final reading. In their final error check, they should highlight mistakes, teacher should here provide them with necessary suggestions to create a list of repeating mistakes. Teachers should also give the students more and more exercises to practice specific points that they have probably misunderstood. If grading is necessary, suggest some extra points for completing the correction assignment.

Based on our experience, results showed that using the above tips always improved the student's overall performance, raised their self-confidence and developed their reasoning skills.

NEW RESULTS

The results of our students are very positive, The chart below shows the new results of our students after performing the mechanism for 2 semesters.

	semester 1	semester 2
Reading	73-82%	74-85%
Speaking	85-87%	85-86%
Writing	82-89%	81-88%
Listening	80-83 %	76-83%

As we can notice, The new results show that many students have shown improvement in the number of words that they read correctly in a minute, but, of course, there are still some students who are making the same mistakes and are not paying attention to what they are reading. Our goal is to get students to pay more attention to what they are reading and to read accurately the first time. The more attention we can draw to students' misreads and the more we can get students to see that they are not looking at the entire word, the fewer mistakes they will make and the better readers they will become. By comparing the old results with the new results, we can conclude the following:

	2010-2011			2016	
	S 1	S 2		S 1	S 2
Reading	65- 72%	62-71%	Reading	73- 82%	74-85%
Speaking	85-87%	85-86%	Speaking	85-87%	85-86%
Writing	79-86%	77-83%	Writing	82-89%	81-88%
Listening	80-83 %	76-83%	Listening	80-83 %	76-83%

- 1) The reading skill at the beginning of our project was between D and C and after performing our mechanism it did improve to be B which is at average level.
- 2) The writing skill did also improve because when we write, we imitate a writing style of something we read before. So, our mechanism had double impacts.

CONCLUSION

In our project, that took several years till we reached a better understanding to it, we developed a self-correction mechanism that allowed students to identify the mistakes they have made while reading and reading accurately at the first time. We showed how our modeling and practice were very successful. Statistics listed above, showed that many students have shown improvement in the number of words that they read correctly in a minute, but, of course, there are still some students who are making the same mistakes and are not paying attention to what they are reading. we will also analysis the Self-correcting materials, those that provide the student with correct instruction to use the mechanism. At the end, we evaluated this mechanism to show peers how effective it is and how student's ownership plays a critical role in the learning process.

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Self-Efficacy Study of Computer Science Engineering Students

Ildikó HOLIK

Ágoston Trefort Centre for Engineering Education

Óbuda University

Hungary

holik.ildiko@tmpk.uni-obuda.hu

ABSTRACT

In our study, the self-efficacy of 188 freshman computer science engineering students were surveyed. We studied how much they trusted that they would be able to carry out their action intentions and to what extent they were convinced of their ability to generally cope with difficult life situations, how much control they could exercise over their environment and adaptively cope with challenges and the expectations of their surroundings and everyday stress-inducing situations. In our study, Schwarzer's General Self-Efficacy Scale was used (Schwarzer and Jerusalem, 1995). We had hypothesized that the studied computer science engineering students had a bigger ratio of high self-efficacy than low. The outcome of the study supported our hypothesis. According to respondents, they experienced the most deficiencies in the area of creativity and handling unexpected situations, which areas need the most improvement.

Key words: Self-efficacy, Computer, Engineering, Students

INTRODUCTION

During the last decades, in higher education a growing attention is paid toward the measurement and developing of competencies of students. It became a preferred aim that education help the students to be successful in learning and in working after the university, to prove their capabilities.

Numerous definitions for the concept of competency is used, here we highlight the definition of Wheeler and Haertel (1993): "Competency is a system of knowledge, capability, bent, personal quality, experience and other traits, that give a base for the successfulness of learning or work" (cited: Hercz at al., 2013, 84). The most important property of competency measurements is that they yield data not about the formal achievements but about the capabilities being behind or just missing from behind (Halász, 2012).

The investigation of generic and specific competencies in higher education makes it possible to put into shape expectations in connection with their potential achievement and to analyse how their skills and capabilities used in learning advance their success at the university, and at their workplace respectively (Koltói, 2013). In different high education institutions different specific competencies are developed (Benedek and Molnár, 2017) but some general competencies are developed there indirectly, social, personal or communication competencies for example (Schomburg, 2010).

During the last years, several competency measurements have been executed in Hungary (Kiss at al., 2010; Bíró at al., 2007; Hercz at al., 2013). Knowing their results, it is a reasonable question: What to measure? The knowledge? The intelligence level? The skills? The aptitude of students for the profession chosen?

We are convinced that the indicators, solely in connection with the cognitive areas, do not yield sufficient information for predicting the students' level of aptitude for the profession chosen and the success in future work. This is the reason to measure a wider range of attributes in our research.

THE AIM OF THE RESEARCH AND THE AREAS INVESTIGATED

Our research group tried to obtain a global image of the competencies of computer science engineering students and was looking for development possibilities. Concerning the design of research, we based on the experiences of earlier measurements, in analysing data, we were taking into consideration their results published (Tóth, 2014; Tordai, 2016; Simonics, 2017; Sanda, 2016). The research began by measuring background data, and the following attributes were involved: competency list intelligence, style of learning, personality traits, emotional intelligence, achievement motivation, self-efficacy. The present essay deals solely with self-efficacy. The first phase of research was executed in September of the 2016/2017 session, among first-year computer science engineering students.

A pilot investigation in June 2016 (among first-year computer science engineering students as well) helped in developing and making precision enhancement of the tools of measurement and evaluation methods, taking the results of international scope into consideration. We attached great importance to check the reliability of the

measurement tools.

THE CHARACTERISTICS OF THE SAMPLE

A sample of 188 first-year undergraduate engineering informatics students of a Hungarian university participated in the study, including 166 males (88.3%) and 22 females (11.7%). The average age was 20.07. The youngest student was 18 years old, the oldest one was 26. The majority (34 %) of the participants is 20 years old (see Figure 1).

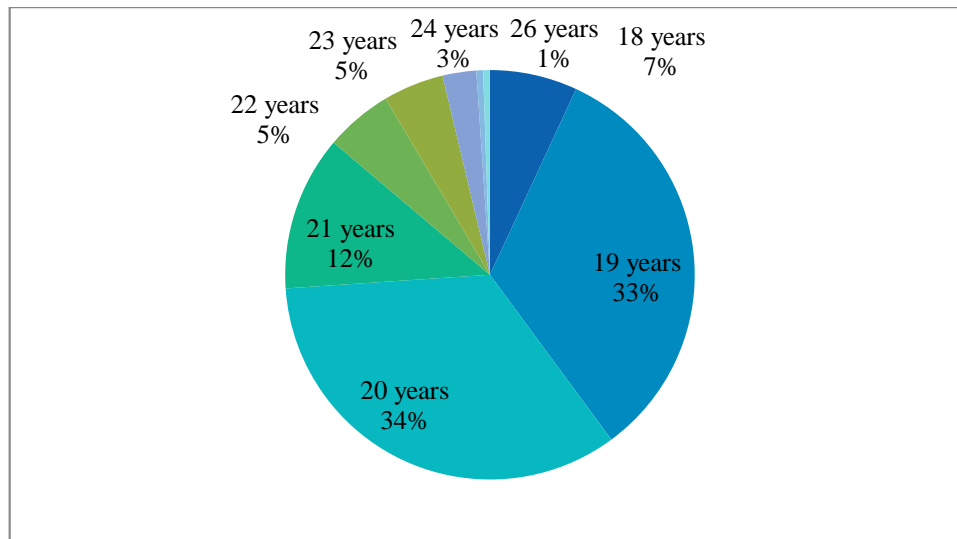


Figure 1: The age distribution of the engineering informatics students (N=188)

Most of the students live in the capital (38,8%), 11,2% in a county seat, 29,8% in some smaller town, 20,2% of them lives in a village. 60,1% of the participants took the final exam in 2016 at the secondary school, 19,7% in 2015, 9% in 2014, 11,2% earlier. Their majority, 29,8%, took the final exam in vocational school, and 28,2% in a traditional secondary school of 4 years. Most of the participants (76%) have work experience: 23,4% of them student work in their secondary school years, 70,2% summer work, 28,2% works after secondary school, and, in fact, 6,9% of them are working students.

TESTING THE SELF-EFFICACY

The concept of self-efficacy was used first by Albert Bandura who published his article entitled "Self efficacy – Toward a unifying theory of behavioural change" in 1977. This work was a breakthrough in psychology since Bandura constructed a frame and model able to explain and predict change of human behaviour.

Self-efficacy is the belief of the individual that he or she can solve the problem given (Bandura, 2006) perceivable certainty of being able to solve a problem, that is, a goal-oriented evaluation (Koltói, 2013). Our belief being able to achieve our purposes by our actions, intensively influence our decisions and efforts in numerous spheres of our life (Jámbori et al, 2016).

People having a weak self-efficacy (Bandura ,1994):

- live to see a difficult problem as a personal threatening and thus they shrink back from them,
- do not desire their goals so intensively, and thus, when they face a difficult problem, they pledge themselves less to them, do not concentrate on the successful issue but they think of their personal defectiveness, imagine the possible obstacles and expect a negative issue,
- if they face an obstacle, they retreat, namely they decrease the amount of efforts and they give up the struggle soon,
- if they do not succeed or face an obstacle it takes long to regain their self-confidence,
- they trace the insufficient achievement to their insufficient capacities, thus, even if their defeat is not total, they loose their belief in their own capabilities,
- they have a bent to stress and depression.

People having a strong self-efficacy (Bandura ,1994):

- if they face a difficult problem, they consider it a challenge,
- they are able to give themselves entirely to an activity, because they are really interested in it,
- they choose such goals which are challenges for them and they pledge themselves to them intensively,
- if they defeat in something, they increase their efforts and hold out,
- when they face an obstacle, or they are not successful in something, they regain their self-confidence soon,
- they live to see a defeat so that they trace it to the lack of their efforts or the insufficiency of their knowledge, that is, next they will have a possibility to success: the level of efforts can be increased and the knowledge can be acquired,
- they are sure to be able to control even the difficult situations,
- such people have a better achievement, their circumstances of life are better and they have less bent to stress and depression.

The aim of our research was to investigate the degree of confidence of the given person to be able to achieve his or her purposes of action, the degree of conviction to be able to manage the difficult life situations, to control people surrounding him or her and respond the challenges adaptively, to suit the expectations of other people, and manage the everyday stress-generating situations.

We applied the Hungarian version of General Self-Efficacy Scale, Schwarzer and Jerusalem,1995 (Kopp et al., 1993), where the students evaluated 10 positive statements on a 4 degree self-estimating scale (1 = Not at all true, 2 = Hardly true, 3 = Moderately true, 4 = Exactly true).

We have hypothesized that the studied computer science engineering students had a bigger ratio of high self-efficacy than a low one.

THE RESULTS OF OUR RESEARCH

The value 0,803 of Cronbach alpha shows that the reliability of the question form is good.

The average of scores for the 10 questions is 29,54 (N=188, MIN=19, MAX=40, SD=4,181). This is slightly lower than in case of the pilot test (30,96), but the total scores are between 10 and 40, this also can be considered as a high average score, showing a high self-efficacy.

This is almost equal to the result of the research on an international sample (in 25 countries) (Scholz et al., 2002): total average: M=29,55, SD=5,32.

However, comparing with the Hungarian sample of the international test above, our average is higher: 28,6 (N=158; Cronbach-alpha: 0,88).

This is true even if we consider the questions separately, except two questions (see Figure 2). These two items are: “It is easy for me to stick to my aims and accomplish my goals.”, and “When I am confronted with a problem, I can usually find several solutions.” The greatest difference can be found in case of Item 1. (“I can always manage to solve difficult problems if I try hard enough.”)

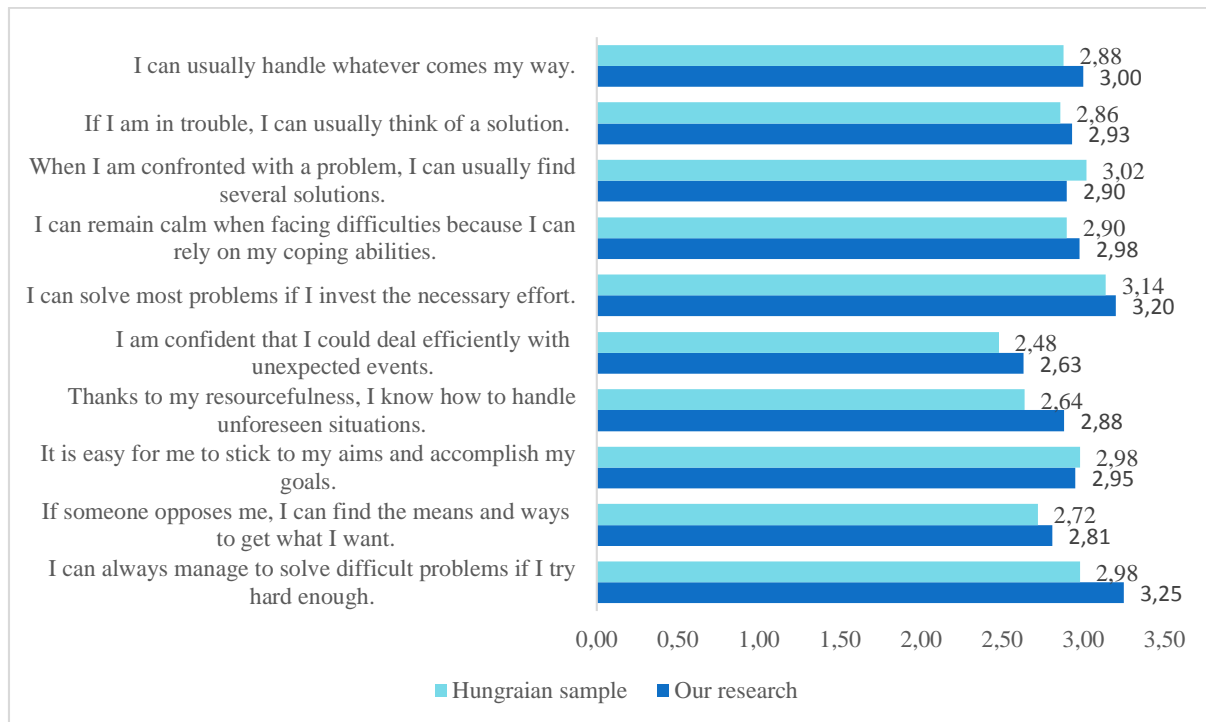


Figure 2: Comparison of results, based on the average score of items, for the Hungarian sample (N=158) (Scholz et al., 2002) of the international test and our test (N=188)

Éva Szabó and her colleagues (2015) represented the higher level of self-efficacy on a sample of grammar - school students, compared with an earlier Hungarian research (Kopp et al., 1993). However, the evaluation of the researchers is: “This difference does not imply a real difference of the level in the psychological sources of power between the two groups since the impact of the social expectation that is frequent in case of a self-filling question form and the social representation of the changes in society has to be taken into account.

As an effect of the political changes in 1989 in Eastern Europe, the experience of self-efficacy is expected more intensively. The character of an active person who can find a solution in any situation has been integrated into. the image of a successful person (Szabó, 2012). It is possible that the answers of the students were not in connection with their experience on themselves but with the trend concerning the ideal of the self.” (Szabó et al., 2015, 16.)

This can be true in our case as well.

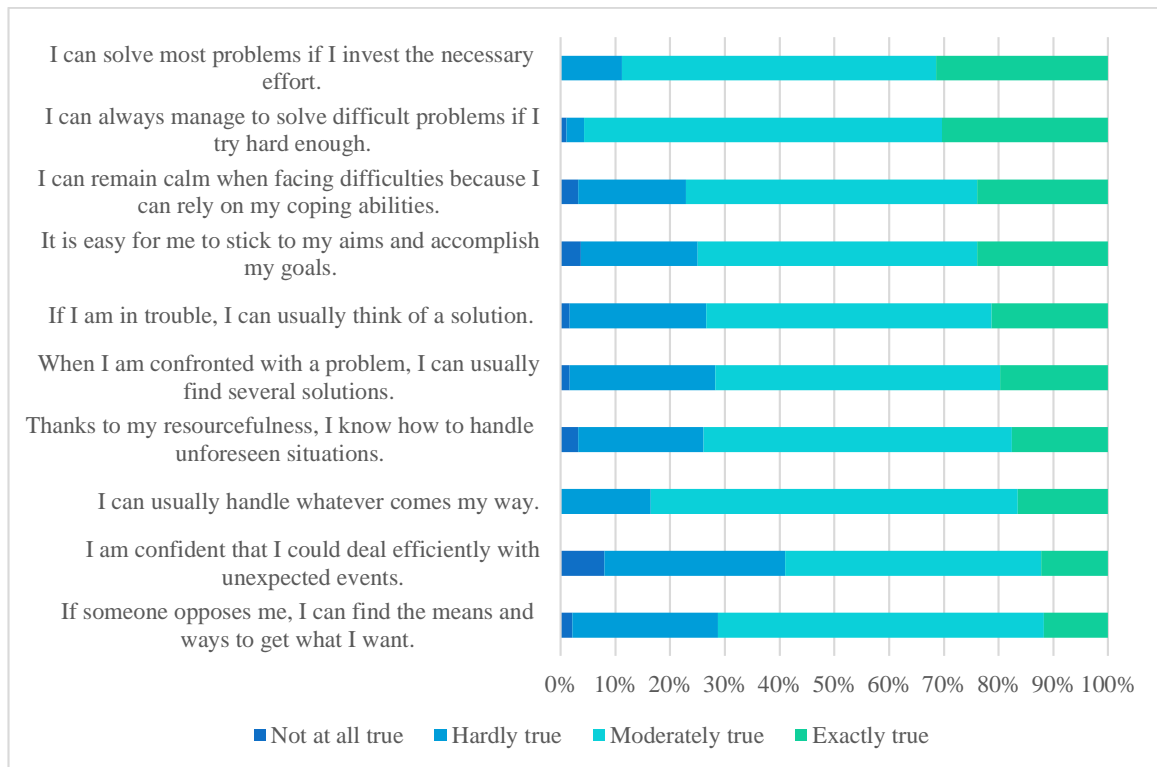


Figure 3: Answers, self-efficacy question form, (evaluated on a 4-degree scale, N=188)

Evaluating the questions separately (see Figure 3), one can see that the students emphasized mostly their ability of solving problems, while the creativity was not mentioned so frequently, furthermore the participants estimated so that they can manage the unexpected situations less.

This is an area to be developed as well.

Taking into account the mean of total scores ($M=29,54$) and the standard deviation ($SD=4,181$) we obtained the categories of medium, low and high self-efficacy. The self-efficacy of the majority (69,7%) of the students is medium, while 14,4% of them has a low and 16% has a high self-efficacy. (The results of the pilot test: medium: 68%, low: 14%, high: 18%.)

Self-efficacy	Number of students	%
Low ($<M-1SD$)	27	14,4
Medium (between $M-1SD$ and $M+1SD$)	131	69,7
High ($>M+1SD$)	30	16

Table 1: Evaluation of self-efficacy (N=188, based on the mean results of participants)

CONCLUSIONS

Several international research groups emphasize the role of self-efficacy concerning achievement in learning (Schunk, 1989; Zimmermann, 2000; Bandura, 2006). The results of the investigations suggest, that self-efficacy has an impact on the motivation of the students, achievement in study, cognitive and metacognitive strategies (Dinther et al., 2011) and expresses the connection between the different factors of competency measured.

The feeling of self-efficacy is determined by four factors: the earlier experiences of success and defeat, the observation of models of other persons (social learning), encouragement given by other people and physiological reactions (anxiety, for example). Consequently, self-efficacy is a psychological characteristic which can be influenced and developed, and has a determining significance in explanation of achievement level in learning (Schunk, 1989). Those students who have confidence in their capabilities, make more efforts for executing their tasks, they live to see them as challenges.

Consequently, it is important to develop the self-efficacy of students in high education as well, and it can be enhanced by applying education forms based on the active participation of the students.

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Semantic Translation of Selected Pun Words From the Holy Quran into English

Mohammed H. Al Aqad

*Faculty of Languages & Linguistics,
University of Malaya*

Kulwindr Kaur

*Faculty of Languages & Linguistics,
University of Malaya*

Ahmad Arifin Bin Sapar

*Faculty of Languages & Linguistics,
University of Malaya
arifin@um.edu.my*

Kais Amir Kadhim

Buraimi University College – Oman

Nor Hazrul Mohd Salleh

*Academy of Islamic Studies,
University of Malaya,
Malaysia*

ABSTRACT

Qur'an is the central religious text of Islam, which Muslims believe to be a revelation from God (Arabic: الله, Allah). It is widely regarded as the finest piece of literature in the Arabic language. Translation of the Qur'an has always been a problematic and controversial issue for each translator in the Islamic theology. Furthermore, translating Qur'anic text might raise several serious problems in translation; these problems are due to the different translations of puns and the misinterpretations between the intended meanings of pun with their inherent notions, which could result in a certain amount of ambiguity. The present study deals with problems of translating the rhetorical purposes of puns in the Glorious Quran into English. The study examines Quranic text and its four widespread English translations by Yusuf Ali (2014), Pickthall (1963, 2011), Arberry (1991), and Shakir (1999). The research corpus is based on four verses (Ayat) selected randomly from the Holy Quran. The objectives of this study are to determine the pun translation strategies applied by the translators in translating the Quranic puns from Arabic into English in terms of Delabastita's (1996) strategies. In addition, to find out to what extent is the meaning of the Arabic puns has maintained in the English translation with regard to Newmark (1988) translation methods. A descriptive method was used to analyze the data. The researcher calculated the frequency and percentage of strategies applied by each translator. The findings of the study will pave the way for further investigations on the translatability of different issues in the Holy Quran.

Keywords: the holy Quran, pun sentences, methods of translation, Delabastita strategies, typology of puns.

INTRODUCTION

Islam is a worldwide religion, which was sent to all humanity. Its teachings, orders, prohibitions and laws are all found in its holy book, the Quran. The holy Quran is a unique form of Arabic speech, and is divided into chapters (sura in Arabic), which are then divided into verses (ayah). The totality of every chapter has a special character, with its own unique form, and its unique use of literary devices.

Pun is one of the rhetoric devices that have been frequently used in the holy Quran. The puns have brought forth a sublime reconciliation between form and content.

Several scholars (e.g., Alexieva, 1997; Delabastita, 1996; Weissbord, 1996) used the terms wordplay and pun interchangeably; however, since distinguishing between wordplays and puns is not the focus of this study, it will be assumed that puns are included in the given definition of wordplay. Shaw (1905) indicated that puns have

appeared in literature since the time of Homer, 8th century B.C., states that pun is the humorous use of a word emphasizing different meanings or associations. Some scholars (e.g. Delabastita, 1997; Leech, 1969; Newmark, 1988) emphasized the homonymous and polysemous nature of words used in pun or wordplay. According to Newmark (1988, p. 217) one makes a pun by using a word, or two words with the same sound (piece-peace), or a group of words with the same sound (personne alitee / personnalite) in their two possible senses. He adds that the purpose of making a pun is to arouse laughter or amusement, and sometimes to concentrate meaning. Based on the reason that puns depend on the structural features of a language, and that different languages have different structures, it is believed that the task of translating them to be a very difficult one. The translation even will be more difficult between unrelated language systems such as Arabic and English. Besides the language distinctions, the different cultural backgrounds are also big barriers to translate Arabic puns into English. Moreover, the translation of the Quranic puns will causes serious problems to the translators since the holy Quran is a unique expression of the Arabic language and nothing can match its literary form.

A brief look at the studies on pun indicated that so far very little research has been done in the field. The current study is one of the few studies that focused on the holy Quran and pun translation from Arabic into English. It is conducted to see the strategies were applied by different translators in rendering the Quranic puns into English.

STATEMENT OF PROBLEM

Pun makes Arabic texts (Quranic, poetic and everyday formal expressions) more vivid and their content richer in semantic values. Puns are not often used for daily speech, so they have gained little attention from researchers. Puns are mainly used to attract the attention of the hearer/ speaker towards the dual meaning of the verse or sentence for example, {قَالُوا تَأْتِيهِمْ إِذْ هُمْ فِي ضَلَالٍ قَدِيمٍ}, They said: "By God, you are still persisting in your old delusion." Here the pun word is ضَلَالٍ which has two meaning, (1) ignorance and (2) love 'still loving Yusuf and don't forget him'. This meaning may deviate from its platform to yield another new meaning for instance, the first one is "not intended meaning", while the second is "intended meaning". Tanaka (1994: 68) notices, "Puns attract attention because they frustrate initial expectations of relevance and create a sense of surprise." The translator stands helpless towards such expression since it has two different meanings. Thus, the translator has to make a clear distinction in order to convey the real meaning of such an expression to the reader.

The Quran is opulent with a variety of meanings relevant to pun sentences, which are deserve an intensive study. The present study investigates the translation of prominent types of pun sentences in the Glorious Quran, which contain a given rhetorical purpose. It argues that each pun sentence has a particular rhetorical purpose, which may be missed if the translator fails to capture it through translation from Arabic to the target language. Consequently, the internal meaning of the pun sentence will be distorted and a different meaning of the original message is produced. Furthermore, rhetorical pun sentences are associated to the feelings of the speaker thus may be problematic issue to the translator seeking to determine how to convey that sentiment into the target language. Besides, sometimes there is a loss of meaning since the translator uses various linguistic components, which unrelated to the cultures involved. Although the use of pun sentences is quite common in the Glorious Quran, there are no studies to explicate the problem from translation perspective. Hence, the current study is intended to fill this gap. In other words, the intention of the current study is not to focus upon the amusing, tricky, and even humorous effects produced by puns. The aim is to pinpoint pun translation as a problematic area in Quran translation.

RESEARCH QUESTIONS OF THE STUDY

This study is an attempt to answer the following questions:

- 1) What are the translation strategies applied by the different translators in translating the Quranic puns from Arabic into English in terms of Delabastita's (1996) strategies?
- 2) To what extent is the meaning of the Arabic puns maintained in the English translation?

SIGNIFICANT OF THE STUDY

The current proposed study reserves its significance from the significance translation of the Holy Quran and the function of puns in creating a coherent and meaningful text through utilizing different types of puns in the text.

To the best knowledge of the researcher, and although to date there has been little of literature available on the contrasting parts between English and Arabic with regard to the Quranic pun, in each language, little work has been done on it. As far as translation is concerned, this study is expected to be of great value in the sub-field of

rhetoric pun on Quran translation between English and Arabic as a great deal of pun meanings and functions are found in both languages.

Furthermore, this study is hoped to contribute some important findings to the translation of Quranic text.

SCOPE AND LIMITATION OF THE STUDY

The study covers and tackles the English translation of Arabic puns in the Quranic text, and its inherent meaning. The study will focus only on the meaning, rhetoric function and strategies used of translating Quranic pun from Arabic into English.

LITERATURE REVIEW

Translation of Pun

According to Delabastita (2004), whether serious or comical, wordplay creates linguistic problems of translatability because different languages have different meaning-form distributions. Delabastita (1996) also believed that puns due to the combination of the subject-oriented (reference) and the self-oriented (self-reference) mode of language from which puns lend their individuality, present special problems to translators. Furthermore, he noted that a structural and typological dissimilarity of source and target language increases the linguistic untranslatability of puns (1996).

Alexieva (1997) argued that: the difficulty of translating puns is caused by the asymmetry between world and language manifesting itself in different ways in different languages. For example, a word, which has a set of multiple meanings in one language, may have a corresponding word in another with only one meaning or with a different set of multiple meanings.

As Weissbrod (1996) stated there are always subjective features relevant, including the translator's talent, proficiency, and willingness to spend time finding solutions in the face of hard-to-translate wordplays.

Delabastita strategies of pun translation:

Delabastita (1996) has presented the following translation strategies for wordplay (pun):

1. *Pun to pun*: the source text pun is translated by a target language pun, which may be more or less different from the original wordplay in terms of formal structure, semantic structure, or lexical function.
2. *Pun to non-pun*: the pun is rendered by a non-punning phrase, which may salvage both senses of wordplay but in a non-punning conjunction, or select one of the senses at the cost of suppressing the other; of course, it may also occur that both components of the pun are translated beyond recognition.
3. *Pun to related rhetorical device*: the pun is replaced by some wordplay related rhetorical device (repetition, alliteration, rhyme, referential vagueness, irony, paradox, etc.) which also aims to recapture the effect of the source text pun.
4. *Pun to zero*: the portion of text containing the pun is simply omitted.
5. *Pun ST= pun TT*: the translator reproduces the source-text pun and possibly its immediate environment in its original formulation, i.e. without actually „translating“ it.
6. *Non pun to pun*: the translator introduces a pun in textual positions where the original text has no wordplay, by way of compensation to make up for source text puns lost elsewhere, or for any other reason.
7. *Zero to pun*: entirely new textual material is added, which contains wordplay that has no apparent precedent or justification in the source text except as a compensatory device.
8. *Editorial techniques*: explanatory footnotes or endnotes, comments provided in translator's forewords, the anthological presentation of different, supposedly complementary solutions to the same source text problem, and so forth.

Translation Methods

Newmark (1988, p. 18) suggested a concrete steps and procedures in order to transfer the ST into the TL. Newmark (1988, p. 144) confirms that there are three basic translation processes:

- a. The interpretation and analysis of the SL text;

- b. The translation procedures, which may be direct, or on the basis of SL and TL corresponding syntactic structures, or through an underlying logical 'interlanguage';
- c. The reformulation of the text in relation to the writer's intention, the readers' expectation, the appropriate norms of the TL, and so on.

Accordingly, the translator first must understand or figure out the SLT. The process of understanding involves analyzing the text in several ways, linguistically, semantically, syntactically and culturally. The second phase is the transformation, where the translator tries to frame the meaning of the SLT to fit, linguistically and culturally, the TLT. The third phase is to produce the TI'.

Translation of the Holy Quran

The opponents of the illegitimacy of the holy Quran translation believe that "it is legitimate to translate all verses of the Quran to the foreign tongue" (Baker & Saldanha, 2008, p. 201). Their rationale is that we live in an era in which the wider demand for translations of the Quran, among Muslims and non-Muslims alike, has become far greater than at any time in the past. Thus, "Non-Muslim audience in many different parts of the world turns to the Quran almost always in translation in the search for the bases of deeper mutual understanding" (Morris, 2000, p. 53).

Muslim scholars take two opposing stands regarding the translation of the holy Quran: Some accept the idea of translating it while others refuse its translation totally. In the second edition of Routledge Encyclopedia of Translation Studies (2009), the translatability and legitimacy of the translation of the holy Quran has been discussed. For example, it mentions that the Quran cannot be translated with the view that the book has senses, which are exclusive to the Quranic Arabic. On the other hand, the Al-Azhar Encyclopedia states that 'Al-Azhar Alsharif' (Egypt's renowned Islamic institution, al-Azhar al-Sharif, has been serving the Islamic World for more than 1,000 years) agreed on Pickthall's translation of the Quran. As long as, his 1930 translation does not carry the title of 'The Quran', rather it should be 'a translation, or interpretation of the meanings of the Quran'. According to Arberry (1998), rhetoric and rhythm of the Koran are so distinctive, powerful and emotive that any translation seems to be just a poor copy of the glorious original.

Many orientalist and linguists have highlighted the uniqueness and sensitiveness of the Quran as a text, making it a genre of literary beauty (Tzortzis, 1960). As Mir (2000) states, what makes the literary repertoire of the Quran rich is its masterful use of language on the level of words and phrases. According to him, the all-pervading rhythm along with the rhymed prose creates, in many verses, a spellbinding effect for those who can read the Quran in Arabic that is impossible to reproduce.

Definition of Pun in English

Also, in this definition, according to Sanderson (2009): According to Delabastita (1996): wordplay is the general name for the various textual phenomena in which structural features of the languages used are exploited in order to bring about a communicatively significant confrontation of two (or more) linguistic structures with more or less similar forms and more or less different meanings. (p. 128). In this definition, it is stated "the pun is based on the confrontation of linguistic forms that are formally similar, but have different meanings" (Delabastita, 1993, p. 58).

The formal similarity is manifested in terms of spelling and pronunciation. It is therefore the confrontation of similar forms and dissimilar meanings between linguistic structures, which rise to ambiguity. This means that ambiguity arises because words that look and/or sound the same but have different meanings are exploited in such a manner that an additional semantic layer is added to the otherwise stable relationship between signifier and signified (p. 123).

Categorization of Pun in English

Several criteria can be attended to carry out a categorization of wordplay. Delabastita, (1993) applied a formal criteria and a linguistic phenomenon as basis of his classification. According to the formal criterion, a distinction can be drawn between two types of puns, namely vertical pun and horizontal pun. Delabastita asserted that different types of horizontal pun are Homophony, homography, paronymy, and homonymy (Ibid). He explained the puns as the follow:

- *Homophonic pun* is based on the exploitation of word pairs, which sound alike, but are different in spelling. An example of such word pair is tale and tail.

- *Homographic pun* indicates two expressions, spelt the same way and creating graphemic ambiguity. A word of the same spelling as another but derived from a different root and having a different meaning (e.g., to wind and the wind; to present and a present or bow (the front part of a ship), bow (to bend), and bow (a decorative knot)).
- *Paronymic pun* exploits words that have slight differences in both spelling and pronunciation. An example of such a word pair is adding in Salt/insult to injury.
- *Homonymic pun* is comprised of words that are identical in both spelling and pronunciation. The words have different meaning, though. An example is the word bear, which can be a verb (to carry) or a noun (the animal).
- *Syntactic pun* is constituted by a statement, which can be analyzed syntactically in at least two different ways.
- *Morphological pun* is composed by words, which can be related to other words by means of morphological devices such as derivation or compounding.

Definition of Pun in Arabic

Originally, the Arabic rhetorical term “التورية” [at-Tawriyyah, lit.pun] is derived from the Arabic statement “وَرَيْتُ الْخَبْرَ أَوْ الشَّيْءَ” [warraytu al-khabara aw al-shaya] which literally means, “I have hidden the news or the thing in order not to be known by others”. Technically speaking, it means intentionally hiding a very subtle sense of a spoken or written text and makes it difficult or impossible to be completely grasped by certain people in an audience (Al-Jawhari, 1956:2523). This interpretation is clearly supported by a number of Quranic texts such as:

(1) Surah “An-Nahl, The Bee”, ayah 59.

يَتَوَارَىٰ مِنَ الْقَوْمِ مِنْ سُوءِ مَا بُشِّرَ بِهِ .

He hides Himself with shame from his people, Because of the bad news he has had.

(2) Surah “Al-Ma'idah, The Table” ayah 31.

فَبَعَثَ اللَّهُ غُرَابًا يَبْحِثُ فِي الْأَرْضِ لِيُرِيَهُ كَيْفَ يُؤَارِي سَوْأَةَ أَخِيهِ

Then God sent a raven that scratched the ground in order to show him how to hide the nakedness of his brother.

Rhetorically speaking, the Arabic term “تورية” and its English counterpart “pun” both refer to a figure of speech which is rich in its linguistic (syntactic, semantic, morphological, and lexical) content. Pun is seen by Arab rhetoricians as a fundamental figure of speech for its rhetorical force in texts. It has been used as a rhetorical device and played an essential role in both poetry and prose since the pre-Islamic era. It has been frequently used in the Glorious Quran as well as in the Prophetic Tradition to express certain semantic values in various textual structures. Abd Ut-Tawwab (1967) defined pun “At-Tawriyyah” as:

“A word which has two meanings: Adjacent with clear reference, and far with hidden reference. The latter is often intended. The faster that comes to the hearer’s mind is the approximate meaning. The speaker aims at the far meaning but uses the near one to cover it” (p. 293).

Briefly speaking, English rhetoricians mostly concentrate on a number of phonologically oriented rhetorical figures, which have homophonic, homographic and / or homonymic nature, and consider them as major types of pun, while the Arab rhetoricians treat these western puns as types of paronomasia, therefore they are seen as non-puns in Arabic rhetoric.

Categorization of Pun in Arabic

According to most Arabic rhetoricians (al-Qazwini, 1975:p.499; Al-Satiq, 1971;As-Safadi, 1987; Ibn abi Rabiaah, 1935; Al-Jawhari, 1956) there are four main types of Arabic puns which are governed and controlled by a logico-semantic contextual framework which determines both their immediate and far-fetched meanings. According to this criterion, pun is divided into:

(1) Tawriyyah al-Mujaradah (stripped-off pun)

In this type of pun, devoid from duo; the lexical requirements of the punned with (al-muwarra bihiالمواري به), which normally represents the immediate meaning, and the requirements of the punned to (al-muwarra anhuالمواري عنه), which are represents by the remote meaning. Consider the following Quranic text:

Surah “Taha”, ayah 5.

الرَّحْمَنُ عَلَى الْعَرْشِ اسْتَوَىٰ

The ever merciful, established on the throne (of authority).

(2) Tawriyyah al-Murashahah (strengthened pun)

In this type of pun, there must be a lexical requirement for the punned with *المواري به*, i.e. the immediate meaning, which should be stated either before or after the punnable word. According to this definition, the present type of pun is divided into two subtypes:

I. Pre-required Strengthened Pun

The speaker\writer should provide a lexical requirement for the “punned with *المواري به* - immediate meaning” before the word, which carries the pun.

Consider the following Quranic text:

Surah “Adh-Dhariyat”, ayah 47.

والسماء بنيناها بأيدي وانا لموسعون

We built the heavens by Our authority; and We are the Lord of power and expanse.

II. Post-required Strengthened Pun

The speaker\writer should provide a lexical requirement for the “punned with *المواري به* - immediate meaning” after the word, which carries the pun.

Surah “Al-Ghashiyah”, ayah 8.

{وَجُوهٌ يَوْمَئِذٍ نَّاعِمَةٌ} {لَسَعْيِهَا رَاضِيَةٌ}

Many faces will be joyous on that day

(3) Tawriyyah al-Mubayyinah (clarifying pun)

In order for this type of pun to work properly, the speaker\writer should provide a lexical requirement for the “punned to *المواري عنه* - remote meaning” before or after the word, which carries the pun.

Thus, this type of pun is divided into two subtypes:

I. Pre-required Clarifying puns:

The speaker\writer should provide a lexical requirement for the “punned to *المواري عنه* - remote meaning” before the word, which carries the pun such as:

Surah “Yousuf”, ayah 70.

{فَلَمَّا جَهَّزَهُمْ بِجَهَّازِهِمْ جَعَلَ السِّقَايَةَ فِي رَحْلِ أَخِيهِ ثُمَّ أَذَّنَ مُؤَذِّنٌ أَتَتْهَا الْغَيْرُ إِنَّكُمْ لَسَارِقُونَ}

When he had given them their provisions, he put his goblet in his brother's saddlebag. Then a crier announced "O men of the caravan, you are thieves."

I. Post-required Clarifying puns:

The speaker\writer should provide a lexical requirement for the “punned to *المواري عنه* - remote meaning” after the word, which carries the pun such as:

Surah “Al-Rahman”, ayah 6.

{الشَّمْسُ وَالْقَمَرُ بِحُسْبَانٍ} {5} {وَالنَّجْمُ وَالشَّجَرُ يَسْجُدَانِ}

The sun and moon revolve to a computation; And the grasses and the trees bow (to Him) in adoration.

(4) Tawriyyah al-Muhayyah (preparing pun)

In this type, the pun can only be considered if it came before or after a punnable word.

Surah “Al-Rahman”, ayah 6.

{يَوْمَ تَقُومُ السَّاعَةُ يُقْسِمُ الْمُجْرِمُونَ مَا لَبِثُوا غَيْرَ سَاعَةٍ}

The day Resurrection is set the sinners will swear: "We did not tarry more than an hour (and cannot be guilty)."

METHODOLOGY

In this section, the researcher is discussing the theoretical framework of investigation, as well as the methodology, which consists primarily of description of the data collection, justification for choosing the data and method of Analysis.

Data Collection

To achieve the purpose of the study the descriptive approach is selected. This study is focusing on the Holy Quran as the source text (ST) and its four English translations by Yusuf Ali (2014), Pickthall (1963), Arberry (1991), and Shakir (1999) as target texts (TT). The data of four (Ayah) verses is gathered from the holy Quran and their equivalents in the selected English translations.

Method of Analysis

To fulfill the aim of the study, 4 Ayat from the holy Quran is selected randomly. The selected Ayat in the original Arabic source text, the holy Quran, is read. 4 texts out of the puns under study is selected and underlined. The correctness of some examples is considered by using the commentaries of *Tafsir ibn Kathir* (AH 759). Then, the same Ayat in the four English target texts is read to *identify* those parts of the texts, which corresponded to the original puns and underlined them. After that, Delabastita's (1996) strategies is used as the theoretical framework in the study to identify which strategies are applied in translating each original pun by the translators. Then, Newmark's (1981, 1988) methods of translation is used to see how the four translators translated the pun sentences into English. Having identified each translator's strategies, the frequency and percentage of each strategy is calculated and presented in a table of four translators to identify the most frequently used strategy by each translator. Finally, conclusions are drawn based on the data analysis.

Justification of Data and Methodology

The Justification for use of this methodology is to investigate translation of puns expressions in the holy Quran from semantic, pragmatic, and rhetoric perspective that has been recognized by several scholars (Mark, 2014; perry, 1999; Abdul karim, 2006). This study is based on a PhD research project that concerned with four English versions of translation of the Holy Quran, and the selection of forty pun words from the holy Quran.

The case study approach is a highly appropriate method for investigating the precise translation of Holy Quran for non-Arabic speakers.

DATA ANALYSIS

In this section, 4 data out of the puns under study is gathered and analyzed according to Delabastita's (1996) strategies. Then, the frequency and percentage of each strategy is calculated. The results are presented in a table. Some more prominent examples are presented below as better illustration of the pun translation strategies.

Text 1:

(Data 1) Surah "Taha- Ta Ha", ayah- verse 5.

ST: الرَّحْمَنُ عَلَى الْعَرْشِ اسْتَوَى

BT: al rahman ala al arish istawa

TT-1: The most Gracious (Allah) rose over (Istawa) the (Mighty) Throne (in a manner that suits His Majesty), rose over (Istawa) the throne (of authority) (Ali, 2006)

TT-2: The Beneficent One, Who is established on the Throne. (Pickthall, 1963)

TT-3: the All-compassionate sat Himself upon the Throne; to Him belongs (Arberry, 1991)

TT-4: The Beneficent Allah is firm in power. (Shakir, 1999)

According to the commentary of *Tafsir ibn Kathir* (AH 759) the underlined pun is "استوى" is a noun which has two meaning, first; (sitting) which is immediate and non-intended meaning and second, (power of authority) which is remote and intended meaning.

Neither of Pickthall, Arberry and Shakir managed to convey the pun to the target text since the pun has been translated by the pun to non-pun strategy. However, Yusuf Ali has managed to translate the source text pun into target text pun "rose over (Istawa)" and quoted the same Arabic word with footnote indication. Pickthal has translated source text pun into "who is established" while Arberry has translated it into "sat Himself upon", and Shakir has translated it into "firm in power". Most of translators Pickthall, Arberry and Shakir have conveyed only the sense of the puns into the target text.

Hence, the aesthetic effect of source text pun has lost in the process of translation. The type of pun used in this text is *Tawriyyah al-Mujaradah* (stripped-off pun) due to it is devoid from any lexical requirements of the punned with (al-muwarra bihi الموارى به), which normally represents the immediate and non-intended meaning, and the requirements of the punned to (al-muwarra anhu الموارى عنه), which represents the remote and intended meaning.

Rhetorically, the word (استوى) could be interpreted in two different meanings as in the following:

A. Sit.

B. Rose over (Istawa) the throne of authority.

The analysis of these instances has different sense. The word *إستوى*, *Istawa* has been translated differently by the translators. Pickthall translated as *established*, while, Arberry translated as *sat Himself upon*, then Shakir translated as *firm in power*. Unluckily all of them used the literal translation method to deliver the meaning and represent the non-intended meaning whereas Yousuf Ali has used the faithful translation method and translated it as *Rose over (Istawa) the throne of authority*, which convey the meaning, represents the remote and intended meaning. The pun in (*Istawa*) cannot be grasped by native speakers of Arabic unless they are acquainted with some religious aspects. Theoretically speaking, any word “which has two completely different senses, and can represents remote and intended meaning” can be used as a pun by linguistically and rhetorically competent native speaker.

Text 2:

(Data 2) Surah “Adh-Dhariyat- the Winnowing Winds”, ayah- verse 47.

ST: **وَالسَّمَاءَ بَنَيْنَاهَا بِأَيْدٍ وَإِنَّا لَمُوسِعُونَ**

BT: wa alsama'a banainaha bi ayd wa ina la mowaseoun

TT-1: We built the heavens by our authority; and we are the Lord of power and expanse (Ali, 2006)

TT-2: We have built the heaven with might, and we it is who make the vast extent (thereof). (Pickthall, 1963)

TT-3: And heaven - We built it with might, and we extend it wide. (Arberry, 1991)

TT-4: And the heaven, we raised it high with power, and most surely, we are the makers of things ample. (Shakir, 1999)

In this verse, the pun is “بأيدي” which has translated differently by several ways. Pickthall, Arberry, Shakir have translated the source text pun literally “*with might or with power*” and transmitted only the sense of original pun by applying the pun to non-pun strategy. While, Ali has translated as “*by our authority*” and sustains the same effect of aesthetic and meaning in both texts by adopting the faithful translation method of Newmark. In fact, he has transmitted the source pun from *Tawriyyah al-Murashahah* (strengthened pun) into morphological pun. In this sentence the punned with is “*بَنَيْنَاهَا – we built it*” is associated with the close meaning “we built it by our hands” because the building fits the hand, however, this is not right translation and does not fit at all with the power of Allah almighty. The underlined pun “بأيدي” is an Arabic noun which has two meaning, first; (with hand) which is called an immediate meaning “*with hand*” but non-intended and the second; (authority) which is remote and intended meaning.

Text 3:

(Data 3) Surah “Najm- The Star”, ayah- verse 1-3.

ST: {3} **وَالنَّجْمِ إِذَا هَوَىٰ {1} مَا ضَلَّ صَاحِبُكُمْ وَمَا غَوَىٰ {2} وَمَا يَنْطِقُ عَنِ الْهَوَىٰ {3}**

BT: wa alnajim eza hawa, ma dal sahibakum w ma ghawa, w ma yantiq an al hawa

TT-1: By the Star when it goes down, (1) Your Companion is neither astray nor being misled. (2) Nor does he say (aught) of (his own) Desire. (3) (Ali, 2006)

TT-2: By the Star when it set, (1) Your comrade erred not, nor is deceived ; (2) Nor doth he speak of (his own) desire. (3) (Pickthall, 1963)

TT-3: By the Star when it plunges (1) your comrade is not astray, neither errs (2) nor speaks he out of caprice(3) (Arberry, 1991)

TT-4: I swear by the star when it goes down (1) Your companion (PM) does not err, nor does he go astray (2) Nor does he speak out of desire (3) (Shakir, 1999)

In this example, the pun in the words “*هوي - هوي*”. According to the commentary of *Tafsir ibn Kathir* (AH 759), the first word is a verb and means, “goes down” and the second word is a noun and means “desire”. None of Pickthall and Arberry took into account the existence of pun in these two verses since they have translated the source text pun literally and have tried to transmit only the sense of pun by applying the pun to non-pun strategy. Arberry has selected the words “plunges-caprice” and Pickthall has selected the words “set-desire” which all of them divert from the source text pun. However, Shakir and Yusuf Ali have selected the words “goes down-Desire” for source text puns, by using pun-to-pun strategy. Therefore, Pickthall and Arberry have failed to transmit the sense of source text into target text, while Shakir and Yusuf Ali have sustained to transmit the aesthetic and rhetoric effect of source text into the target text. Consequently, the meaning of the source text is sustained in the target text after applying the faithful translation method.

Text 4:

(Data 4) Surah “Rahman- The Gracious”, ayah- verse 7-8.

ST: {8} وَالسَّمَاءَ رَفَعَهَا وَوَضَعَ الْمِيزَانَ {7} أَلَّا تَطْغَوْا فِي الْمِيزَانِ

BT: wa alsamaa rafaa’ha wa wadaa’ al mizan, ala tatghaw fi al mizan

TT-1: And the Firmament has He raised high, and He has set up the Balance (of Justice), (7). In order that ye may not transgress (due) balance. (8) (Ali, 2006)

TT-2: And the sky He hath uplifted; and He hath set the measure, (7) That ye exceed not the measure, (8) (Pickthall, 1963)

TT-3: and heaven He raised it up, and set the Balance (7) Transgress not in the Balance (8) (Arberry, 1991)

TT-4: And the heaven, He raised it high, and He made the balance (7) that you may not be inordinate in respect of the measure (8) (Shakir, 1999)

These two verses are considered clear examples for pun “Tawriyah al-Mubayyinah (clarifying pun)” in the holy Quran. According to the commentary of *Tafsir ibn Kathir* (AH 759), the underlined words in the translated texts hold different meanings from the original Arabic texts. In the Arabic text, the word “الْمِيزَانِ, al mizan” means justice while the second one means “balance”. However, these two words have been translated by four different strategies. Arberry and Pichthall have applied the strategy of pun to related rhetorical device through repeating the equivalent word. Shakir has applied the strategy of pun to non-pun due to transmitting only the sense of the source text pun into the target text, while, Yusuf Ali has used the strategy of pun-to-pun and replaced the original pun with a pun in the English. The pun produced in target text is called “homonymic” pun, which is the equivalent to pun called “Tawriyah al-Mubayyinah” in the source text. Linguistically, Yousuf Ali has managed to convey the rhetorical and pragmatic sense of the Arabic pun into English without changing the meaning. Thus, the meaning of the source text is sustained in the target text after applying Newmark’s (1981) faithful translation method.

CONCLUSIONS

From the analysis, it can be realized that the occurrence of the pun in the Quran generates a significant problem for the translators since several words in the Quranic verses are pun. Consequently, if the Quran translators are not aware of the factors that help them to capture the deep meaning, they will not be able to transfer the intended meaning effectively.

Obviously, the analyses show that the translators do not have a certain strategy in solving the problem of the pun in the Quran. Furthermore, it seems that depending on numerous commentaries is an important strategy to define the meaning of the pun words, but this will confound the translators the more because, in some cases, there are several interpretations for one word or for one case in the Quran. Consequently, it is recommended for the translators to relay on at least two of the authorized commentaries and employ them.

In terms of style of translation, Ali’s translation is in a modern style and plain English that flows softly and it is easy to read and comprehend. He also opted for contemporary language usage of sentence structure and he avoided confusing phrases. He transliterated many Arabic words and provided their meanings in parenthesis.

The selected translators did not treat the problem of the pun in the Holy Quran carefully. They transferred most of the samples of the pun words into primary, sense by using literal and formal translation. Only in a few instances did they transfer by using paraphrase strategies.

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Semi-Unplugged Tools for Building Algorithms With Sprego

Piroska BIRÓ

Faculty of Informatics

University of Debrecen

Hungary

biro.piroska@inf.unideb.hu

Mária CSERNOCH

Faculty of Informatics

University of Debrecen

Hungary

csernoch.maria@inf.unideb.hu

ABSTRACT

Sprego is a programming approach in spreadsheet environments, which is firmly supported by unplugged and semi-unplugged tools for better comprehension. In the present paper we provide details of how authentic webpage-tables support real world problem solving and serve as semi-unplugged tools.

The “Computer Science Unplugged” method is generally accepted in communicating the great ideas of computer science. However, we have found that the variation and the right proportion of unplugged and semi-unplugged tools can serve these great ideas also satisfy students’ eagerness for digital contents and tools. In this context we must clarify the misconception that both programming and end-user activities start when the computer is switched on. Beyond this, we provide details of our experience on how data management and end-user programming in spreadsheet environments can be introduced and supported with semi-unplugged tools.

Along with previously suggested ideas, we have found that teaching algorithms and programming in spreadsheet environments are both equally possible, but less demanding than ‘classical’ programming. To carry out coding in spreadsheets, we developed the Sprego – Spreadsheet Lego – high mathability programming approach and language. The semi-unplugged tools, which we rely on heavily in Sprego, are authentic data arranged in tables – primarily downloaded from the Internet and/or collected by students. The authentic tables allow both teachers and students to make a deep analysis of the content and structure of the data, to recognize data types, convert files, formulate tasks and problems based on the data, and finally to discuss and debug the problem solving processes and solutions. Most of these processes can be supported by providing the tables in printed form – either on paper or on digital devices –, prior to or alongside the coding process. One further feature of Sprego is the extensive use of composite functions. With this other semi-unplugged approach the discussion and debugging of solutions are strongly supported and it allows students to share the great ideas of computer sciences, and to develop computational thinking and algorithmic skills.

INTRODUCTION

“Spreadsheets are everywhere in modern business, from the smallest organisations to the largest and most complex.”
(ICAEW [SCF], 2016)

It is wildly accepted that spreadsheets are pervasive, particularly among finance users (ICAEW [SCF], 2016); however, recent research in education has proved that (1) spreadsheets can be used in much wider contexts (Kadijevic, 2013; Angeli, 2013; Csernoch, 2017), (2) education and training can start from early ages in school (Csernoch, 2016; Biró & Csernoch, 2017a), and (3) they are programming interfaces (Hubwieser, 2004; Schneider, 2004, 2005; Zsakó, 2006; Elliott, 2007; Wakeling, 2007; Sestoft, 2011; Csernoch, 2014, 2017; Csernoch & Biró, 2015, 2017b).

Beyond the opportunities contained within spreadsheets, we are faced with several problems related to both their use and the way they are taught. The consequences of inappropriate spreadsheet use in finance is wildly researched and analyzed, due to the serious losses originating from erroneous spreadsheet documents ([Horror Stories], 2017; Panko, 2013, 2015; Panko & Port, 2013). One of the reasons for this failure is clearly stated in the Spreadsheet Competency Framework (SCF): “Spreadsheet skills are often learned ad hoc – almost two-thirds of Excel Community users are self-taught – and many users are unaware of their own true competency. Novices are generally overconfident; experts tend to sell themselves short.” (ICAEW [SCF], 2016). Among several other reasons it has been shown (Panko, 2013, 2015; Panko & Port, 2013; Kadijevic 2013; Kruger & Dunning, 1999) that spreadsheet education is almost invisible to ICT professionals and computer sciences (CS) and/or thought to involve boring routine tasks in general educational contexts (Gove, 2012, 2014). These misconceptions would

explain the poorly developed and utilized spreadsheet documents and their negatives consequences. Recognizing the lack of spreadsheet competences, again in a financial context, the ICAEW have published the “Twenty principles for good spreadsheet practice”, the second edition of it (ICAEW [20 Principles], 2016), and the “Spreadsheet competency framework. A structure for classifying spreadsheet ability in finance professionals.” (ICAEW [SCF], 2016). These documents are to be warmly welcomed since they provide the bases for further research in spreadsheet competences.

However, we have found that the ICAEW documents support neither the programming aspect of spreadsheets nor the development of computational thinking (Wing, 2006). They rather focus on the tools within these frameworks and support the idea that typical spreadsheet users just want to use a power tool, with the craft coming later. This is the “classical” and widely accepted approach to spreadsheets, where software is primarily taught with a technocentric and decontextualized focus (Angeli, 2013). In view of all these misconceptions, we have published the Edu-Edition of the Spreadsheet Competency Framework (E²SCF, Csernoch & Biró, 2017c), where the focus is on the development of computational thinking, high-mathability computer problem solving, and knowledge transfer – in general, the future competences of the digital world (Davies et al., 2011).

Within the framework of the E²SCF we and our colleagues have developed several unplugged (Csernoch, 2016; Csernoch & Biró, 2017a) and semi-unplugged tools (Csapó & Sebestyén, 2015) to introduce spreadsheet programming in schools. In the present paper we focus on several semi-unplugged tools to support real world problem solving in spreadsheet programming. These are primarily based on authentic tables whose sources are webpages containing tables or imitations of tables and/or the private collections of students/teachers.

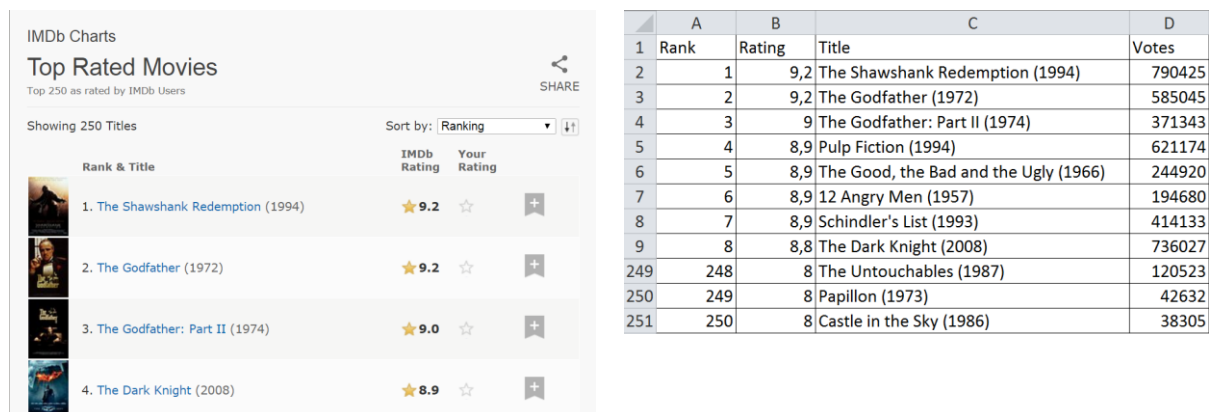
AUTHENTIC TABLES FOR SPREADSHEET PROGRAMMING

As mentioned in the previous section, one of the main reasons for spreadsheet failures is a lack of motivation. Students are not interested in mindless and decontextualized data; they prefer contexts which are interesting and sources of real information retrieval. In the following we present webpages, their converted spreadsheet versions, tasks and games developed on these tables, and examples of the webpage→spreadsheet conversion (W→S).

One further advantage of using authentic tables as a data source is that this approach extensively supports knowledge transfer: (1) the boring act of typing is replaced by handling files of various formats, which is one of the crucial elements of ICT studies, (2) the normalization of the tables leads to basic database management knowledge, (3) the conversion process requires algorithmic skills, which are the bases for further studies in ICT and computer sciences, especially in programming, and (4) through the contexts of these tables a close link is built with other sciences and subjects.

TABLE EXAMPLES

One of students’ favorite subjects is digital media, and within this framework they are interested in movies, music, and video games. We have found that they frequently use the IMDB (Internet Movie Database) charts, so we introduced one of these tables into our spreadsheet classes ([IMDB], 2013). However, the recently available webpage contains one fewer column (Figure 1, left), so we use an older version, downloaded in 2013 which is available in our collection of Sprego tables ([Sprego tables], 2017; Figure 1, right; Figure 8).



	A	B	C	D
	Rank	Rating	Title	Votes
1	1	9,2	The Shawshank Redemption (1994)	790425
2	2	9,2	The Godfather (1972)	585045
4	3	9	The Godfather: Part II (1974)	371343
5	4	8,9	Pulp Fiction (1994)	621174
6	5	8,9	The Good, the Bad and the Ugly (1966)	244920
7	6	8,9	12 Angry Men (1957)	194680
8	7	8,9	Schindler's List (1993)	414133
9	8	8,8	The Dark Knight (2008)	736027
249	248	8	The Untouchables (1987)	120523
250	249	8	Papillon (1973)	42632
251	250	8	Castle in the Sky (1986)	38305

Figure 1: The IMDB Top Rated Movies webpage (retrieved in 2017, left) and its spreadsheet version (retrieved in 2013, right).

In recent years students have become interested in the subject of healthy and nutritious foods, weight gain and obesity, and so they like to see calorie tables (Figure 2, Figure 9). Another favorite source of data and information are local food webpages (Figure 14 – Figure 16).

Choisir sa pub		Calorie valeur	Aliment liste	Apport calorie
Apéritifs (pour 100 g)				
●	Apéricube La Vache qui rit (à l'unité)	16 calories		
●	Bretzel (à l'unité 15 g)	80 calories		
●	Cacahuètes (à l'unité)	10 calories		
●	Chipster salé	460 calories		
●	Chips Vico à l'ancienne saveur moutarde	549 calories		
●	Crackers Belin Monaco emmental	555 calories		
●	Miniquiche	537 calories		
●	Minizza	492 calories		
●	Monaco	507 calories		
●	Mousse de poisson	185 calories		
●	Noix de cajou	612 calories		

	B	C
1	Categories/Foods	Calories
2	Apéritifs (pour 100 g)	
3	Apéricube La Vache qui rit (à l'unité)	16 calories
4	Bretzel (à l'unité 15 g)	80 calories
5	Cacahuètes (à l'unité)	10 calories
6	Chipster salé	460 calories
7	Chips Vico à l'ancienne saveur moutarde	549 calories
20	Rillettes d'oie	464 calories
21	Rillettes de saumon	320 calories
22	Boissons	
23	Bière canette = 33 cl	178 calories
701	Végétaline	900 calories
702	Féculents & Boulangerie (pour 100 g)	
703	Baguette (unité)	510 calories
772	Tarte (pommes)	300 calories
773	Triscottes	390 calories

Figure 2: The Les calories webpage (left) and its normalized spreadsheet version (right).

The most frequently searched and eagerly received contents include tables dealing with countries, and their statistical extremes (the largest, the highest, the smallest, etc.), data which is not obvious and/or is unique (complete lists of various subjects, war losses, expenses, life expectancy rates, etc.), as well as lottery tables, and various board games ([Sprego tables], 2017). In the present paper the “Countries of the World” and the “Word Heritage Sites” tables are introduced. The Countries table is retrievable from the Hungarian school leaving exams ([Countries], 2004; [Sprego tables], 2017; Figure 3), primarily prepared as a source for database management but serving our purposes just as well. Originally, it contains the name, the continent, the area, and the population (divided by thousand) of each country. In the modified version an index field was added to the table to clearly demonstrate the difference between the spreadsheet row numbers and the indexes of items of vectors. In our practice we refer to this semi-unplugged version as “countries_printed” – printed on screen, not on paper – (Figure 3), since we use it for manual data retrieval, building and checking algorithms, and debugging.

	A	B	C	D	E	F
1	index	Country	Continent	Capital	Area	Population (1000)
2	1	Afghanistan	Asia	Kabul	647500	27756
3	2	Albania	Europe	Tirana	28748	3545
4	3	Algeria	Africa	Algiers	2381740	32278
5	4	American Samoa	Oceania	Pago Pago	199	69
6	5	Andorra	Europe	Andorra la Vella	468	68
7	6	Angola	Africa	Luanda	1246700	10593
8	7	Anguilla	Amerika	The Valley	102	12
234	233	Yugoslavia	Europe	Belgrade	102350	10657
235	234	Zambia	Africa	Lusaka	752614	9959
236	235	Zimbabwe	Africa	Harare	390580	11377

Figure 3: The “countries_printed” semi-unplugged version of the Countries table.

In close connection with the Countries table, one of the most interesting tables is the World Heritage List, which contains data of heritage sites (Figure 4) in seven fields of various data types. Beyond its valuable content, the process of converting the table involves various elements of ICT (Figure 12), and as such supports knowledge transfer, which is one of our main concerns in relation to students’ future competences (Davies et al., 2011).

Year ↓	Name of the property	Country	Type	Region	Property (ha)	ID
1978	Aachen Cathedral	DE	C	EUR	0	3
1978	City of Quito	EC	C	LAC	320	2
1978	Galápagos Islands	EC	N	LAC	14,066,514	1
1978	Historic Centre of Kraków	PL	C	EUR	150	29
1978	Island of Gorée	SN	C	AFR	0	26
1978	L'Anse aux Meadows National Historic Site	CA	C	EUR	8,056	4
1978	Mesa Verde National Park	US	C	EUR	21,043	27
1978	Nahanni National Park #	CA	N	EUR	476,560	24
1978	Rock-Hewn Churches, Lalibela	ET	C	AFR	0	18
1978	Simien National Park	ET	N	AFR	13,600	9
1978	Wieliczka and Bochnia Royal Salt Mines	PL	C	EUR	1,105	32

	B	C	D	E	F	G
1	Name of the property	Country	Type	Region	Property (ha)	ID
2	Aachen Cathedral	DE	C	EUR	0	3
3	City of Quito	EC	C	LAC	320	2
4	Galápagos Islands	EC	N	LAC	14066514	1
5	Historic Centre of Kraków	PL	C	EUR	150	29
6	Island of Gorée	SN	C	AFR	0	26
7	L'Anse aux Meadows National Historic Site	CA	C	EUR	8056	4
8	Mesa Verde National Park	US	C	EUR	21043	27
9	Nahanni National Park #	CA	N	EUR	476560	24
10	Rock-Hewn Churches, Lalibela	ET	C	AFR	0	18
11	Simien National Park	ET	N	AFR	13600	9
12	Wieliczka and Bochnia Royal Salt Mines	PL	C	EUR	1105	32
13	Yellowstone National Park	US	N	EUR	898349	28
14	Abu Mena	EG	C	ARB	183	90
1116	Western Tien-Shan *	UZ	N	APA	0	1490
1117	Zuojiang Huashan Rock Art Culture Site	CN	C	APA	6622	1508

Figure 4: The table of the World Heritage Site webpage (left) and its converted spreadsheet version (right).

Sports tables are also great favorites. For the present paper we selected an ATP table ([ATP], 2015; Figure 5 and Figure 6), which is generally accepted by both girls and boys. The content of the table offers a wide range of information retrieval tasks, deals with various data types, and the conversion process is extremely challenging and leads to webpage development and design. The details of the conversion are beyond the scope of the present paper; however, similar to the Heritage table, the question of the automated data type recognition in spreadsheets is mentioned in the corresponding section (Figure 13).



TOURNAMENT	DRAW	SURFACE	TOTAL FINANCIAL COMMITMENT	WINNER	RESULTS
 Brisbane Brisbane, Australia 2015.01.04	SGL 28 DBL 16	Outdoor Hard	\$494,310	SGL: Roger Federer DBL: Jamie Murray , John Peers	RESULTS
 Chennai Chennai, India 2015.01.05	SGL 28 DBL 16	Outdoor Hard	\$458,400	SGL: Stan Wawrinka DBL: Yen-Hsun Lu , Jonathan Marray	RESULTS

Figure 5: The table of the ATP Scores & Stats 2015 webpage.

	A	B	C	D	E	F	G	H	I	J	K
1	Title	Location	Date	Date	SGL	DBL	Surface1	Surface2	Commitment	Winner SGL	Winner DBL
2	Brisbane	Brisbane	Australia	2015.01.04	28	16	Outdoor	Hard	\$494,310	Roger Federer	Jamie Murray John Peers
3	Chennai	Chennai	India	2015.01.05	28	16	Outdoor	Hard	\$458,400	Stan Wawrinka	Yen-Hsun Lu Jonathan Marray
4	Doha	Doha	Qatar	2015.01.05	32	16	Outdoor	Hard	\$1,221,320	David Ferrer	Juan Monaco Rafael Nadal
5	Sydney	Sydney	Australia	2015.01.11	28	16	Outdoor	Hard	\$494,310	Viktor Troicki	Rohan Bopanna Daniel Nestor
6	Auckland	Auckland	New Zealand	2015.01.12	28	16	Outdoor	Hard	\$519,395	Jiri Vesely	Raven Klaasen Leander Paes
7	Australian Open	Melbourne	Australia	2015.01.19	128	64	Outdoor	Hard	A\$17,748,600	Novak Djokovic	Simone Bolelli Fabio Fognini
8	Montpellier	Montpellier	France	2015.02.02	28	16	Indoor	Hard	€494,310	Richard Gasquet	Marcus Daniell Artem Sitak
9	Quito	Quito	Ecuador	2015.02.02	28	16	Outdoor	Clay	\$494,310	Victor Estrella Burgos	Gero Kretschmer Alexander Satschko
12	Rotterdam	Rotterdam	Netherlands	2015.02.09	32	16	Indoor	Hard	€1,600,855	Stan Wawrinka	Jean-Julien Rojer Horia Tecau
15	Marseille	Marseille	France	2015.02.16	28	16	Indoor	Hard	€632,840	Gilles Simon	Marin Draganja Henri Kontinen
16	Rio de Janeiro	Rio de Janeiro	Brazil	2015.02.16	32	16	Outdoor	Clay	\$1,548,755	David Ferrer	Martin Klizan Philipp Oswald
64	Basel	Basel	Switzerland	2015.10.26	32	16	Indoor	Hard	€2,022,300	Roger Federer	Alexander Peya Bruno Soares
65	Valencia	Valencia	Spain	2015.10.26	28	16	Indoor	Hard	€604,155	Joao Sousa	Eric Butorac Scott Lipsky
66	ATP World Tour Masters	Paris	France	2015.11.02	48	24	Indoor	Hard	€3,830,295	Novak Djokovic	Ivan Dodig Marcelo Melo
67	ATP Finals	London	Great Britain	2015.11.15	8	8	Indoor	Hard	\$7,000,000	Novak Djokovic	Jean-Julien Rojer Horia Tecau

Figure 6: The converted version of the ATP Scores & Stats 2015 table.

As mentioned above, local food outlets are popular among our students. The selected webpage is one of the leading pastry shops in our hometown so everyone in our close environment knows it ([Cakes], 2017). The webpage turned out to be one of our best resources since it is convertible either with spreadsheets or word processors and fundamental algorithms can be taught alongside the conversion processes (the conversion process is detailed in the “SEMI-AUTOMATED W→S CONVERSION” section of the present paper).

A		B
1	Torta	Ár
2	Áfonya Hercegnő cukormentes tortája - KT057	3 950 Ft
3	Őrség zöld aranya torta ország tortája 2016 - KT058	3 950 Ft
4	Az ország tortája 2015 - KT050	3 950 Ft
5	Oreo keksz torta - KT052	3 950 Ft
6	Paleo Sacher torta - KT053	3 950 Ft
55	Francia vanília torta - KT055	4 200 Ft
56	Málnácska torta - KT056	3 800 Ft
57	Lekváros kardinális torta - KT044	3 500 Ft
58	Karamellás csoki mousse torta	3 800 Ft

Figure 7: The Cakes (Torták) webpage of a local pastry shop (left) and its converted version in a spreadsheet table (right).

TASKS AND GAMES

Our novel method for computer supported real world problem solving in spreadsheets is based on the effective and efficient methodologies used in other subjects, especially mathematics and programming, further developed to create an introductory end-user programming environment and approach, and was introduced as Sprego programming – Spreadsheet Lego – in 2014 (Csernoch, 2014). Consequently, in Sprego problem solving starts with data analysis. Since young students are much more competent with strings than numbers we have found that introductory tasks should be based on strings rather than on numerical problems, which is the “classical” approach to spreadsheets (ICAEW [SCF], 2016; Kalchman & Koedinger, 2005; Blanton & Kaput, 2011; Section TEACHING MATERIALS).

All the selected tables contain text fields but among them the IMDB serves as the best introductory table. In the IMDB table it is obvious that in the converted version of column C contains two data of different types, so they have to be separated and displayed in two columns. (The details of the solution are beyond the scope of the present paper; however, it is available in one of our previously published papers (Csernoch & Biró, 2016).) Similar tasks can be formulated either in the IMDB or in the other data tables. In the Cakes table (Figure 7) the Torta field has two types of data – the name and the product code –, although in some cases the code is missing. In the ATP table (Figure 6) the names of the doubles winners can be separated, while handling the currencies is a challenging problem, suitable for advanced users.

	A	B	C	D	E	F	G
1	Rank	Rating	Title	Votes			
2	1	9,2	The Shawshank Redemption (1994)	790425	1994	The Shawshank Redemption	2000
3	2	9,2	The Godfather (1972)	585045	1972	The Godfather	1994
4	3	9	The Godfather: Part II (1974)	371343	1974	The Godfather: Part II	
5	4	8,9	Pulp Fiction (1994)	621174	1994	Pulp Fiction	
6	5	8,9	The Good, the Bad and the Ugly (1966)	244920	1966	The Good, the Bad and the Ugly	
7	6	8,9	12 Angry Men (1957)	194680	1957	12 Angry Men	
8	7	8,9	Schindler's List (1993)	414133	1993	Schindler's List	
9	8	8,8	The Dark Knight (2008)	736027	2008	The Dark Knight	
249	248	8	The Untouchables (1987)	120523	1987	The Untouchables	
250	249	8	Papillon (1973)	42632	1973	Papillon	
251	250	8	Castle in the Sky (1986)	38305	1986	Castle in the Sky	
252							
253	The number of movies released between 1994 and 2000 is 36.				The Untouchables		
254	The Untouchables was released in 1987.						

Figure 8: The normalized IMDB table and two tasks based on the new data table. Task 1: The number of movies released between two years. The years are the input values of the task, provided by the user in cells G2 and G3 and the output is a sentence with the two years and the calculated number. Task 2: A title is selected from the combobox and the formula calculates the year and displays it in a whole sentence.

Once these data are separated – the titles and the years in the IMDB table –, in addition to string problems, all the

converted tables can be used for counting and searching problems (Csernoch & Biró, 2016). Two of these tasks are introduced in Figure 8 in rows 253 and 254. These two problems are rather for intermediate users; consequently, for novices simpler, and for advanced users, more complex tasks can be formulated.

The Calories table – retrieved from the Les calories webpage – holds two columns of data. In the first column the categories and the foods are listed, while in the second we have an empty string and calories, respectively (Figure 2, categories are highlighted in green). With these data we can create a spreadsheet calories calculator (Figure 9). The calculator uses categories as major items. Each category contains a combobox and a slide bar. A combobox lists all the foods in the respective category derived from the data table. The slide bar is an additional object to each category, where we can select the amount of food. Based on these data the calculator displays the calories for each selected food, adds them, and displays the sumproduct in cell I774. One further feature of the calculator is the ability to set a limit. If the sumproduct, based on the calories of the selected items and the amount, exceeds the limit, the cell changes its color.

	E	F	H	I	J	M	N
773							
774				1809		Limit:	1500
775		Apéritifs (pour 100 g)	185	0	Mousse de poisson	0	
776		Boissons	71	284	Orangina verre = 15 cl	4	
777		Desserts et sucreries (pour 100 g)	526	526	Bonbons M&M'S	1	
778		Coquillages et crustacés (pour 100 g)	103	0	Crabe (conserves)	0	
779		Poissons (pour 100 g)	77	0	Daurade	0	
780		Viandes (pour 100 g)	193	386	Agneau (langue)	2	
781		Volailles (pour 100 g)	350	0	Oie	0	
782		Légumes (pour 100 g)	38	228	Carotte	6	
783		Fruits	77	385	Cerises	5	
784		Produits laitiers (pour 100 g)	353	0	Gouda	0	
785		Matières grasses (pour 100 g)	900	0	Olives (huile)	0	
786		Féculents & Boulangerie (pour 100 g)	230	0	Pain complet	0	

Figure 9: A spreadsheet calories calculator, based on the table of the Les-calories webpage.

The “country-capital quiz” can be used in geography classes but its creation requires several fundamental programming algorithms which are better handled in ICT and/or CS classes. Based on the original “searching in vector problem” several different tasks can be formulated and introduced in classes. In the present paper one of the most advanced versions is presented, where various spreadsheet tools are applied: a combobox for selecting the country, an IF() function for varying the output text in cell H4, a formula to calculate the capital of the selected country (various versions of the MATCH(), INDEX(), and INDEX(MATCH()) functions), a concatenation operator or function for creating the sentence of strings and calculated values, and conditional formatting to color the content of cell H4 according to the user’s answer in H6.

	H		H	I		H
1			1			1
2	Germany		2	Germany		2
3			3			3
4			4	The capital city of Germany is Berlin.		4
5			5			5
6			6	Berlin		6

	H
1	
2	Germany
3	
4	Ajjaj!
5	
6	Budapest

Figure 10: A “country-capital quiz” based on the Countries table. The country selected from the combobox (left), text (capital city) is typed in H6. If the answer is correct a whole sentence is displayed in green; if not, an error message in red is displayed in cell H4; if H6 is empty, H4 is also left empty.

SEMI-AUTOMATED W→S CONVERSION

The conversion process of the webpages might seem a one-step process since spreadsheets open webpages. However, we have experienced in several cases that these tables are manipulated: neither the table nor the paragraph structure is clear. Beyond these hidden errors, it is obvious that the differences in the syntax and in the language setup of spreadsheets and operating systems, along with the automated data recognition, might result in serious data losses (e.g. see Figure 12 and Figure 13).

A version independent conversion process officially requires nothing more than the opening of the webpage in a spreadsheet and then that it is saved in spreadsheet format. However, this method only works in theory, since the additional objects, formats, and the automated data type recognition of spreadsheets might result in a chaotic table and/or data losses, respectively (Figure 12 and Figure 13). To get rid of the additional objects and formats a text file would serve best. However, in several cases we have to apply more software which can create the text file but does not change the content (Figure 11). Word processing programs were found to be the most convenient for our purposes. Considering all these points, the major steps of the conversion process are mapped in Figure 11. We are aware of the “user friendly” but limited or less-limited conversion options of the different spreadsheets versions, but our goal is to present a less software-dependent, general purpose algorithm of the process.

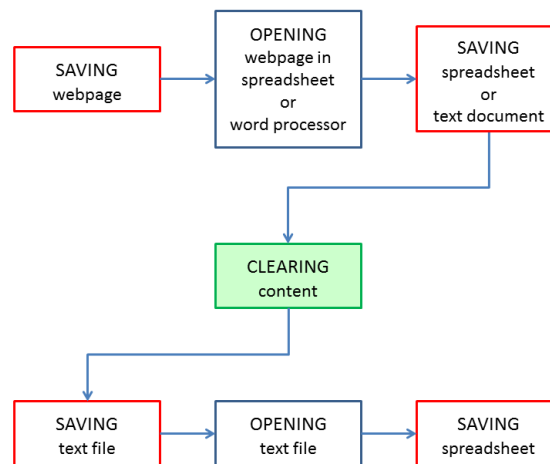


Figure 11: The major steps of the webpage→spreadsheet (W→S) conversion process.

As is shown in Figure 11, the algorithm of the conversion process is primarily concerned with handling different file types with the Open and the Save As commands. However, the “Clearing content” step is unique to each document and in most cases requires well developed algorithmic skills. The complexity of the document and the algorithm on which the webpage is built formulate the algorithm. In several cases the clearing phase is broken down into smaller units, and can be inserted between any of the [opening, saving] blocks and repeated various times.

This method of the conversion is semi-automated in the sense that the major commands are carried out manually, while each step is automated and as such can be applied to a clearly defined section of the data. In word processors the clearing is primarily carried out with the Replace command (Figure 12) and/or with the table→tabulator→table conversions (Figure 15 and Figure 16), while in spreadsheets formulas have to be created to handle the data conversion (for further details see the “*Conversion with spreadsheet formulas*” section of the present paper; Csernoch, 2014).

Handling thousand separator and decimal characters

F	G	F	G	H	F	G
Property (ha)	ID	Property (ha)	ID		Property (ha)	ID
0	3	0	3	0	0	3
320	2	320	2	320000	320	2
14,066,514	1	14,066,514	1	#ÉRTÉK!	14066514	1
150	29	150	29	150000	150	29
0	26	0	26	0	0	26
8,056	4	8,056	4	8056	8056	4
21,043	27	21,043	27	21043	21043	27
476,560	24	476,56	24	476560	476560	24
0	18	0	18	0	0	18
13,600	9	13,6	9	13600	13600	9
1,105	32	1,105	32	1105	1105	32
898,349	28	898,349	28	898349	898349	28
183	90	183	90	183000	183	90
0	1490	0	1490	0	0	1490
6,622	1508	6,622	1508	6622	6622	1508

Figure 12: The World Heritage page is opened in English (left), opened/imported in European (middle) spreadsheets without intervention, and opened and cleared in a word processor – the commas were removed with a Replace command (right).

In Figure 12 in an English spreadsheet all the small numbers – less than 1000 – are recognized as numbers, while the others with commas are converted to strings but no data are lost. In the European version the numbers with one comma are divided by 1000 while the others are converted to strings, and the small numbers are converted properly to numbers. The English version can be handled in spreadsheets since the commas can be removed either by the Replace command or the SUBSTITUTE() function and then the data can be converted into numbers (Csernoch, 2014; Csernoch & Biró, 2016). Due to the loss of data, the European version cannot be handled in spreadsheets without first creating the text file in a word processor. By opening the table in a word processor in the Property column the commas can be replaced with the empty string. Following the replacement the table has to be converted into a text file, which can be opened in spreadsheets. While creating the text file we have to take into account the fact that the table contains several non-ASCII characters; consequently, the encoding has to be changed to Unicode.

	A	B	C	D	E	F	G	H	I	J	K
1	Title	Location	Date	Date	SGL	DBL	Surface1	Surface2	Commitment	Winner SGL	Winner DBL
2	Brisbane	Brisbane	Australia	2015.01.04	28	16	Outdoor	Hard	\$494,310	Roger Federer	Jamie Murray John Peers
3	Chennai	Chennai	India	2015.01.05	28	16	Outdoor	Hard	\$458,400	Stan Wawrinka	Yen-Hsun Lu Jonathan Marray
4	Doha	Doha	Qatar	2015.01.05	32	16	Outdoor	Hard	\$1,221,320	David Ferrer	Juan Monaco Rafael Nadal
5	Sydney	Sydney	Australia	2015.01.11	28	16	Outdoor	Hard	\$494,310	Viktor Troicki	Rohan Bopanna Daniel Nestor
6	Auckland	Auckland	New Zealand	2015.01.12	28	16	Outdoor	Hard	\$519,395	Jiri Vesely	Raven Klaasen Leander Paes
7	Australian Open	Melbourne	Australia	2015.01.19	128	64	Outdoor	Hard	A\$17,748,600	Novak Djokovic	Simone Bolelli Fabio Fognini
8	Montpellier	Montpellier	France	2015.02.02	28	16	Indoor	Hard	€ 494,31	Richard Gasquet	Marcus Daniell Artem Sitak
9	Quito	Quito	Ecuador	2015.02.02	28	16	Outdoor	Clay	\$494,310	Victor Estrella Burgos	Gero Kretschmer Alexander Satschko
12	Rotterdam	Rotterdam	Netherlands	2015.02.09	32	16	Indoor	Hard	€1,600,855	Stan Wawrinka	Jean-Julien Rojer Horia Tecau
15	Marseille	Marseille	France	2015.02.16	28	16	Indoor	Hard	€ 632,84	Gilles Simon	Marin Draganja Henri Kontinen
16	Rio de Janeiro	Rio de Janeiro	Brazil	2015.02.16	32	16	Outdoor	Clay	\$1,548,755	David Ferrer	Martin Klizan Philipp Oswald
64	Basel	Basel	Switzerland	2015.10.26	32	16	Indoor	Hard	€2,022,300	Roger Federer	Alexander Peya Bruno Soares
65	Valencia	Valencia	Spain	2015.10.26	28	16	Indoor	Hard	€ 604,16	Joao Sousa	Eric Butorac Scott Lipsky
66	ATP World Tour Masters	Paris	France	2015.11.02	48	24	Indoor	Hard	€3,830,295	Novak Djokovic	Ivan Dodig Marcelo Melo
67	ATP Finals	London	Great Britain	2015.11.15	8	8	Indoor	Hard	\$7,000,000	Novak Djokovic	Jean-Julien Rojer Horia Tecau

Figure 13: The ATP text file opened in a spreadsheet allows automated data type recognition. In column I the conversion of the currency leads to a loss of data. In cells I8, I15, and I65 the original values are replaced by their 1000th; beyond this, in I65 the value is rounded.

To stop the automated data type conversion we have to open the text file in a spreadsheet, and in the “Text Import Wizard” we can change the General data type to Text (Step 3). With this option all the data in the selected column is converted to text (Figure 6).

Conversion with spreadsheet formulas

The conversion of the Cakes webpage ([Cakes], 2017; Figure 14) can be carried out both in spreadsheets and word processors. Both of them have their own algorithms, and the choice made is based on the pedagogical aims of the task.

A		B		C	D
1	Áfonya Hercegnő cukorkamentes tortája - KT057	1	Cake	Price1	Price2
2	3.950 Ft	2	Áfonya Hercegnő cukorkamentes tortája - KT057	3.950 Ft	3 950 Ft
3	A termék adatai »	3	Őrség zöld aranya torta ország tortája 2016 - KT058	3.950 Ft	3 950 Ft
4	RENDELHETŐ	4	Az ország tortája 2015 - KT050	3.950 Ft	3 950 Ft
5		5	Oreo keksz torta - KT052	3.950 Ft	3 950 Ft
6	Őrség zöld aranya torta ország tortája 2016 - KT058	6	Paleo Sacher torta - KT053	3.950 Ft	3 950 Ft
7	3.950 Ft	7	Paleo Bounty torta - KT054	3.950 Ft	3 950 Ft
8	A termék adatai »	8	Nosztalgia krémes torta - KT055	3.800 Ft	3 800 Ft
9	RENDELHETŐ	9	Kinder mousse torta csoki kellékekkel - KT056	5.000 Ft	5 000 Ft
10		10	Vaníliás eper mousse torta	3.800 Ft	3 800 Ft
11	Az ország tortája 2015 - KT050	11	Narancsos karamell mousse torta	3.800 Ft	3 800 Ft
12	3.950 Ft	12	Szeretlek torta, epres brownie - KT004	3.800 Ft	3 800 Ft
13	A termék adatai »	13	Írkáv mousse torta - KT005	3.800 Ft	3 800 Ft
14	RENDELHETŐ	57	Lekváros kardinális torta - KT044	3.500 Ft	3 500 Ft
15		58	Karamellás csoki mousse torta	3.800 Ft	3 800 Ft

Figure 14: The Cakes webpage opened and cleared in a word processor (left) and converted into a normalized table with spreadsheet functions (right). The version shown has three columns: column B: cake and code (optional) – data type: string –, column C: price – data type: string –, column D: price – data type: number –, and the non-significant data are removed – strings: “A termék adatai »”, “RENDELHETŐ”, and the empty string.

All the conversions start with data analysis, as follows (Figure 14).

The features of the spreadsheet table:

- each cake occupies 5 rows
- the 1st row of the block holds the name of the cake (for advanced users: occasionally, the code of the cake), data type: string
- the 2nd row of the block holds the price of the cake, data type: originally string but should be converted to number (currency)
- the other rows can be ignored
- the original position of the cakes and prices can be calculated from the row number of the new position
- all the prices contain a dot, a “SpaceFt” string, and a Space character at the end of the string
- at the end of the names there is a Space character

The algorithm of the spreadsheet conversion:

- calculating the row number of the new position: n
- calculating the original position of the cakes/prices: $(n-2) \times 5 + 1$ or $(n-2) \times 5 + 2$
- displaying the cakes/prices
- converting the prices to numbers
 - calculating the length of the string
 - calculating the length of the number
 - displaying the numbers from the left of the string
 - substituting the dot with the empty string
 - converting the string to number
- formatting the currency

The coding of the spreadsheet conversion with Sprego:

- {=ROW() }
- {=(ROW()-2)*5+1 }
- {=INDEX(A2:A284,(ROW()-2)*5+1)}

The coding of the string → number conversion with Sprego:

- {=LEN(C2:C58)}
- {=LEN(C2:C58)-4}
- {=LEFT(C2:C58,LEN(C2:C58)-4)}
- {=SUBSTITUTE(LEFT(C2:C58,LEN(C2:C58)-4),".","")}
- {=SUBSTITUTE(LEFT(C2:C58,LEN(C2:C58)-4),".","")*1}

Conversion with a word processor

Áfonya · Hercegnő · cukormentes · tortája · -- · KT057 · ¶ 3.950°Ft · ¶ A · termék · adatai · » · ¶ °RENDELHETŐ° · ¶ ¶ Őrség · zöld · aranya · torta · ország · tortája · 2016 · -- · KT058 · ¶ 3.950°Ft · ¶ A · termék · adatai · » · ¶ °RENDELHETŐ° · ¶ ¶ Az · ország · tortája · 2015 · -- · KT050 · ¶ 3.950°Ft · ¶ A · termék · adatai · » · ¶ °RENDELHETŐ° · ¶ ¶	Áfonya · Hercegnő · cukormentes · tortája · -- · KT057 · ¶	3.950°Ft · ¶	Áfonya · Hercegnő · cukormentes · tortája · -- · KT057 · ¶	3950¶
Őrség · zöld · aranya · torta · ország · tortája · 2016 · -- · KT058 · ¶ 3.950°Ft · ¶ A · termék · adatai · » · ¶ °RENDELHETŐ° · ¶ ¶	Őrség · zöld · aranya · torta · ország · tortája · 2016 · -- · KT058 · ¶	3.950°Ft · ¶	Őrség · zöld · aranya · torta · ország · tortája · 2016 · -- · KT058 · ¶	3950¶
Az · ország · tortája · 2015 · -- · KT050 · ¶	Az · ország · tortája · 2015 · -- · KT050 · ¶	3.950°Ft · ¶	Az · ország · tortája · 2015 · -- · KT050 · ¶	3950¶
Oreo · keksz · torta · -- · KT052 · ¶	Oreo · keksz · torta · -- · KT052 · ¶	3.950°Ft · ¶	Oreo · keksz · torta · -- · KT052 · ¶	3950¶
Paleo · Sacher · torta · -- · KT053 · ¶	Paleo · Sacher · torta · -- · KT053 · ¶	3.950°Ft · ¶	Paleo · Sacher · torta · -- · KT053 · ¶	3950¶
Paleo · Bounty · torta · -- · KT054 · ¶	Paleo · Bounty · torta · -- · KT054 · ¶	3.950°Ft · ¶	Paleo · Bounty · torta · -- · KT054 · ¶	3950¶

Figure 15: The Cakes table opened in a word processor (left), the 5-line blocks converted into a 5-column table, in which 3 columns are deleted (middle), and the characters removed from the numbers (right)

The algorithm of the word processor conversion:

- the text (Figure 15, left) is converted into a 5-column table
- 3 columns with the unnecessary data are deleted (Figure 15, middle)
- dots are removed from the numbers
- the “nonbrakingSpaceFtSpace” string is removed (Figure 15, right)

The coding of the string → number conversion in word processor:

- From Text to Table, the number of columns set to 5, Separator character: ¶
- 3 columns are deleted (Figure 15, middle)
- the column of numbers is selected and dots are replaced with nothing
- the column of numbers is selected and the “non-braking-SpaceFtSpace” strings are replaced with nothing (Figure 15, right)
- From Table to Text, the separator character is Tab
- the “SpaceTab” string in converted to Tab (Figure 16, left)
- Save as text file, code: Unicode (UTF-8)

Áfonya · Hercegnő · cukormentes · tortája · -- · KT057 → 3950¶ Őrség · zöld · aranya · torta · ország · tortája · 2016 · -- · KT058 → 3950¶ Az · ország · tortája · 2015 · -- · KT050 → 3950¶ Oreo · keksz · torta · -- · KT052 → 3950¶ Paleo · Sacher · torta · -- · KT053 → 3950¶ Paleo · Bounty · torta · -- · KT054 → 3950¶ Nosztalgia · krémes · torta · -- · KT055 → 3800¶ Kinder · mousse · torta · csoki · kellékekkel · -- · KT056 → 5000¶ Vaníliás · eper · mousse · torta → 3800¶ Narancsos · karamell · mousse · torta → 3800¶	<table><tr><th></th><th>A</th><th>B</th></tr><tr><td>1</td><td>Cake</td><td>Price</td></tr><tr><td>2</td><td>Áfonya Hercegnő cukormentes tortája - KT057</td><td>3950</td></tr><tr><td>3</td><td>Őrség zöld aranya torta ország tortája 2016 - KT058</td><td>3950</td></tr><tr><td>4</td><td>Az ország tortája 2015 - KT050</td><td>3950</td></tr><tr><td>5</td><td>Oreo keksz torta - KT052</td><td>3950</td></tr><tr><td>6</td><td>Paleo Sacher torta - KT053</td><td>3950</td></tr><tr><td>7</td><td>Paleo Bounty torta - KT054</td><td>3950</td></tr><tr><td>57</td><td>Lekváros kardinális torta - KT044</td><td>3500</td></tr><tr><td>58</td><td>Karamellás csoki mousse torta</td><td>3800</td></tr></table>		A	B	1	Cake	Price	2	Áfonya Hercegnő cukormentes tortája - KT057	3950	3	Őrség zöld aranya torta ország tortája 2016 - KT058	3950	4	Az ország tortája 2015 - KT050	3950	5	Oreo keksz torta - KT052	3950	6	Paleo Sacher torta - KT053	3950	7	Paleo Bounty torta - KT054	3950	57	Lekváros kardinális torta - KT044	3500	58	Karamellás csoki mousse torta	3800
	A	B																													
1	Cake	Price																													
2	Áfonya Hercegnő cukormentes tortája - KT057	3950																													
3	Őrség zöld aranya torta ország tortája 2016 - KT058	3950																													
4	Az ország tortája 2015 - KT050	3950																													
5	Oreo keksz torta - KT052	3950																													
6	Paleo Sacher torta - KT053	3950																													
7	Paleo Bounty torta - KT054	3950																													
57	Lekváros kardinális torta - KT044	3500																													
58	Karamellás csoki mousse torta	3800																													

Figure 16: The two data of the Cakes table separated with a Tab character (left); the converted table opened in a spreadsheet (right)

CONCLUSIONS

Our present paper offers and refers to various semi-unplugged tools introduced in our classroom practice to support Sprego programming. Sprego – Spreadsheet Lego – is a programming approach in spreadsheet environments, using those tools available in user-friendly interfaces which support programming, algorithm building, the development of computational thinking, computer supported problem solving, and knowledge transfer, all of which are the competences of the future.

One of the primary features of Sprego is that it focuses on real world problem solving and as such requires various authentic contents organized into tables. The main source of the tables is the Internet or the private collections of students and/or teachers. In the present paper we have provided examples of tables retrieved from webpages which were found to be interesting and motivating for students. The most popular tables contain data relating to extremes, local food outlets, board games, and sports, but any special data table would be appropriate for Sprego if it contains real world data and students are interested in it.

In addition to presenting the tables, we dealt with their conversion, the advantages and disadvantages of the

automated data type recognition of spreadsheets, and how we can handle these problems. A conversion of a webpage-table is detailed, where both the spreadsheet and the word processor solutions presented. However, we must emphasize that the form in which a table is presented in the class plays a fundamental role in teaching end-user programming and algorithms. It is always part of a teacher's competence to select the version of the table which best suits the students' interests and the pedagogical aims of the classes.

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Shooting Short Film as an Application of Values Education

Mustafa SOZEN

Akdeniz University

Fine Arts Faculty, Cinema-TV. Depertmant

sozen@akdeniz.edu.tr

ABSTRACT

For societies to continue their existence, that they transfer values they've got to the next generations is kind of an obligation. Thus, the values education subject is one of the problematics carrying importance socially. Values include basic rules arranging social structure and human relations. Society determines this with rules, dynamics of which individuals forming it identify consciously or unconsciously by coming together within a long time period. One of processes making children a part of social life is that they get ethical / aesthetic values. In getting these values artistic studies are quite effective. When dealt with in its ethical context, values that steer life of individuals, that act as rules, that have different levels of importance are in question. In aesthetic context, acquiring the qualification of perceiving life more deeply is aimed. The rise to the upper levels in life discipline desired to be acquired to individuals can be provided more qualitatively through aesthetical viewpoints. The ability of realizing details in natural and artificial environment, also defined as aesthetic awareness, is gained to children by directing them to study on details. Individual freedom is available in aesthetic education. With belief, concepts of creative and design, the personal experiences and narrative values develop. In this study, the "Young Planes Short Film Contest" run between the primary, secondary and high school students in the frame of "Values Education" by Antalya National Education Directorate and the relevant results and evaluations take place.

Key Words: Student, Values Education, Artistic Studies, Aesthetic Gains, Expectations

INTRODUCTION

Since at the present the fast changing science and technology have become one of the significant parts of daily life, values and life style through which contemporary human lives have started to undergo quick change. It becomes apparent that education should keep pace with this quick change for qualified individuals to be grown up.

Today, the major point put forward in information based economy society is that individuals become qualified in terms of knowledge. This situation being an objective requirement, in education period, mostly creates an undesired result leading to excessive focusing on academic success and exams and to neglecting value transfers. National Education Ministry has also started to put into practice a model education application providing awareness and internalization of values, within formal education process, as a way to overcome this problem. He defined this under the title "Values Education".

Values Education is an open attempt model for education about developing and realizing the determined values. In this sense, it is possible to define "Values Education" as the sum of processes towards forming the individual's self-respect, helping him respect usual values such as honesty, righteousness and justice.

The expression 'value', when taken in most general sense, is accepted as the individual's the best and the most suitable judgment process. When looked at in this sense, it can be said that the facts called "values" are the sum of thoughts affecting life of the person and given importance in his life (Doğanay, 2006: 258).

When dealt with from the morality perspective, the "values" concept can be classified as social values, individual values and family values. And the process in which values produced by a social structure are acquired to individuals of that society is expressed as "values education".

The whole of the values education concept is part of a wider development in the way developing human as “whole human” including his cultural, political and moral sides. In this context, it is possible to define the values education as the criterion of true, good and appropriate changes which can be seen in the individual’s thought, attitude and behaviors. Individuals adopt values of the society, in which they have lived, from past to present and apply decisions they take in consequence of interpreting these values logically while making their choices.

Even if it is difficult to make a full description of the value concept in universal size, -in general- it can be defined as common position and viewpoints such as justice, equity, love, industriousness, hospitality and honesty.

The definition of value: common thought, aim, basic moral principles or beliefs accepted by the majority of its members as true and essential in order to provide and maintain a social group or society’s own entity, unity, running and continuity. Properties of values can be shown by itemizing as below (MEB, 2005b: 87):

- 1.Values are the unifying facts adopted by the society or individuals,
- 2.Criteria considered to have met social needs of the society and to be available for goodness of individuals,
- 3.Judgments not only concerned with conscious but also feeling and excitement,
- 4.Values are instincts taking place inside the individual and directing the behaviour,
- 5.The difference of values from norms is that it has more general and abstract attribution,

Value involves norm as well. Values differ from social norms in three ways: While value refers to a behavior or the ultimate state of existence, social norm only refers to one behavior. While a value oversteps the bounds of particular situations, social norm is an order to behave in a certain way in a certain situation.

It should be stated that no universal answer is available for the question “Which values”. True qualities may vary according to society. When looked at general aims of the Turkish National Education system, many values which must be gained to students draw the attention. It is possible to identify these values, each of which has the same importance, in alphabetical order: 1) Justice, 2) Peace, 3) Solidarity, 4) Righteousness, 5) Honesty, 6) Tolerance, 7) Protecting and Developing Cultural Values, 8) Self-Confidence, 9)Self-Respect, 10) Patience, 11) Respect, 12) Love, 13) Responsibility, 14) Collectivism, 15) Patriotism, 16) Helpfulness, 17) Innovative.

To put artistic studies being one of the most important institutions socializing individuals and preparing them for life into practice by loading an important duty within formal education comes to the forefront as a true strategy of education in this field.

In the schools, in the scope of artistic studies, to teach values clearly stated or not stated consequently contributes to their ethical/aesthetic developments and positively affects their character and self senses. In short, artistic studies are one of important and effective institutions in gaining value to the student.

RELATIONSHIP BETWEEN ARTISTIC STUDIES AND VALUES EDUCATION

Numerous academic studies made in education field show that artistic studies made in the scope of values education in the last years could assume important roles in education. Because artistic studies help ethical values be adopted permanently as an important education input as well as creating aesthetic liking development in students.

“Art” studies is essentially a manner of telling, but telling is a pattern and process of expressing. So, for individual freedom and objectivity to come out, it is recommended a particular importance be given especially to artistic studies. Artistic studies, in essence, also carry the characteristic of being facts having educational qualities. Things the students have revealed in artistic studies –mostly- include indirect correlations with their feeling and thought lives. Students take, get and gain something from it according to the pattern, direction, scope and level of the art they engage in. Due to only these reasons, it is seen that the importance of artistic studies is

great. In other words, life styles, view of life and events of students making artistic studies change and their self-confidence even better strengthens and their power of design develops no matter which area of life be.

Artistic applications are both mind and feeling driven narrative patterns. Artistic applications greatly contribute to the individual by rendering his learning process efficient, facilitating his learning through “doing and living”, helping him find his personality, be a creative and productive individual, establish positive social interaction with others, in short, develop with all his sides.

Cinema, which has a very different place among art branches in human life, is a narrative channel –since it is an education tool- that can create significant effects on individuals physically, mentally and psychologically in addition to its various functions. It is an accepted reality that the students making studies towards shooting film will be individuals who gain aesthetic emotions, have more creative thinking abilities, become more productive and self confident, try to change their environment positively. So applications made in this direction in the frame of values education gain importance.

If values education is transformed into a structure only giving importance to the formation and development of ethical/moral values thought, the intellectual basis where the concept locates gets big harm and the actual aim of education goes away. The values education which has been made in this way transforms into a context of static lesson and may consequently carry the risk of forming a shape in which the given homework and practices are performed and taking a good grade is aimed, instead of gaining values in time. One of ways of performing values in education is to be able to use true stories in that different values can be utilized. Values having abstract attributions can make one reach true outcomes when stories that have been transformed into the filmic language become concrete in the mind of children and are reflected. These kinds of studies towards setting values can provide an advance in children’s ability of interpreting and questioning about things being right and wrong.

The expected benefit from students performing applications towards shooting film is, in essence, the adoption and internalisation of the desired moral/ethical values and acquirements brought through making group study as well. Because while working in groups the individuals can canalize their energy more easily and tend to stay more close to the understanding of discipline and cooperation. Namely, it is a detected reality that activities made with a group help the individual learn social and moral skills, acting in harmony and develop skills of working. Moreover, in such a study medium, the individuals who have grown up in different societies and had different values recognize each other; and in this recognition period, they get the opportunity of indirectly transferring the values they’ve got to each other and of evaluating the value the other has got by recognizing it.

While the values that have transformed into a filmic story present the feeling or thought, which is desired to be reflected, to the other students, each student watching this follows the film through his own cultural codes, and interprets and makes sense of events and characters in the film via his own semantic world. As a result of this encounter of the audience with the film, tastes and colors cognitively and emotionally affecting the mental world of the audience come out and new images occur in them.

YOUNG PLANES SHORT FILM CONTEST AND VALUES EDUCATION

The Antalya City National Education Directorate has performed a series of artistic activities in the frame of Values Education program since 2011. As part of this activity, it has started an application under the title “Young Planes Short Film Contest” since 2013. It should be declared that this application is made only in Antalya city in Turkey.

This contest, which was arranged only for high school students in the first two years, has been arranged including the primary and secondary school students this year. The activity, the third of which was made and in which every category of education competed in itself, drew an unexpected level of attention from schools and a great number of films attended the contest.

“Young Planes Short Film Contest” carries significant tendencies in two aspects. First, a title like Education of Values coming to the forefront in education at the last years composes a presentation by involving artistic forms as well; second, this is stated with cinema being the most striking manifestation tools of our young century.

In our day when a dizzying advance lived in technology reveals new ways of narration in cultural/artistic ground, “visual” expression that generally corresponded to the painting art before increasingly becomes rich and finds a life area for itself in different media. For example, the short film fact, which fast becomes widespread by the support of computer programs being easily accessible and applicable, – being too easy to be made by everyone – quickly becomes widespread in the young through its structure open to trial-and-error and its application area convenient to harmonizing the technique and thought.

In the light of all these developments, Antalya National Education Directorate started an activity attempt under the title Young Planes Short Film Contest, with a greatly appropriate decision, three years ago and put it into practice strongly. It should be emphasized that this activity has assumed an important function like adding a new one to the titles meant in the introduction part. This was the argument “Cinema most fits Antalya!”. In other words, in a city where the Golden Orange, which is the most powerful artistic platform of Turkish Cinema for the total 51 years, is arranged, to be able to perform the Young Planes Short Film Contest is a quite conspicuous situation. Therefore it should also be stated that the young movie makers of tomorrow can come out and the related benefits can be got as other positive sides of contest (1).

As a concrete example of this positive position, that in ‘Values Olympiad’ arranged by National Education Ministry, the Kepez Religious Secondary School students in Antalya have become Turkey’s number one in short film branch can be given. In the contest arranged with the theme ‘righteousness, keeping word, trust, compassion and sharing’, the sixth grade students, all 13 years old, Melih Duman, Salim Güraksu and Halil İbrahim Sevinç have got Antalya’s championship firstly and then Turkey’s championship with the short film they shot up on the ‘compassion’ theme. The directing, scriptwriting, shooting and acting of the film, which was prepared under the guidance of Turkish teacher of the school, were carried out by students. In that about 10 minutes short film who shooting and montage lasted for a week, the student stackled with a compassion feeling of a person who aim stotake things, which are desired yearningly by a leukemiapatient child, to the child staying at hospital and longing for outside a lot.

Statements of Halil İbrahim Sevinç, who carried out the shooting of the film, about the film and subject reflect a concrete explanation of this application. Mr. Sevinç tell about the process: "Weexpected together to be Antalya’s champion, but never to be champion among 81 cities of Turkey. Were joiced and got excited at hearingt his... Ilearnt shooting (cameramanship) by the help of my teacher. I had never used before. Shooting was hard. The message we wanted to give was showing mercy and taking mercy from our friends and family against difficulties”.

GENERAL POINTS

The biggest change standing out in 2015 Young Planes Contest this year was that the primary and secondary schools were included to the contest. This was a risky decision because aside from “easy accessibility” stated above, the fact that the short film is also an artistic discipline shouldn’t have been ignored. However, when checked on the selection especially coming from secondary schools, it was seen that a quite surprising outcome occurred. Because incoming films were carrying cinematographic qualities beyond expected apart from less number of bad examples.

It is a known reality that in films having time period not exceeding ten minutes, producing film in a wide semantic field like concepts in the context of Values Education is not that easy. These students have brought along quite successful solutions, within the frame of their own limited knowledge, to the fields such as scenario, shooting techniques, montage, music and cast management about each of them books of lots of pages could be written.

The essential aspect of the issue is that via these studies, to what extent moral values take place in social group in which the students live and what the relevant conditions are and that they struggle to give visual shape in the way that has turned to an expression by drawing attention to topics they wish or things they want to be visible. In this context, it can be said that with artistic interpretations brought to concepts such as “Love”, “Respect”, “Honesty” and “Solidarity”, the Young Planes Contest has moved its objective much more upward. It is possible to easily state in the end of the third year that numerous qualified students, who are equipped with artistic sensitivity and bear cinema emotion inside them, are available among both primary and secondary and high school students. Speaking for myself, I was impressed by that “violence” phenomenon being one of major issues of today was referred to in short films in the activity where I took place in the jury. As it is understood, students from every generation draw attention to this concept they faced in both within the family and in the society, warn the seniors and refer to a totally different world. Among concepts which have been handled and practiced following violence fact are facts like sharing, companionship, self-confidence and respect to diversity. It is seen that much higher quality short films produced by the students who have formed their own language will produce will come out if necessary substructure is supplied in schools.

EVALUATION OF CONTEST

It should be stated that to which film and for what the championship award has been given from the perspective of both contest and values education: The short film called “Echo” that was directed by Arda Ayna from Konyaaltı Gazi Mustafa Kemal Primary School was deemed worthy to the championship award because he successfully applied technical properties of a short film while he tackled with, via a critical approach, the vanishing of the concepts such as love and respect finding their expression in Values Education and with that violence produces violence.

Just as in the primary schools category, the work called “Bail” directed by BurakŞahin from Kaş Gömbe Secondary School won an award also with the effect of excellence of the protagonist Mustafa Yasin Oran because it inquired, with a great technical mastery and a critical approach, the violence theme it handled; in addition, the wonderful performance of the actor was awarded in particular.

The short film called “Point of View” made by Gizem Deniz from ATSO Fine Arts High School became first because it revealed, with a unique style, the Self Confidence and Respect to Diversity themes and also he skillfully gave place to different narrative styles and techniques (animation).

As a general evaluation of this contest, the thing remaining in memories is that how images are formed in terms of which meaning is assigned to which value. It is very possible to be able to see as the biggest sign of that the cinematic frames largely accomplished the mission of such a contest by integrating with the moment when the eyes of the child, who bring love into the forefront for more livable world, twinkle.

RESULT

The aim of the Values Education Project tends to enhance the application of these values by individuals in their behaviors in daily lives. This education, which is given from the primary education to the high school, is of significant role in the internalization of moral values by new generations.

The positive effects of the artistic studies performed within the frame of this education are seen on behaviors of the students. The children growing up in information age both in technical and artistic and aesthetic context access to information easily within the diversity and affluence of the communication instruments and in the plurality of new knowledge resources in contemporary intellectual level. This process develops the sensitivity of freedom and objectivity, and this establishes the fundamental plane in artistic studies made by students.

Art work is an education area based on its own aims and also an effective tool of education that improves creativity of the student, gives him the opportunity for expressing himself and recognizing his environment. Art

works help one develop the problem solving power and boost the competence in communication, cooperation, learning, investigation, healthy life and production.

It's a fact that especially children are affected more by violence, the increased social problems, the lack of respect to each other and intolerance. In many countries, the mother, father and educationalists have arrived at a consensus that this problem forming a danger can be solved with the values education. For solving this kind of social problems, in school values should be acquired to students through funny, affective and striking examples within each lesson.

The interaction of concepts of ethic and aesthetic is a known fact from the ancient Greek philosophers to the present. In this context, aesthetic studies have a major carrier quality in forming ethical values. Therefore the 1st Young Planes Short Film Contest was arranged in the scope of Antalya Values Education by Antalya City National Education Directorate in 2013, and the second in 2014 and the third in 2015.

With the contest, it was aimed the students' conveying their thoughts into a film in the context of the reflection of values such as giving importance to the family unity, the solidarity-helpfulness, sensitivity, honesty, tolerance, respect, love, responsibility, patriotism, being democratic and freedom.

These values were reflected successfully by students in the films made in the shape of individual narration and motion study. 152 films from 122 schools throughout Antalya attended the 3rd Young Planes Short Film Contest. In the films firstly violence and then values such as solidarity-helpfulness, sensitivity, honesty, tolerance, respect, love, responsibility, patriotism, being democratic and freedom were given place.

Among these films 19 films were deemed worthy to award in terms of their various attributions. The jury deemed 87 actor/actress students, 19 director students and 20 consultant students worthy to award. Giving that great numbers of awards in the contest has the aim of both evaluating efforts of students and also encouraging them and -likely- opening their first ways in tending to cinema art.

Footnote

(1). I served as jury in the first, second and third short film contests. So I got the data to be able to make comment and evaluation at first hand over aims and outcomes.

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Skill Versus Content: Using Twitter in the Literature Classroom

Zainor Izat ZAINAL

Universiti Putra Malaysia, Malaysia

zainor@upm.edu.my

Ann Rosnida Mohd DENI

Sunway University, Malaysia

annm@sunway.edu.my

ABSTRACT

In the past decade or so, Twitter has been integrated in the classroom practice, in line with the rise of social networking sites and their popularity with students. Many studies conducted on the use of Twitter in the classroom have verified its beneficial effects in improving learners' motivation, engagement and learning. This small-scale study, which adopted a mixed-method approach, reports students' perceptions on the use of Twitter in two different literature in English subjects – one considered as a skill-based subject whereas one is a content-based subject. Data gathered through analyses of students' tweets and a survey questionnaire administered found that 1) students were more active Tweeting in the content-based subject and that 2) students were less comfortable sharing their thoughts and ideas in Twitter in the skill-based subject. These findings imply that the nature of a course has an impact on the students' willingness and perceptions of the use of Twitter. Suggestions are forwarded for future applications of Twitter in the literature classroom.

INTRODUCTION

Since its introduction to the Malaysian digital market in 2006, Twitter has experienced substantial growth, with more than 3.5 million users sending out about 5.4 million tweets per day (Sakawee, 2014). This is not surprising considering Malaysia is a digitally active nation, with 21.5 million people out of its 31.5 population registered as internet users (Malaysian Digital Association, 2016, p. 2). EY Asia Pacific (2016) reported that 91% of internet users have smartphones, 72% use laptops and notebooks and 60% use personal and desktop computers (p. 5). Besides seeking information (90.1%), 80% of internet users participate in social networks on a daily basis (Malaysia Communication and Multimedia Commission, 2016, p. 8), with 52% of those currently using social media are using Twitter (EY Asia Pacific, 2016, p. 28). As of 2016, Twitter is the 6th most popular social networking site in Malaysia (Malaysia Communication and Multimedia Commission, 2016, p. 33).

In the past decade or so, Twitter has been integrated in the classroom practice worldwide, in line with the rise of social networking sites as well as their popularity with tertiary students, who are generally known as "Gen Y" (aged 18 to 34 years old). Research on the use of Twitter in education has also increased. Tang and Hew (2017, p. 101) reported six ways in which Twitter is used in education: 1) capture and representation 2) communication 3) collaboration 4) class organization 5) reflection and 6) assessment. The contexts for using Twitter in higher education are broad and diverse; it is used across many subject disciplines like language, history, economics and accounting, but not literature (Tang & Hew, 2017, p. 100). Its proven benefits include enhancing learning/academic outcomes (Lackovic, Larny, Lowe & Lowe, 2017; Lowe & Laffey, 2011); increasing student engagement (Evans, 2014; Feliz, Ricoy & Feliz, 2013; Park, 2013; Junco, Heiberger & Loken, 2010) and promoting communication/interaction (Chawinga, 2016; Elavsky, Mislan & Elavsky, 2011; Rinaldo, Tapp & Laveries, 2011). However, barriers and challenges such as students' skepticism on its use as a learning tool (Lackovic, Larny, Lowe & Lowe, 2017; Lowe & Laffey, 2011); students' reservation about mixing academic and social spheres (Lackovic, Larny, Lowe & Lowe, 2017; Osgerby & Rush, 2015); and technological limitations (Lackovic, Larny, Lowe & Lowe, 2017; Chawinga, 2016) have also been reported. These studies reveal that Twitter as a learning support tool in the classroom has varied success rates and students' perceptions and attitudes toward Twitter showed mixed results.

Research on Twitter's use in tertiary education in Malaysia however, is scant even though education-related Twitter accounts such as Malaysia Edu Hub, My Mentor Study and Teach for Malaysia are plenty. One research on Twitter reported a low level of Twitter usage at a community college (Hamidon et. al., 2013).

In view of these findings, and considering 34.3% of internet users are in the tertiary sector (Malaysia Communication and Multimedia Commission, 2016, p. 19) and Gen Y are the most digitally active in Malaysia, spending 15 hours per day on digital devices (EY Asia Pacific, 2016, p. 20), more studies are needed to investigate the potential of Twitter as a learning tool in Malaysian higher education, particularly in the literature classroom.

THE STUDY

The research conducted was primarily a classroom action research, with the aim to improve teaching practice. Two research questions guided this study: 1) How did students in two different literature in English courses use Twitter? 2) How did students in these two courses perceive Twitter as an educational tool?

This study employed a mixed-method approach. Data collection involved: 1) analyses of students' tweets 2) survey questionnaires (administered to the students at the beginning and end of research), 3) interviews with the students. To identify how students use Twitter in their respective courses, a qualitative content analysis was carried out, which involved a close reading of the students' tweets by two raters who then coded and grouped the tweets into different categories. To determine students' perceptions on the use of Twitter as part of their course work, a structured, Likert-scale questionnaire was used.

This study was implemented over a period of twenty-eight weeks (in two different semesters), involving two literature (in English) courses at Universiti Putra Malaysia. The first course is a research methodology (in literature) course (henceforth, RM), a skill-based course that enrolled 29 third-year undergraduates majoring in English literature. The course covered the content, form and style of academic papers in literature, including basic research strategies using both text and electronic sources directly applicable to literary studies. At the end of the course, students were expected to be able to compose bibliographic research relevant to literary topics, and write and present a research proposal. Twitter was made one of the course works. The main reasons for incorporating Twitter in the class were to extend their learning of literary research methods and to provide support for their research project.

The second course is a Malaysian literature in English course (henceforth, MLIE), a content-based course that enrolled 25 third-year undergraduates majoring in Teaching English as a Second Language. The course provided an overview of Malaysian literature in English as a genre in literary studies. At the end of the course, students were expected to be able to identify major writers, explain common themes and issues in selected texts, as well as discuss critically major issues in relation to the establishment and recognition of Malaysian literature in English. Twitter was made one of the course works. The main reasons for incorporating Twitter in the class were to extend their learning of Malaysian literature in English and to provide a platform for discussion.

At the beginning of the semester, students were asked to create new Twitter accounts specifically for their respective courses. These accounts were made accessible to the instructor and those registered for the courses. Some of the students had already had their own Twitter accounts and cited varied reasons for using Twitter such as to seek information related to their interests, to connect with other people and to get entertainment. No time limit was imposed to the students – they could tweet anytime, anywhere, and not necessarily in the classroom. Students were required to tweet comments or questions on course contents and activities such as weekly class issues or assignment-related topics at least twice a week. If the instructor saw no one tweeting, she would post tweets to motivate the students to tweet or initiate discussion.

FINDINGS AND DISCUSSION

Students' use of Twitter

At the end of the semester, RM recorded a total of 575 tweets. MILE, on the other hand, recorded a total of 1107 tweets. On average, over a period of 14 weeks, a student tweeted about 19.8 tweets for RM and 44.3 tweets for MLIE.

Based on the qualitative analyses of students' responses, 14 categories of tweets were identified for RM and 11 categories were identified for MLIE. Table 1 represents the categories of responses elicited in RM whereas Table 2 represents the categories of responses elicited in MLIE.

Table 1: Types of Tweets in RM

No.	Type of Tweets	Example	Number of Tweets	Percentage of Tweets
1	Answer prompt by instructor	Teacher: Have you thought of a research topic? Student1: What's exactly on my mind right now: The Color Purple- The Bluest Eye – Psychoanalytical criticism.	104	18.08
2	Retweet/Favourite		14	2.43
3	Share thoughts about own research	Student2: I'm just thinking of doing a comparison between Sing to the Dawn and Girl from The Coast.	42	7.3
4	Ask info/clarification (general)	Student3: Do we use the feminist criticism if we're looking into oppression/exploitation of children/young adult?	21	3.65
5	Ask info/clarification (teacher)	Student3: @Teacher Is there an angle I can delve into regarding the characters' voices? The silenced & The Silencer?	25	4.35
6	Ask info/clarification (friend)	Sudent4: @Student5 So u r using what lens? I'm using the feminist lens.	4	0.7
7	Share info (link/visual/tweet)		9	1.57
8	Give opinion on friend's tweet/question	Student6: Anyone know the format to omit letter from a word? Example: 'safer' to 'safe' Student5: @Student6 change the whole word by using [] I think.	42	7.3
9	Thank teacher/friend for their opinion/help	Student7: @Student3 I'm probably in the right path then. Lol. Thank u @Student3.	20	3.48
10	Summarize week's lesson	Student8: We will not get anything by plagiarism. It shows that you only know how to take other's, rather than produce yours.	49	8.52
11	Divert from prompt	Teacher: Have you thought of a research topic? Student9: I'm always contemplating on the subject, Was Shakespeare real?	3	0.52
12	Responding to teacher's feedback	Student10: @Teacher Yes! Its'getting clearer! & it helps us to accomplish our lit. rev. Thanks	125	21.73

		for being patient and teaching us from A- Z.		
13	Responding to friend's feedback	Student11: @Student12 Apparently, there's a handful of us interested in the same topic, haha.	77	13.39
14	Miscellaneous	Student13: Tbh, I am disappointed with myself. Rip my literature & gender assignment. Working hard on research methods, Allah ease!	40	6.99
		Total	575	100

Table 2: Types of Tweets in MLIE

No.	Type of Tweets	Example	Number of Tweets	Percentage of Tweets
1	Share thoughts on literature (general)	Student1M: For me, in writing poems, we let out our emotions by creating something beautiful and meaningful.	53	4.8
2	Share thoughts on particular literary texts	Student1M: As I reread The Happening in the Bungalow, I can assume the author wants people to think that there's hope for unity during that time...	414	37.4
3	Share thoughts on MLIE	Student2M: MLIE writers consist of many races and religion. It is a good platform to know the issues that are brought up by these people regarding M'sia.	170	15.3
4	Prompt a discussion (by asking question)	Student2M: What kinds of issue do most writers of MLIE write? Is it the identity, culture or the social hierarchy in M'sia?	25	2.3
5	Answer a teacher's/friend's prompt (once)	Student4M: Exactly, I've been thinking of the same too. People can't even tell what is his race or how does he look like. In response to: Student 3M: Tok Said is the 'wild rumour' himself. Does he even exist? #ScorpionOrchid	232	21
6	Respond to teacher/friend's prompt (thread)	Student3M: Tok Said is the 'wild rumour' himself. Does he even exist? #ScorpionOrchid (This initial tweet generated a discussion thread).	51	4.6
7	Share thoughts on class activities	Student5M: The first assignment has been a learning	27	2.4

		experience.		
8	Retweet/favourite somebody else's tweet (friend/teacher)		18	1.6
9	Share information (tweet/visual/link/media)		20	1.8
10	Share thoughts on life-lessons (relate to life)	Student6M: I think friends consist of multiracial people was a rare sight back then as it is now. That's what I think after reading the novel. #ScorpionOrchid	93	8.4
11	Ask for information/clarification (from teacher)	Student7M: Hello Miss! Do we have to start tweeting this week or the following week?	4	0.4
		Total	1107	100

Out of 14 categories of Tweets identified for RM, 4 categories were found to be superficial and irrelevant to the course (miscellaneous/ thanking others for help, summary of weekly lessons, diverting from prompts given). This means that 19.51% of the tweets were superficial responses. Only 10 categories were related to the course. For MLIE, all 11 categories were found to be relevant to the course.

It was found that for RM, nearly 40% of tweets were prompted by the instructor whereas for MLIE, none of the discussion was prompted by the instructor but the instructor responded to students' tweets. In fact, 25 of MLIE students' tweets prompted discussion threads. The low number and quality of tweets seem to imply that RM students struggled to participate on Twitter. The same was not observed among MLIE students.

Students' Perceptions of Twitter as an Educational Tool

Students' perception of Twitter was determined through a structured, Likert-scale questionnaire, administered at the end of the semester. Table 3 presents the findings:

Table 3: Students' perception of using Twitter (in percentages)

No.	Items	RM	MLIE
1.	Twitter is fun as a coursework.	SA: 6.9% A: 10.3% 17.2%	SA: 24% A: 36% 60%
2.	Twitter provides a new experience in learning.	SA: 20.7% A: 20.7% 41.4%	SA: 24% A: 52% 76%
3.	I use Twitter because it is part of my coursework.	SA: 34.5% A: 24.1% 58.6%	SA: 36% A: 32% 68%
4.	Twitter helps extend what I have learnt in class.	SA: 0% A: 34.5% 34.5%	SA: 28% A: 48% 76%
5.	Twitter helps me to clarify topics or concepts that I do not understand in class.	SA: 6.9% A: 27.6% 34.5%	SA: 8% A: 40% 48%
6.	Twitter is more suitable for networking and not for learning.	SA: 20.7% A: 31% 51.7%	SD: 56% D: 4% 60%

7.	I learnt a lot of things about the course through Twitter.	SA: 3.4% A: 17.2% 20.6%	SA: 8% A: 24% 32%
8.	I feel more engaged with the course through Twitter.	SD: 13.8% D: 24.1% 37.9%	SD: 0% D: 25% 25%
9.	Twitter provides me with valuable support in learning.	SA: 10.3% A: 13.8% 24.1%	SA: 8% A: 64% 72%
10.	Using Twitter is a hassle.	SA: 24.1% A: 13.8% 37.9%	SA: 0% A: 4% 4%
11.	I prefer to consult the teacher using Twitter rather than face-to-face.	SD: 17.2% D: 31% 48.2%	SD: 4% D: 36% 40%

It was found that MLIE students perceived Twitter as an educational tool more positively than the RM students, which perhaps explains their frequent use of Twitter. It was found that a higher percentage of RM students disagreed with the use of Twitter as a learning tool. In fact, nearly 40% of them found the use of Twitter a hassle.

Generally, it was found that MLIE students found Twitter supportive of their learning, compared to RM. 72% of MLIE students agreed that Twitter provided them with valuable support in learning. Only 24.1% of RM students, on the other hand, agreed that Twitter is supportive of their learning. 76% of MLIE students agreed that Twitter helped extend what they have learnt in class and 60% agreed that Twitter helped to clarify topics or concepts that they did not understand in class. Perhaps because of its familiarity or relevance to the students (students study and debate texts that are contextualised locally), certain course content for the course allows them to share their thoughts, experiences and reflections on Twitter.

On the other hand, RM students did not seem to find Twitter supportive of their learning. Only 34.5% of RM students agreed that Twitter helped extend what they have learnt in class and that Twitter helped to clarify topics or concepts that they did not understand in class. These findings seem to suggest that unfamiliarity with or uncertainty about literary research may have impacted the RM students' participation in Twitter. Furthermore, RM is a skill-based course. Perhaps, because of this, students did not see the value of discussing 'the how-tos' on Twitter. Based on the findings, it can be concluded that the nature of the course (content-based vs. skill based) may have affected Twitter use. It is perhaps much easier to discuss or share 'content' rather than 'skills' on Twitter.

Students' experience on Twitter prior to the study may also be a factor in influencing students to use Twitter in the respective courses. Table 4 summarizes students' experience of Twitter prior to the study:

Table 4: Students' experience of Twitter Use Prior to the Study

RM	MLIE
15 (out of 29) or 51.7% students had their own Twitter accounts.	16 (out of 25) or 64% students had their own Twitter accounts.
15 students had their own Twitter accounts for 1 year or more.	10 students had their own Twitter accounts for more than 3 years.
5 (out of 15) students were active users.	6 students had their own Twitter accounts for 1 year or more.
14 others never had Twitter accounts.	9 (out of 16) students were active users.
	8 other never had Twitter accounts.

It was found that a higher number of MLIE students were active on Twitter prior to the study. As they were familiar with Twitter use, these students could have less inhibitions about using Twitter in their literature course.

This shows that prior experience or familiarity with using Twitter as a social medium may have influenced students to use and perception of Twitter for classroom purposes. This, however, contradicts findings by Lackovic, Learny, Lowe and Lowe (2017).

IMPLICATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

From this study, it can be implied that the nature of a course could have an impact on the students' use of technological tool like Twitter. If a course is a content-based course, like MLIE, students would be less hesitant to use Twitter as learning is organized around the content or information that students could easily have knowledge of and relate to. A skill-based course like RM would to some extent dampen the students' motivation to use Twitter because the development of students' skills require time and until students master these skills, there was not much they could share, learn or contribute through Twitter.

Prior to using a technological tool like Twitter, students' prior experience or familiarity with the tool also need to be considered. This is supported by McCallum, Price and Whiteford (2009) who found that familiarity with a specific classroom activity has an impact on students' perception and the perceived value of the activity. When supporting students' learning of a course that they are not familiar with, it is perhaps advisable to use a tool that students are familiar with. Ranked sixth in Malaysia's list of popular social media, Twitter may not really be the preferred tool. It is perhaps advisable to use a tool that students are more familiar with, for example Facebook. It is also a good idea to check students' perception of a technological tool before using it in class, as found in the study by Wynn (2013).

CONCLUSION

The use of Twitter across literature courses may yield different results. This study shows that the adoption of Twitter as a learning tool hinges on the nature of the course and students' familiarity with Twitter. Findings from this study suggest that perhaps Twitter is more relevant and practical for content-based courses rather than skill-based courses.

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Social Competence, Hope for the Success and Participation in Popular Culture of Polish Students of Education and Special Education

Kamil KURACKI

*Department of Pedagogical Therapy
The Maria Grzegorzewska University,
Warsaw, Poland,
kkuracki@aps.edu.pl
kamillo17@wp.pl*

ABSTRACT

The article presents the results of research conducted in the years 2016-2017 among bachelor and masters students of education and special education in Poland. The results of the study include data focusing on the psychosocial functioning of students (N=150), in particular, the relationship between social competence, hope for the success and participation in selected areas of pop culture, such as: social networking, new media and technologies, television programs, e.g. talent shows, popular literature etc.

Key words: Hope, Social Competence, Culture, Special Education

INTRODUCTION

CONCEPTUAL FRAMEWORK AND BACKGROUND

The phenomenon of convergence of old and new media, as well as development of new technologies and social media, i.e. Facebook, YouTube, Instagram, blogs, etc. (Sosnowski, 2012; cf. Feliciak, Danielewicz, Halawa et al., 2010), along with the ever-presence of the so-called temples of consumption (Ritzer, 2001), stimulate the research on the participation of young people in pop culture and the role of pop culture in shaping their psychosocial resources. More and more often, the literature discusses the educational potential of popular culture and its place in the pedagogical space (Anioł, 2016). Nowadays, it is easy to see that social discourse is on the ground of popular culture. The study indicates that pop culture, with its universality and openness, playing a crucial role in the identity building of the teenagers (Melosik, 2014) and the functioning of young adults (Zagórska, 2004).

The use of some popular culture products (e.g. social networking sites, popular literature etc.) seems to provide opportunities for establishing contacts, shaping self-presentation, and for developing knowledge and skills (e.g. new media, Internet) (Kuracki, 2016). Consequently, it is likely that it can be significantly associated with social functioning, reinforce self-confidence and expectation for future professional success. It is especially important, because according to 75% of college graduates in EU, social ability to work with other employees, clear information, ability to critically evaluate one's own ideas, and ability to use information technology and the Internet are the most useful competences in the workplace (Żyra, 2013). Social competences are essential for coping with social situations and solving professional and educational problems and achieving social cohesion (Jeruszka, 2016). Furthermore, the development of skills in the use of modern technologies, as well as the improvement of foreign language skills, can be an important part of the process of shaping the sense of success of future teachers (Lebuda, 2014). Persons with a high level of hope for success (according to Snyder theory: confidence in having the skills to succeed) find less difficulty in the decision-making process (Zaleszczyk, Kot, 2015) and more constructively and actively cope with difficulties (Qiu, Li, 2008). Moreover, high levels of hope for success are associated with high level of quality of life (Turosz, 2011). Because the pop culture is a natural development space of the contemporary young people and pedagogical studies are special time in shaping the personal and social competencies of students (Klimkowska, Dudak, 2012), it seems especially important to explore the issue in the context of relations between participation in the space of pop culture, social competence and hope for success, useful for functioning in the teacher's role, exhibited by the students of education and special education. It is an area that has not been subjected yet to a complex, multifaceted research.

RESEARCH

The main goal of the research was to study the level of social competence, hope for success and the activity of Polish bachelor and master students in selected areas of pop culture, as well as establishing relations between the aforementioned variables. With this set goal, the following research questions have been formulated: 1. What is the frequency of the bachelor and master students' of education and special education participation in the selected areas of the pop culture? 2. Do any differences exist between the levels of social competence, hope for success and activity in selected areas of the pop culture in Polish bachelor and master students of education and special education, and if yes, then what are they? and 3. Are there any relations between the participation in selected

areas of the pop culture and social competence, hope for success in the studied group of students, and if yes, then what kind of?

In the studies carried out through the diagnostic survey, three research tools were used: Social Competence Questionnaire (KKS) A. Matczak (2007), The Hope Scale (KNS) by C. R. Snyder in M. Łaguna, J. Trzebiński, M. Zięba Polish adaptation (2005) and a questionnaire for the studies of the participation of students in the areas of the pop culture, developed by K. Kuracki. The study group consisted of 150 bachelor and master students of education and special education (135 women and 15 men) from Poland. The age of the students was between 20 and 26 years ($M=21.80$, $SD=1.447$). Half of the respondents were students of the Bachelor program and half of the Masters program.

RESULTS

In the studies, it was shown, that the students' participation in the pop culture relies mostly on using social networking sites like Facebook, Twitter, MySpace, Instagram, etc., and on using new media and technologies (tablets, smartphones, smartwatches). Frequent and very frequent activity in those fields was declared by over 80% and over 70-80%, respectively on both level of studies. The areas in which the Polish students of education and special education participation was much less frequent were: watching entertainment programs like the talent shows, spending free time in shopping malls, reading popular literature (both on the bachelor and masters program). In each of those fields, a frequent and very frequent activity was declared by no more than 24% of the study groups (Table 1).

Table 1: Frequency of participation of students of education and special education (N=150) in selected areas of the pop culture

Studied group	Frequency	Using social networking sites		Using new media and technologies		Watching entertainment programs like talent shows		Spending free time in shopping malls		Reading popular literature	
		N	%	N	%	N	%	N	%	N	%
Students of Bachelor program (N=75)	never	3	4.0	3	4.0	9	12.0	0	0	6	8.0
	rarely	3	4.0	6	8.0	42	56.0	60	80.0	36	48.0
	quite often	6	8.0	12	16.0	9	12.0	15	20.0	15	20.0
	often	18	24.0	27	36.0	9	12.0	0	0	12	16.0
	very often	45	60.0	27	36.0	6	8.0	0	0	6	8.0
	Total	75	100	75	100	75	100	75	100	75	100
Students of Master program (N=75)	never	3	4.0	3	4.0	15	20.0	3	4.0	3	4.0
	rarely	3	4.0	6	8.0	33	44.0	51	68.0	30	40.0
	quite often	3	4.0	3	4.0	15	20.0	12	16.0	27	36.0
	often	18	24.0	12	16.0	9	12.0	6	8.0	12	16.0
	very often	48	64.0	51	68.0	3	4.0	3	4.0	3	4.0
	Total	75	100	75	100	75	100	75	100	75	100

Analyses carried out with the t-Student test show two statistically relevant differences in the levels of hope for the success of bachelor and masters students, both in the total results and factor I -strong will - agentic thoughts. The mean result in the total result (TR) obtained by the students of bachelor program ($M=47.96$; $SD=5.634$) was much higher than the mean result obtained by the students of masters program ($M=45.28$; $SD=5.254$), $t_{(148)}=3.013$, $p<0.01$. What is more, the mean result in the Factor I obtained by the students of bachelor program ($M=23.36$; $SD=3.319$) was much higher than the mean result obtained by the students of masters program ($M=21.60$; $SD=3.393$), $t_{(148)}=3.211$, $p<0.01$. (Table2).

Table 2: Differences in average levels of hope for success (KNS)- total result (TR), Factor I: strong will- agentic thoughts and Factor II: ability to find solutions- pathway thoughts, in the group of Bachelor Program students (N=75) and Master Program Students (N=75)

Variables KNS	Students of Bachelor Program		Students of Master Program		t	Df	P
	M	SD	M	SD			
TR	47.96	5.634	45.28	5.254	3.013	148	.003*
Factor I	23.36	3.319	21.60	3.393	3.211	148	.002*
Factor II	24.60	3.171	23.68	2.727	1.905	148	.059

*statistically relevant result

Source: Own work based on SPSS 24.0

No statistically relevant results have been obtained between the studied groups in the case of the levels of social competence, both in total results, as well as in sub-scales of intimacy, social exposure, and assertiveness (Table 3.)

Table 3: Differences in average levels of social competences (KKS) – total result (TR), components: intimacy (I), social exposure (ES), assertiveness (A) in the group of Bachelor Program students (N=75) and Master Program Students (N=75)

Variables KKS	Students of Bachelor Program		Students of Master Program		t	Df	P
	M	SD	M	SD			
TR	172.92	23.886	170.40	21.509	.679	148	.498
I	43.96	5.956	43.20	4.957	.849	143.274	.397
ES	51.64	8.058	50.76	8.195	.663	148	.508
A	46.08	7.952	45.56	6.418	.441	148	.660

*statistically relevant result; $p < 0.05$

Source: Own work based on SPSS 24.0

There was a relevant difference, however, between bachelor and masters students in relation to the participation in the pop culture. As the analysis with the t-Student test indicated, the mean result in the area of electronic media and new technology usage obtained by the masters students ($M=4.36$; $SD=1.135$) was much higher than the mean result obtained by the bachelors students ($M=3.88$; $SD=1.219$), $t_{(148)}=-2.496$, $p < 0.05$. Masters students of education and special education show a much higher activity in the area of usage of such devices as tablets, smartphones, smartwatches and electronic boards. In other areas of participation in the pop culture, no significant differences between the groups have been observed (table 4).

Table 4: Differences in average frequency of participation Bachelor Program students (N=75) and Master Program students (N=75) in selected areas of the pop culture

Variables	Students of Bachelor Program		Students of Master Program		t	Df	P
	M	SD	M	SD			
Using social networking sites	4.32	1.055	4.40	1.027	-.471	148	.639
Using new media and technologies	3.88	1.219	4.36	1.135	-2.496	148	.014*
Watching entertainment	2.48	1.107	2.36	1.061	.678	148	.499
Spending free time in shopping malls	2.20	.403	2.40	.854	-1.834	105.341	.069
Reading popular literature	2.68	1.092	2.76	.913	-.487	148	.627

*statistically relevant result; $p < 0.05$

Source: Own work based on SPSS 24.0

In the group of bachelor students, weak and moderate positive correlations have been demonstrated between using social networking and hope for the success - with the total result ($r=.664$; $p < 0.01$), factor 1, understood as the strong will- agentic thoughts ($r=.546$; $p < 0.01$), and factor 2, understood as the ability to find solutions-pathway thoughts ($r=.609$; $p < 0.01$), as well as weak positive correlations between using social networking sites and social competences - with the total result ($r=.345$; $p < 0.01$) and its components, i.e. intimacy ($r=.254$; $p < 0.05$), social exposure ($r=.247$; $p < 0.05$) and assertiveness ($r=.345$; $p < 0.01$). In the same study group weak positive correlations have been demonstrated between using new media and technologies and hope for the succes- with the total result ($r=.330$; $p < 0.01$), factor 1 ($r=.321$; $p < 0.01$) and factor 2 ($r=.250$; $p < 0.05$), as well as

between using new media and technologies and social competence - with the general result ($r=.234$; $p<0.05$). In the group of masters students weak positive correlations have been demonstrated between using new media and technologies and social competence-intimacy ($r=.239$; $p<0.05$). Analogically, only in the group of masters students weak positive correlations have been demonstrated between reading popular literature (e.g. fantasy, science fiction, thriller, criminal-sensational and romance), and social competence - total results ($r=.288$ $p<0.05$), intimacy ($r=.414$, $p<0.01$), social exposure ($r=.328$, $p<0.01$). What is more, in the group of masters students weak and moderate negative correlations have been demonstrated between watching entertainment programs like talent shows and hope for the success- with the total results ($r=-.324$; $p<0.01$), factor 1 ($r=-.252$; $p<0.01$), factor 2 ($r=-.310$; $p<0.01$) as well as between watching entertainment programs and social competences - the general result ($r=-.594$; $p<0.01$), intimacy ($r=-.446$; $p<0.01$), social exposure ($r=-.675$; $p<0.01$) and assertiveness ($r=-.387$; $p<0.01$). In the same study group moderate negative correlations have also been demonstrated between spending free time in shopping malls, galleries and social competences - the general result ($r=-.428$; $p<0.01$), social exposure ($r=-.484$; $p<0.01$) and assertiveness ($r=-.404$; $p<0.01$), whereas weak and moderate negative correlations have been demonstrated between spending free time in shopping galleries and hope for the success - total result ($r=-.296$; $p<0.01$) and factor 1 ($r=-.434$; $p<0.01$). In the study group of bachelor students weak negative correlation was revealed only between spending free time in shopping galleries and social competences-intimacy ($r=-.318$; $p<0.01$) No statistically relevant relations have been found between the other variables (Table 5).

Table 5: r-Pearson's correlations between participation in selected areas of the pop culture and variables: hope for success (KNS)-total result (KNS TR), factor I (KNS F1), factor II (KNS F2) and social competences – total result (KKS TR), components: intimacy (KKS I), social exposure (KKS ES), assertiveness (KKS A) in a group of Bachelor Program students (N=75) and Master Program Students (N=75)

Variables	Group of students		KNS TR	KNS F1	KNS F2	KKS TR	KKS I	KKS ES	KKS A
Using social networking sites	Bachelor	r	.664**	.546**	.609**	.345**	.254*	.247*	.345**
		p	.000	.000	.000	.002	.028	.032	.002
	Master	r	-.149	-.175	-.070	.040	-.096	.055	-.004
		p	.203	.134	.553	.731	.415	.640	.975
Using new media and technologies	Bachelor	r	.330**	.321**	.250*	.234*	.195	.185	.168
		p	.004	.005	.031	.044	.094	.111	.149
	Master	r	.112	-.004	.221	.069	.239*	-.073	.083
		p	.338	.97	.057	.558	.039	.531	.478
Watching programs like talent shows	Bachelor	r	-.224	-.224	-.164	-.081	-.028	-.089	-.120
		p	.053	.053	.160	.488	.813	.446	.307
	Master	r	-.324**	-.252**	-.310**	-.594**	-.446**	-.675**	-.387**
		p	.005	.029	.007	.000	.000	.000	.001
Spending free time in shopping galleries	Bachelor	r	-.050	-.055	-.032	-.205	-.318**	-.065	-.208
		p	.670	.642	.787	.078	.005	.580	.074
	Master	r	-.296**	-.434**	-.031	-.428**	-.211	-.484**	-.404**
		p	.010	.000	.790	.000	.070	.000	.000
Reading popular literature	Bachelor	r	-.180	-.113	-.201	.112	.222	.088	.026
		p	.122	.334	.083	.337	.055	.453	.823
	Master	r	.217	.309**	.034	.288*	.414**	.328**	.141
		p	.061	.007	.773	.012	.000	.004	.228

** relevant correlation at the level $p<0.01$ * relevant correlation at the level $p<0.05$

Source: Own work based on SPSS 24.0

CONCLUSION

The study showed that the bachelor and masters students of education and special education actively participate in the pop culture, especially in the areas connected to using social networking sites and new media and technologies. Apart from a more frequent use of new media by masters students, the level of studies does not differentiate the frequency of using the products of pop culture by the students of education. However, the bachelor students present higher level of hope for the success. This may be because they are at the beginning of a

career (compared masters students), maybe they are more optimistic, or because they have not had yet the opportunity to experience first professional training. The study has demonstrated that there are positive correlations (from weak to moderate) between active participation in the pop culture and psychosocial performance of the student of education and special education in the context of presented social competences and hope for the success. Those relations are especially visible in the areas of using social networking sites, using new media and technologies (bachelor students), and reading popular literature (masters students). On the basis of the obtained results, it can be concluded that smart technologies and social media are an important space for social interactions in which young people (mainly at the beginning of the studies) can test their social competences and shape new ones, especially their assertiveness and the ability to handle situations requiring self-presentation and resilience to increased attention and interest from other people. On the other hand, the higher the level of social competence of bachelor students, the more active their participation in the selected areas of the pop culture. Furthermore, the reading of pop culture literature, may be related to the process of identification with literary heroes, as a result of which social heroes' behavior is modeled, such as courage or coping skills. The behavior of literary heroes can help build a sense of confidence inspire hope in the reader. Thus, changes in the attitudes and behaviors of the reader may arise, especially in the reader with a high literary maturity. Thus, changes in the attitudes and behaviors of the reader may arise, especially in the reader with a high literary maturity. It can be assumed that such maturity increases with age, therefore correlations occur in the group of masters students. The study has also demonstrated that there are negative correlations (from weak to moderate) between active participation in the pop culture and psychosocial performance of the student of education and special education in the context of presented social competences and hope for the success. Those relations are especially visible in the areas of watching programs like talent show (mainly masters students), and spending free time in shopping galleries (masters students). It can be assumed that these types of activities are conducive only to wasting leisure time, promoting a consumer lifestyle and learning claims. What's more, watching talent shows can teach young people to criticize, ridicule, manipulate, and show that on the road to success, it's worth being controversial and provocative. Therefore, it seems that the results appear to provide positive data on the image of future educators.

SUGGESTIONS FOR FUTURE RESEARCH

Obtained results can be a contribution to further, more in depth studies focused on searching for determinants of the attractiveness of selected areas of pop culture to the student of education and other fields of studies, and for the directions of indicated relations between students' participation in the pop culture and discussed aspects of their functioning.

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Social Innovation in Small Schools in Thailand

Thanakorn SRIWIPHAT

*Faculty of Education, Khon Kaen University,
Thailand
hanakorns@kkumail.com*

Dawruwan THAWINKARN

*Faculty of Education, Khon Kaen University,
Thailand*

ABSTRACT

The purpose of this research were to studies the component of social innovation and application of social innovation process applied in educational management of small schools in Thailand. Data was collected by 3 methods were using: 1) documentary analysis of 120 documentary sources; 2) in-depth interview with 7 experts in social innovation; and 3) field studies in the 5 schools model that Thailand awarded best small school are the best practice. The research found that: Social innovation in small schools consisting in 4 elements are 1) change by social; 2) product of concrete; 3) means of creative; and 4) support the participation of the society. The process of creating social innovation has 4 stages: 1) analysis of the need and problem of the society; 2) the development of solutions to the problem and need of society; 3) to evaluate the effectiveness; and 4) increasing the level of efficiency of the social innovation. The process of leading social innovation includes: 1) change ideas and build special strategy wisely; 2) actions to accelerate the success; 3) to raise the innovation with the exchange extensively. At the same time with the development and change the system of social innovation better.

Keywords: Social Innovation, Small School, Educational Management

INTRODUCTION

Social innovation is a rather new notion within the educational arena in Thailand. Ideally, a goal of education is to correct social problems. Accordingly, schools should be able to simultaneously respond to social change while directing their students to be social innovators for the betterment of society. To achieve this objective, schools must begin by making changes in their way of thinking and working. Pravet Wasi (2013) noted that to be able to strengthen community with innovation, an effective education system should first be fostered. Educational organizations are widely networked and can create immense social change. Social innovation is a principle that involves generating changes that meet the particular needs of a society. It not only increases an organization's internal capacity, but can also help direct a country toward sustainable development. The working principles should be based on society's needs and implemented for the betterment of society. Innovative development involves corporations from all social sectors, while educational bureaus should take the lead in making social change. The application of social innovations in many schools in Thailand set a role model of success for other small schools. Most successful cases of social innovation are associated with big schools due to their ability to exploit better resources, such as money, students, parents, and teachers. With the blessing of these facilities, big schools find it easier to develop social innovation and of course their works are better recognized by the public. However, big schools are only a small portion of the total number of Thai schools. It is estimated that there are 30,717 small schools throughout the nation, among which 15,705 schools reportedly have less than 120 students. Small schools account for 53 percent of Thailand's total number of schools. The number of small schools has been consistently high. The problems observed in small schools are far more complicated than those observed in big ones. The most common problems tend to be related to a lack of teachers, the teaching of non-major area subjects, mixed-level teaching, and an inadequate budget. Government subsidies for Thai schools are calculated based on headcount, so small schools with a very small number of students inevitably get very limited monetary support. Such limitations negatively affect educational efficiency among smaller schools. Moreover, some schools are located in accessible areas, such as on a high mountain or an island. Commuting to schools can thus be very difficult for some students. Teachers lack motivation and frequently relocate. Teachers who remain find it hard to lead learning suitable for student diversity. The curriculum may not reflect the learning needs of the students in that particular area or their local culture. Small schools are generally surrounded by poor communities, making the assembling of resources for school development nearly impossible. These are the disadvantages that impede small schools from achieving their goals.

Praves Wasi (2010) addresses a partial solution to the problems small schools face in Thailand, saying the country needs a bottom-up revolution. Thailand is traditionally considered a direct cause-effect society, where identifying the cause of a problem can lead to a direct way of solving it. Given that Thai society has recently become much more complex, however, solving social problems is far more complicated than in the past, which is why the development of social innovation can help strengthen society. Integrating social sectors can help to solve intricate social problems holistically. The Area-Function-Participation (AFP) concept is deemed appropriate for present-day problem-solving. For sustainable results, problems existing in a specific area should initially be solved by all local stakeholders. This concept is consistent with the late King Bhumibol's suggestion for rural development to the extent that he initiated the philosophy in Thailand that the problem-solving process should be matched with the locality of the problem. Each social problem is associated with its own geo-social base, and the entrenched cultures, which are diversified regionally, help to make each problem distinctive from others (Sumet Tuntivechakul, 2006). The late King Bhumibol used to refer to his way of social problem-solving as "bursting from inside," meaning development should start from individuals' awareness of a problem (The Office of Economic and Social Development Commission, 2011, 2014). Accordingly, the Basic Education Office's second term of educational reform enforces that a 21st century learning style should be achieved by training students to be social innovators who can make society better for all. In order to achieve these educational goals, or so as to navigate their schools toward their intended goals, school directors and teachers should be trained on how to create social innovation within their schools. Social innovation is a tool for the development of human resources, effective educational management, and school reform. Gold & Brown (2003) and Ewington et al. (2008) suggest triggering the success of small schools with the creation of new projects. Devotion and pride is strengthened among small school stakeholders when school members are able to develop projects and innovations of their own. Mano Chundee (2013) suggests that necessities for turning small schools into professional learning communities are the creation of a vision, mission and strategy; personnel development; knowledge management ; appropriate applications of technology; systematic administration; and academic leadership. Moreover, it is suggested that throughout their work process, school staff should apply the concept of MANO to their work ethic policies: Move Together, Awareness, Never Do Alone, and One for All and All for One.

Despite the fact that small schools have undergone many programs to increase adequacy in education, a good proportion of them have struggled to develop innovations suitable for solving their own unique problems. Any outstanding success in these schools has tended to be based on social patronage, which induces other small schools to follow this fashion of success. Small schools must overcome a number of burdens in order to offer the best learning opportunities for their students. The efforts of these small schools are clearly admirable, as they help in bridging the educational gaps between small and big schools in order to create equal learning opportunities, as described in the National Education Act. Small schools' needs for development deserve everyone's devotion, as nationwide, these schools are the learning hubs for the majority of the people living in the country. Suffice it to say that the development of small schools is also the development of the lives of rural people. Therefore, this research aimed to investigate components of social innovation, how social innovations are developed, and how they are applied toward the development process of small schools. The findings from this research are expected to provide clues for small school development.

RESEARCH OBJECTIVES

1. To investigate the components social innovation developed in small schools.
2. To study the process by which social innovations are developed and applied to small school development.

LITERATURE REVIEW

Principles of social innovation

Paves Wasi (2002) defines social innovation as a type of development based on social interaction that increases the potential for a balanced dynamic. In other words, it creates a harmonious and peaceful community. This understanding of social innovation, however, is quite abstract and may not be applicable to defining developmental research. Mumford (2002) defines social innovation as the development and application of working principles to easing problems relating to society, culture, the economy, and the environment. Mulgan et al. (2007) maintain that social innovation infers new schools of thought that have been developed via different methods and that can be beneficial in some way.

In addition to the definitions above, social innovation has been referred to as the ability to innovate. The International Forum for Social Innovation (2007) states that social innovation refers to the ability to create new social behaviors which help individuals to transform themselves and their work performance. At an individual level, each member of society should be able make positive change in society. Phills et al. (2008) says social innovation is a process for discovering new thoughts and the application of those new thoughts to solving society's multi-dimensional problems. Kesselring & Leitner (2008) explain social innovation as the convergence between how society's problems are reflected in society and the solutions for those problems, as the need to solve a problem and the objectives of problem solving practices transpire simultaneously and interdependently. This idea is consistent with that held by Hochgerner (2009), who says that innovation is a result of commitment to solving social problems. Therefore, the innovation itself resembles the overall structure of the community. The term social innovation is defined by Dawson & Daniel (2010) as an attempt to create social change, extending beyond economic change. Social innovation in a particular area is derived from a sociological perspective. Julie Caulier-Grice (2010) explains that social innovation is a method and principle that should be implemented in response to the needs of a society to provide better education and a better environment. On the other hand, social innovation is a new concept within the field of social development. Edgington (2010) says that social innovation provides a foundation for sustainable social development. The Young Foundation (2012) and European Commission (2013) share similar conclusions, namely that social innovation provides a new set of methods for social betterment, which can manifest in a variety of forms, such as a new product, a type of service, or a marketing model or process that encourages an optimal exploitation of resources. Social innovation leads to social integration, as all members of society are exposed to the same social pressures and need to collaborate in order to figure out how to make their community a better place to live. Alakeson & et al. (2003) say that social interaction advances similar behavioral changes in many members of a society, leading to a major change in the society as a whole. The following factors are deemed supportive to social innovation.

- 1) The forming of repeated habits
- 2) Strong incentives for transformation
- 3) A spontaneous response to problems
- 4) The amplifying of ideas for change

The new pattern of interactions that emerge cannot be predicted or controlled, as shown in Table 1

Table 1: Comparison of the three origins of social innovations (AlongkornKootragoo, 2010)

Item List	Generated from planning	Generated from entrepreneurs	Generated from simultaneous and interdependent contexts
Stream	-Top-down administration -Based on a centralized plan -Built according to previous schemes	-Initiated by local leaders -Based on vision and considerations relating to a particular area -Can be a new idea or built according to one of the previous schemes	-Bottom-up method -Generated from sub-group interaction -A totally new idea
Baseline	-External organizations are dominating over a local administration	-Individual local leaders are empowered with decision making authority -Able to make or shape decisions	-Innovation is launched under simultaneous and interdependent contexts
Key factors	-Planning and monitoring	-Leadership	-Interaction
Envoy/generator	-Government bureaus	-Social entrepreneurs	-Community

Defining innovation can be complicated, as novelty is involved, which is a phenomenon difficult to verify. Many considerations must be taken into account when judging levels of novelty. For example, "To what degree should an innovation create something new?" While a simple question, the answer is rather ambiguous, as an innovation can be new in one manner while remaining old in another. Defining the novelty of an innovation can be

complicated even within the same area it is introduced, as that innovation would have been introduced to the area some time before.

From an academic perspective, Rogers (2003) proposes innovation evaluation based on an innovation's actual value rather than on its novelty. A particular innovation's novelty is vague and contingent on individuals and their community's perceptions of it. Good social innovation, however, should be able to trigger positive changes in a community. Innovation itself may occur as one of two forms of change: a) incremental innovation or b) radical innovation. The first type of innovation is a diffusion of an existing innovation by redeveloping it or building on it before applying it to problem solving.

In summary, social innovation involves thoughts, processes, or social products that are built from social collaboration. It is used for directing society toward its goals and sets a learning and development model that aims to involve public collaboration in social development. Innovation should incorporate change making by the public, yielding to production, employment of a creative working process, and encouragement of public participation.

RESEARCH METHOD

This qualitative research had three phases of data collection, as follows.

1) The researcher reviewed 120 documents relating to social innovation to obtain data on components of social innovation. The simple random sampling method was used to select the papers reviewed for this research.

2) The researcher conducted in-depth interviews with 7 social innovation experts, including school directors, academics, and researchers involved in social innovation development.

3) Data were collected from 5 small schools that had been awarded national prizes and that had been named master schools with impressive social innovations. The schools were selected using purposive sampling in order to ensure they represented the values of good social innovation within schools and to confirm that they had been able to introduce positive changes within their communities.

The data collection process involved field data collection, decoding of the school's successful practices, interviewing of school stakeholders, and summarizing the data, with the purpose of offering recommendations for social innovation development in small schools.

RESULTS AND DISCUSSION

Findings on social innovation in small schools

This research revealed four components of social innovation in small schools in Thailand, namely: 1) Change is initiated by the community. Changes are triggered by existing problems at the school level which lead to a desire to solve those problems. 2) Innovations yield abstract results, meaning they are able to creatively bring the public into the school's development process, and their successful application creates a learning model for other small schools on which to base their own development. 3) Innovations are creative. Creativity in this case refers to the degree to which the innovations are made attractive enough to impel positive interactions among people in schools, leading to the achievement of sustainable school development. 4) Innovations promote social participation and new patterns of interaction. The public's involvement in school development increases the schools' capacity for assembling resources, and helps the schools to clarify policies and their role in the community. The findings described above were gathered from the related literature and were corroborated by empirical evidence gathered from observing the small school research sample to the extent that the small schools, with community support, were able to develop outstanding innovations. Conscientious administration by school directors was also observed to play a key role in social innovation. The components of social innovation observed in this research were similar to those proposed by Lynden (2014), who says that social innovation consists of 3 factors, namely *change by community*, *change by intervention*, and *change by a new work process*. Each of these components is described below.

1) *Change by community* refers to a process of social transformation initiated due to a community's desire for change. People in the community are well-informed about the change and anticipate the value that it brings. Therefore, they take part in making that change happen.

2) *Change by intervention* refers to social innovation resulting in a new product. A product can be either concrete or abstract if it meets the needs of a changing society and its people. A product resulting from social

innovation can be interventions, services, or even a new process of production. These products may be brand new inventions or simply the refurbishing of old products with some additional adjustments to increase effectiveness.

3) *Change by a new work process* is another type of outcome of social innovation and refers to the development of an innovative process. Changes in a work process can include the correcting of relationship patterns among co-workers or the redistribution of positions resulting in more effective work, by replacing a worker who does not meet the standards of a task with a more qualified person. Work process changes can also involve creating a new department to take care of certain tasks that require special attention. Social innovation should lead to the creation of new needs and new work strategies to help achieve a new set of goals.

Findings on the development and application of social innovation toward education management in small schools

The development process for a social innovation was found to consist of four major steps: 1) Conducting a social needs analysis, 2) Finding solutions for correcting social problems, 3) Evaluating the solutions, and 4) Improving efficiency levels of the social innovation. This research found that social support is crucial for the development of a social innovation. Praves Wasi (2013) proposes a theory called, “triangle that moves the mountain,” which focuses on three important factors for the success of social change, namely 1) knowledge, 2) social movement, and 3) authority and policy link. This theory stresses that in order to achieve a demanding task that is hard to complete, practitioners should learn to exploit more knowledge, social movements, and support from the government, applying such resources toward performing the task. Working on a complicated task can be highly demanding; figuratively, it can be as hard as trying to move a mountain. Based on this theory, knowledge, social movement, and government authority should be used as “levers” to propel toward a better society, as illustrated in Figure 1

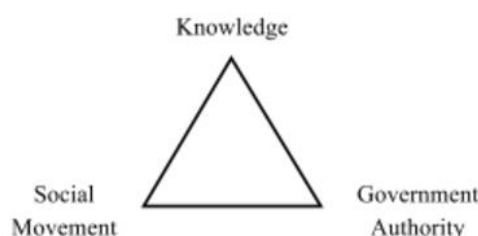


Figure1: Triangle that Moves the Mountain (Praves Wasi, 2013)

Observations made through this research show the applications of social innovations in small schools to have 3 steps: 1) notion change and smart strategy, 2) implementation, and 3) raising the innovative standard. These three steps can be achieved via interaction with other schools and via the school's struggle to improve innovation. Similar observations have been made by the European Commission (2013), under which applications of social innovation are divided into 3 steps: 1) making conceptual changes and creating smart strategies, 2) implementing for success, and 3) raising and disseminating innovation standards. These 3 main steps account for 10 sub-techniques which describe how social innovations are applied in small schools: 1) shopping for ideas, which involves reading and exploring innovations that are effective for a particular setting, 2) creating and developing innovations of one's own, 3) consulting with experts to obtain their clear input and to speculate on the outcomes of ongoing innovation, 4) developing strategy and planning for innovation specialization, 5) searching out collaboration in applying innovations (this may involve conducting trainings for people in the community on the work process for different innovations), 6) improving innovation efficiency, 7) developing innovation specifications according to for whom it is intended, 8) classifying types of social innovation and doing research, 9) zoning of the areas in which each of the innovations will be applied, and 10) doing cross-regional innovative integration, conducting international innovation exchanges, creating borderless exchange, and exploiting innovations.

CONCLUSION

The component of social innovation and application of social innovation process applied in educational management of small schools in Thailand. Social innovation in small schools consisting in 4 elements are 1) change by social; 2) product of concrete; 3) means of creative; and 4) support the participation of the society. The process of creating social innovation has 4 stages: 1) analysis of the need and problem of the society; 2) the

development of solutions to the problem and need of society; 3) to evaluate the effectiveness; and 4) increasing the level of efficiency of the social innovation. The process of leading social innovation includes: 1) change ideas and build special strategy wisely; 2) actions to accelerate the success; 3) to raise the innovation with the exchange extensively. At the same time with the development and change the system of social innovation better. Although process of social innovation is different among area, some common steps can be extracted. The research also found that social innovation changes overtime. At least four forms of social innovation can be identified along the process of social innovation. social innovation process is a pattern of procedures and actions that relate to the creation phase, integrations phase, and expansion phase of social innovation. Social innovation is evolvable. It is in the abstract form when it first emerges. If the key conditions are provided, social innovation will change gradually to be more concrete form. After achieving the highest concrete form, social innovation tends to transform to be in an abstract form again. Most social innovation depends largely on people's actions. Put another way, steps in changing social innovation from the most abstract to the most concrete is social innovation process. This research could contribute to a better understanding of social innovation, and could be a solid base either for practicing or for researching this subject in the future.

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South Korean University Students' Views of Mobile-Assisted Language Learning

Andrea Rakushin LEE

*Department of English Language and Culture
Konkuk University Glocal Campus
South Korea
andrea1216@kku.ac.kr*

ABSTRACT

This case study examines South Korean university students' views of the advantages and disadvantages of three popular smartphone apps, Memrise, Duolingo, and Busuu, which aim to improve language proficiency. These three particular apps were chosen based on their popularity and high ratings. Prior to the students choosing an app, the instructor discussed the primary features of each app so that students could choose one that seemed most beneficial to them. Participants included 45 students studying in two English communication classes at a private university in South Korea. Data consisted of an online discussion forum, class discussions, and three focus groups. Students were required to download one app, use it for at least 2 hours, and discuss how they used it as well as their perceptions of the advantages and disadvantages of the app. Overall, students reported being satisfied with the apps, and most expressed interest in using them again. However, they also expanded on disadvantages that frustrated them and decreased their motivation to want to continue using the apps. Students also provided recommendations for how to improve the apps to make them more effective for learning English.

INTRODUCTION

Mobile-assisted language learning (MALL) is becoming a common method for English language learners to practically and efficiently improve their language proficiency. According to Niño (2015) MALL is an “approach to language learning that is enhanced through the use of a handheld device or mobile technology, such as pocket electronic dictionaries, e-books, personal digital assistants (PDAs) MP3 players, and most recently, ultra portable tablet PCs and smartphones” (p. 75). MALL began in the 1980s through telephone feedback sessions for language learners. By the 1990s, telephones were used more extensively for distance education classes. Since the dawn of the 21st century, MALL has vastly improved through myriad technological developments. As handheld device technology advances, it is important to capitalize on the benefits that can be used to increase language skills. Furthermore, in a world that largely demands speed and efficiency, MALL is critical for many learners who desire flexible and effective methods to study language. Additionally, some learners seek nonconventional methods to study language which may seem more enjoyable and less rigid in comparison to traditional forms of studying.

Smartphones are a primary tool for MALL since many people have quick and easy access to them. Through smartphones, people can “surf the Internet, receive and send e-mail, take and edit pictures, or shoot short video clips. Most importantly, users can select, install, and use applications in smartphones” (Yang, 2012, p. 300). According to Poushter (2016), South Korea ranks number one in the world in terms of smartphone use with an estimated 88% of the population using them. Lee (2016) surveyed South Korean young adults from the ages of 18-24 and reported that 100% were using smartphones; additionally, people spend a significant amount of time using smartphones. Therefore, educational applications or apps can be a valuable and practical way to improve English language acquisition.

It is important to learn more about the perceived needs of students to help improve their English communication skills (Niño, 2015). Studies (Chu, 2011; H.-S. Kim, 2014; Kim & Kwon, 2012; Kim & Lee, 2016; Kim, Rueckert, Kim, & Seo, 2013; Ko, 2016; Kwon, 2011) have been conducted in South Korea on the use of smartphone apps to improve English language skills; however, it is important to gain more insight into students' perceptions of the apps. There are also limited studies on South Korean students' views of international smartphone apps that do not specifically target Korean users. Furthermore, as technology advances, it is vital to have current research on students' perceptions since technological tools and resources can quickly become obsolete. Finally, more studies in the English language are needed to aid native English speaking instructors in South Korea who are not conversant in Korean and want to gain more insight into the learning needs of their students.

The purpose of this case study is to explore South Korean university students' views of the advantages and disadvantages of three smartphone apps, Memrise, Duolingo, and Busuu, which focus on language development. These apps were chosen based on their ratings and popularity. By examining the advantages and disadvantages of

apps, students and instructors can make more informed decisions and choose an app that is most suitable for achieving learning objectives. South Korea is known for being a fast paced society, and students may not always have ample time to study English through traditional methods. Smartphone apps that focus on English language development can be a convenient and effective way for students to improve their language proficiency. Many South Korean students also do not have enough English language practice outside of the classroom; therefore, MALL can provide additional learning opportunities for students.. The following research questions were used to guide the study:

1. What are South Korean university students' views of the advantages of Memrise, Duolingo, and Busuu?
2. What are South Korean university students' views of the disadvantages of Memrise, Duolingo, and Busuu?
3. What recommendations do South Korean university students have to improve the applications to make them more effective for learning English?

LITERATURE REVIEW

Mobile-Assisted Language Learning

MALL can be used to develop various language skills (Chinnery, 2006; Kang & Kim, 2007; Kukulska-Hulme, 2009; Thornton & Houser, 2005) and also improve students' independent and group learning (Al Aamri, 2011). Students have also reported perceived benefits of MALL (H.-S. Kim, 2011; Nash, 2007; Sharples, 2000). Research has highlighted numerous benefits of MALL based on quantifiable language acquisition improvement; moreover, students have indicated that MALL helped them to develop better language skills. Mobile learning has also increased among students in various countries who are trying to improve their English language proficiency (Abozandah, 2015). As time progresses, MALL technology rapidly improves leading to better capabilities and educational features (Yang, 2012). There are myriad ways to implement MALL activities in language learning contexts. One of the primary benefits of MALL is that learners have the convenience of studying at various times (Miangah & Nezarat, 2012), and mobile devices can be used in most locations (Ko, 2016; Niño, 2015). Kukulska-Hulme (2006) identified several major benefits of MALL which include collaborative practice of the language, quick access, personalized activities, social engagement, and contextual learning based on specific activities. Convenience and practicality have been emphasized in research studies on MALL (Anaraki, 2009; Deng & Shao, 2011). Research has emphasized various benefits of MALL that aid in attaining foreign language proficiency.

Other research studies also highlight the benefits of MALL for language development. Thornton and Houser (2005) studied the use of MALL in English as a Foreign Language (EFL) classes in Japan by examining email correspondence on smartphones, participation in timed vocabulary activities, and the use of video functions to explain idioms. Students indicated that MALL is an effective way to improve English language proficiency. Kiernan and Aizawa (2004) examined the use of MALL with university freshman in an EFL course and also noted that MALL can be an beneficial way for students to increase their English language skills. There can be drawbacks to using MALL though including the cost of using the Internet; additionally, the size of the screen and keypad are typically small (Ko, 2016). Of course, students also may not be satisfied with their learning experience, and language acquisition goals may not be attained through MALL activities. Nevertheless, Abozandah (2015) states, "In general, the effectiveness of these technologies is often times significantly underestimated and there is still a great potential behind mobile learning technologies which is yet to be realized within the classroom" (p. 649). Through technological improvements as well as scholarly and market based research, potential drawbacks of MALL can decrease over time leading to improved language learning experiences.

Smartphone Apps for Language Learning

There are various forms of mobile technology, but the most commonly used for language learning is smartphones (Ko, 2016). Niño (2015) examined students' views of MALL in a foreign language context, not limited to English, and found many benefits to MALL; however, students highlighted that smartphone apps do not include enough speaking and writing activities. Students emphasized that smartphone apps are helpful because they are convenient, include "authentic resources," and "provide fun and interactive progression" (Niño, 2015, p. 83). In terms of smartphone apps, students reported being pleased the most with vocabulary activities (Chen & Chung, 2008; Liu & Jackson, 2008; Stockwell, 2007; Thornton & Houser, 2005) followed by reading, writing, grammar, and translation activities (Steel, 2012). However, there are barriers that need to be addressed to improve the user's experience including reducing repetitiveness of activities which may decrease motivation, especially with free versions of apps, and some of the vocabulary may not be commonly used in authentic situations (Niño, 2015). Although there are

reported disadvantages of using smartphone apps to improve language acquisition, research clearly describes positive experiences that students have had while engaging in language learning activities through the apps.

In South Korea, smartphone apps are becoming a popular way for individuals to improve their English proficiency (H.-S. Kim, 2011). Apps for English language learners generally include a wide range of topics that allow users to participate in specific tasks or activities (Yang, 2012). Yang (2012) evaluated five popular smartphone apps and found that vocabulary was limited, and more activities were needed to help students use previously learned materials. Ko (2016) studied the effects of mobile apps on English listening anxiety and reported that students were pleased overall with their experience using the apps; nonetheless, some reported that they did not like the lack of interaction. Research (e.g. Kim & Kwon, 2012; Ko, 2016) also shows that there is a lack of social interaction activities on smartphone apps geared toward language acquisition. It is essential to include learning activities that give students an opportunity to engage with others to effectively practice the language. H.-S. Kim (2014) studied the effects of using mobile devices in blended learning for English reading comprehension and found that students generally had positive views of MALL. H.-S. Kim's (2014) study used KakaoTalk, which is an interactive messaging system that is very popular for everyday communication among the South Korean populace. Students were assigned English related tasks while using KakaoTalk. Although there were some drawbacks including the inconvenience of typing and the small screen size, students enjoyed the communication practice with peers in English and the convenience of being able to practice anytime and anywhere. O (2014) examined South Korean students' views of MALL in a study which focused on a popular South Korean app called Naver Band. Participants chatted with other classmates in an online community and reported mostly positive views of their experiences. Research on the use of apps in South Korea generally highlights positive experiences and outcomes, especially considering the convenience of apps for language learning. However, disadvantages were also reported and should be considered when implementing smartphone app activities in English language classes to ensure that students' learning needs are met.

METHODOLOGY

This research employed a case study design since the research was limited to two classes at a single university. Gall, Gall, and Borg (2003) define a case study as "the in-depth study of instances of a phenomenon in its natural context and from the perspective of the participants" (p. 436). Various forms of data can be collected in case studies including records, interviews, observations, documents, and artifacts (Yin, 2003). The researcher strove to develop a detailed description of the case based on the data collected (Gall, Gall, & Borg, 2003). Furthermore, the researcher chose a qualitative design to give participants a voice to share their views (Creswell, 2007) about the advantages and disadvantages of each app and to provide recommendations for how the apps can be improved.

PARTICIPANTS AND SETTING

Participants included 45 students studying at a private university in Chungbuk, South Korea during the fall semester of 2016. Purposeful and convenience sampling were used to obtain participants (Creswell, 2007). Most of the students were freshmen and were majoring in English. Students were enrolled in two English communication classes (class one, n=17, class two, n=28) which focused on speaking, listening, reading, and writing development. Students also completed online activities (through the Canvas Learning Management System) including discussion forums where they posted their thoughts about various topics assigned by the instructor. The two face-to-face classes were combined to create one online classroom in which students participated in discussion forums. For this study, participants were assigned a pseudonym to protect their identities. Additional details about the participants (including which online discussion group they participated in and focus group participants were identified) can be found in Appendix A. The instructor, who is also the researcher, is an American citizen. She first began teaching in South Korea in 2006. She has experience teaching face-to-face, blended, and fully online classes.

DATA COLLECTION

Data consisted of an online discussion forum, class discussions, and three focus groups. Students were required to download one app, use it for at least 2 hours, and discuss how they used it as well as their perceptions of the advantages and disadvantages of the app. Prior to the students choosing an app, the instructor discussed the primary features of each app so that students could choose the one that seemed most beneficial to them. The following questions were asked in the online discussion forum and class discussions. These questions were also used to guide the focus groups, but follow-up questions were asked to learn more about the students' views of the apps.

1. Which app did you choose?
2. What activities did you do?
3. What do you like about the app?
4. What do you dislike about the app?
5. What recommendations do you have to make the app better for learning English?
6. Will you continue using the app? If so, how often do you plan to use it and for how many minutes/hours per day or week?
7. Have you used any other apps to learn English? If so, what did you think about them (good or bad points)?

For the online discussion forum, students wrote 150 words or more about their perceptions of the app that they had chosen. Most students had written significantly more. Students were randomly (through a feature in the Canvas Learning Management System) divided into five groups. By dividing students into groups, there could potentially be more variation in answers, and students were less likely to not repeat or adapt their classmates' responses. The discussion forum activities were open for a month, giving students ample time to complete the task of using an app, write their responses to the questions, and reply to three classmates. Additional data was obtained through the responses to classmates. The class discussions were carried out as two large focus groups in each of the face-to-face classes. Each class discussion lasted about 20 minutes, but prior to each class discussion, students were given the questions to discuss in small groups. This gave them time to consider each question more deeply. The instructor took detailed notes about the students' perspectives during the discussions. There were also three focus groups (one group for each of the apps). There were five participants in the Memrise group, five in the Duolingo group, and three in the Busuu group. The focus groups lasted about 30 minutes each, and detailed notes were taken.

Data Analysis

According to Creswell (2007), in case studies "analysis consists of making a detailed description of the case and its setting" (p. 163). Categorical analysis and aggregation were used to develop key themes from the data (Stake, 1995). After examining the patterns and key themes and concepts that emerged, the researcher strove to develop primary codes. Codes represent common patterns and themes from the data. However, the results also include student responses that were not frequently discussed among participants to get a more complete understanding of the case. An additional coder was used to better ensure that the results provide a holistic and accurate understanding of the case. Moreover, the researcher reviewed the results over the course of several months to confirm that the reported findings were accurate and clearly conveyed the students' perspectives.

RESULTS

Qualitative results of the data are presented in the following order: students' views of Busuu, students' views of Memrise, and students' views of Duolingo. Additional information about the participants, the apps that they chose, the activities that they completed, whether they plan to continue using the app, and if they have used other apps to learn English is included in Appendix A (Tables 1-5). Students' original words are included in the results. Since the students are non-native English speakers, grammar mistakes are commonly found. The researcher thought it was important to preserve the original words of the students though. There were 5 Busuu users, 19 Memrise users, and 21 Duolingo users.

Students' Views of Busuu

According to the students who used Busuu, the primary advantages include having realistic activities, antonym and synonym activities, effective listening activities, the ability to learn other languages, being able to learn English easily, and providing different language proficiency levels. Julia highlighted the overall advantages of Busuu by stating,

The application includes various activities and English conversation phrases. It is helpful in learning English easily and interestingly. The best thing is that there are many questions stage by stage. I could know my English level by solving the problems. Listening to the English conversations was good for speaking exact English pronunciations. Also, I could feel achievement as passing levels.

Of the students who used Busuu, none discussed the same advantages with the exception of being able to learn other languages besides English. Each student provided different examples of advantages, and none were identical.

Based on student responses, the primary disadvantages of Busuu include that some of the activities were hard to complete because the speaking was too fast. In addition, the cost of the app was expensive if they wanted to do

activities beyond what is available at no cost. Other disadvantages were highlighted as well. Three students mentioned the need to have an effective voice recording system so that students could determine the accuracy of their speaking and pronunciation. For example, Brooklyn stated,

If this app have speaking system, this will be good for people who want to improve their pronunciation and speaking skills. Actually I want to speak very well, however, when I meet foreigner, my mouth and tongue are frozen, so I can't speak very well.

Three students also mentioned that the app is too childish, and the activities are too basic and are best for new learners of English. Brooklyn emphasized this by stating, "The application was childish, so I thought the application is just about games at the first time, and I wouldn't really improve my English because it's too easy." Two students discussed a heavy emphasis on grammar and stated that they thought that other components of language should be covered more including speaking, listening, reading, and writing. In addition, comments were made that indicated that the grammar activities were boring. Alice expanded on this and stated, "I don't want to study the grammar even in the app because I will use the app in my free time and I want to study practical English, not just grammar." It was important for the students to participate in fun and practical activities. In comparison to the advantages, students discussed more disadvantages and in greater detail.

Students provided recommendations for ways to improve Busuu which include having more grammar activities, including fun games, exposing users to natural expressions, adding various creative elements, and incorporating phonetic symbol practice activities. Some students provided detailed recommendations. According to Jennifer, "Korean students are weak in grammar, so I would put more grammar point. In addition, students can't concentrate in study for a long time, so I would put English words games. Also, I want to add own vocabulary list." Sarah added additional information on the importance of vocabulary acquisition by stating, "I am also interested in learning new words that English speaker use. So I hope this is added." Another example provided by Brooklyn is,

Why people hesitate to learn English is that most of them think English is difficult to learn and English is a boring subject. Making a grammar game or using pictures to explain grammar is a better way to learn English. If the app has these contents, many people will use it.

Most recommendations focused on having engaging, practical, and fun ways to practice English through Busuu. Naturally, some disadvantages could also be viewed as recommendations.

Students' Views of Memrise

Students expanded on various advantages of Memrise. One commonly highlighted point that was discussed by many Memrise users is that they could learn other languages besides English. For example, students mentioned that they could learn Chinese, Japanese, French, German, and other languages that they were interested in learning. In addition, students emphasized that Memrise is beneficial because of the varying levels of difficulty. According to James, "Because all learners have different ability, they need to select the different level. Because this application separates the level, it caught my attention." Students also highlighted the recycling and repetition of vocabulary. They found it beneficial to be able to reuse vocabulary so that the words remain in their memory. Aria said, "The activities in the app are repeated, so it helps to acquire the new words. Especially, there is no time limit for answering quizzes or finishing the activity. I could slowly memorize the words." There were other advantages that were discussed but were not as common as the aforementioned examples. These additional examples of advantages include the following: that the speakers have good pronunciation, the pictures with words are interesting, various activities are provided, beginners can use the app effectively, there are a lot of topics, the translation activities are helpful, and there are good graphics.

A primary disadvantage of Memrise that was highlighted by many students in the results is that there was too much focus on vocabulary. Robert said, "There are many advantage of memorizing the common words of second language, but just memorizing them are not really helpful when we go to their cultures." In addition, students mentioned the importance of having more grammar activities. Victor stated, "Memrise doesn't provide grammar. If I am a English beginner, after learn some words, I will want to make some sentences using words I learned." Moreover, students mentioned that only one answer is accepted when they do translation activities even though there is technically more than one correct answer. Gina said, "If I translate the sentence, there are lots of ways to change the sentence, but they only accept one answer which is standard." Other mentioned disadvantages that were not highlighted as much as the previous examples include the following: the app was sometimes too easy, the professional version advertising was annoying, there should be more levels, it was a little boring at times, and it used too much phone memory.

Students provided various recommendations for how to improve Memrise. The most emphasized and discussed recommendations include having a detailed level test so that users do not waste time learning things that are too easy or difficult. In addition, students highlighted the importance of speaking activities. Dylan said, “I will improve the speaking part. Because most of student are good in writing and reading.” Ethan provided another example, “I would supplement the speaking part. To me, this app is perfect except speaking part. In real life, I think speaking is more important than just reading.” James also discussed the importance of speaking while providing a more complete understanding of his views of this app. He stated,

To study the language effectively, I think we have to use the five senses. However, I don’t have experience seeing the application that review the speaking. I recommend developer to make recording and checking system of someone’s speaking. Through this system, learners can learn pronunciation more quickly.

Students also discussed the importance of engaging with native English speakers. Robert said,

If I am the producer of the app, I would add some functions of chatting with second language people. For example, if I am Korean and I want to learn English as a second language, then I can chat with friends who are living in English cultures and want to learn Korean as a second language. In the result, we can learn the languages and make some international friends in the app.

There was also an emphasis placed on having more grammar activities that are fun since students generally learn grammar from textbooks which they said are not typically interesting or engaging. Other recommendations that were not discussed as much as the previous examples include adding learning through movie scenes, synonym activities, idiom practice, expressions for traveling, language learning tips, phonetic and phonology activities, games and more fun activities, and activities based on foreign television dramas.

Students’ Views of Duolingo

The biggest advantage of Duolingo discussed by many students is the “clean” and “good” design. Eight students discussed the effective design which made it easy to navigate and use the program. Several also said because it is more visually appealing, they naturally chose this app over others. Hannah said, “The cuty owl design makes me choose this app at first sight. I think design is very important. The app’s design makes me approach easily.” In addition, students really valued the goal setting program. According to Charles,

It is very nice app for learning various language. First, implement this app they give the selection like a daily goal and practice time notification. If I finish a daily goal I get a point, but if I do not, I lose a heart symbol. I like this specific goal selection plan.

Another emphasized point is that students could practice different parts of English (listening, speaking, learning words, making sentences, writing, etc.). Emily said, “I could learn many things that I want to learn parts like the verb, interrogative sentence, preposition, conjunction, time and date, etc. And I could repeat things so it was easier.” Students also emphasized that they could learn other languages. Students discussed myriad advantages of Duolingo. Some advantages that were discussed but were not emphasized as much as the previous examples include the following: the app provides an easy way to memorize new English words, the word arrangement activities are helpful, the matching words and meanings activities were fun, there are a variety of topics, the point system is motivating, and the speakers’ pronunciation is good and easy to understand.

Students discussed a wide range of disadvantages of Duolingo. The most emphasized disadvantages include that grammar explanations are needed even if there are just simple explanations. Students were able to practice grammar activities but could not always understand what they had learned. Students also discussed the importance of having a more detailed level testing system since the placement test seemed too basic to them. According to Liam, “First I had a level test. It’s very easy to me so I could solved very quickly and then studying very basic word and grammar, but it’s very basic... so easy to me.” Students also discussed the importance of having more difficult activities. Timothy expanded on this by stating,

The app is a great assistive tool for the novice, but hard to recommend people who are already achieved an intermediate level of language. So I suggest corpus system into this learning app to provide various types and usage of language.

As a result of having easy activities, many students stated that they felt bored at times and that it is important to have more challenging activities to stay engaged. Students also highlighted that they could learn other languages through this program but could only study them through English directions and explanations rather than their native language.

Students provided varying recommendations for how to improve Duolingo. One of the most common recommendations is to have television clips for learning natural phrases. For example, Gina said, “It is a good idea

to have short video of American TV shows. I sometimes watch British drama and American movies without subtitles. It really helps me to study English and know about their own expression and speaking.” Jennifer also said that her high school teachers recommended English movies and dramas without subtitles for learning English. She said that it helped her improve her listening skills. Other recommendations that were discussed include having more grammar activities and conversation practice for everyday life. In addition, students mentioned the following recommendations, but these were only discussed by individual students, including having more games, current event and news activities, asking questions to users around the world, providing frequently used expressions by native speakers and opportunities to talk with native speakers, and including more general speaking activities. Furthermore, students sometimes stated that there was too much repetition at times which created some boredom.

DISCUSSION

The results provide a comprehensive picture of the students’ perceptions of Busuu, Duolingo, and Memrise including results that were commonly stated as well as examples that were not highlighted as much to get a more complete understanding of the case as a whole. Students tended to be pleased overall with their experiences using the apps and could clearly expand on various advantages of each app. Due to the limited number of Busuu users, the amount of data collected was much more limited in comparison to the data collected on Memrise and Duolingo. However, even with a limited number of Busuu users, similarities in the results emerged. A primary advantage discussed by many students regardless of which app was chosen is that they could learn other languages through the app. This was an unexpected result since the study focused on the students’ views of the apps for English language learning. Perhaps some of the activities seemed too mundane or easy for the students who had already studied English for many years. Most of the students indicated during previous class activities that they were not proficient in other languages, so basic drills and activities in other languages may have been perceived as more interesting or effective for them.

Students seemed satisfied with the apps and discussed a wide range of advantages. The results of this study align with other research studies (e.g. H.-S. Kim, 2011; Nash, 2007; Sharples, 2000) that report perceived benefits of MALL. Overall, many students were pleased with vocabulary activities. This supports Chen and Chung (2008), Liu and Jackson (2008), Stockwell (2007), and Thornton and Houser’s (2005) research which reported that students were highly satisfied with vocabulary activities that they completed while using apps for language acquisition. Students who used Busuu did not highlight vocabulary as much as the Memrise and Duolingo users, but they still discussed the advantages of having antonym and synonym activities. Perhaps if there had been more Busuu users, there may have been additional responses about the benefits of vocabulary exercises. Memrise users especially focused on the advantage of being able to learn vocabulary through various activities which helped them to recall and remember new words. Duolingo users also discussed the benefit of vocabulary activities by stating that students could easily remember new words. Broader descriptions of valuable vocabulary activities were also discussed. Memrise users provided the most detailed responses about the benefits of Memrise; this could be attributed to Memrise’s emphasis on vocabulary acquisition though.

Students also discussed feeling satisfied with the apps and stated that the activities were generally engaging and fun. Various examples of advantages of each app were discussed, but it is critical to highlight commonalities in the data so that instructors can consider the most frequently mentioned advantages when choosing possible apps to use in the classroom or as homework activities. Some of the reported advantages were also seen as disadvantages to some students though. For example, although vocabulary was generally seen as a benefit, many Memrise users stated that there was too much focus on vocabulary and that the vocabulary that they learned was not used in practical ways. In addition, most students felt that their chosen app was engaging and fun, but some reported that it is important to add more interesting and fun activities to motivate the users. Furthermore, some students stated that activities were too easy, whereas others stated that the activities were an appropriate level or even too difficult. It would be helpful if instructors could provide more personalized feedback to students about suitable apps based on individual student’s levels. It is critical for apps to be an appropriate level for students. If the activities are too difficult, students may lose motivation and feel frustrated. Conversely, if the activities are too easy, students may feel bored and lose the desire to continue using the app.

Although the students discussed many positive aspects of the apps, there were clearly disadvantages that were also stressed. Furthermore, students provided recommendations for ways to improve the apps. One key point that was highlighted among users of each app is the lack of social interaction. This was also discussed by Ko (2016) and Kim and Kwon (2012) who researched South Korean students’ use of MALL. In the present study, students expressed an

interest in being able to connect with users around the world and to especially be able to talk with other native speakers. This is something that app developers could consider more to better meet the needs of language learners. Of course users would need to pay for language tutoring or personalized content, but users could connect with other app users around the world at no cost. Language exchange chat rooms could also be made available, so that students can talk with various users through voice or chatting functions. Niño (2015) also pointed out that sometimes repetitiveness of activities can cause boredom among students which was also evident in this study since students expanded on examples of repetitive activities that resulted in losing motivation and general interest in using the app. There were various disadvantages discussed, but it is important to highlight common themes that emerged which may be the most pressing problems based on the students' perceptions.

Beyond the specific disadvantages of each individual app, there were also some overall problems related to not having enough smartphone memory, using too much data or not having access to wifi, and that smartphone batteries died quickly by using the apps. Ko (2016) discussed the cost of using the Internet through data; although students did not specifically discuss data costs, they did mention using too much data or not having regular wifi access. By using too much data, they may have needed to upgrade their smartphone plan and reduce other activities that required data. Students may have reported other general advantages and disadvantages of MALL, but since this study primarily focused on three specific apps, students may have not thought about broader concepts. Broad advantages of MALL such as convenience of being able to study at any time (Miangah & Nezarat, 2012) and any place (Ko, 2016; Niño, 2015) were not described by the students; however, the research centered more on specific advantages and disadvantages of individual apps rather than broad pros and cons that could be applied to MALL in general.

CONCLUSION

This paper examines South Korean university students' views of three popular apps, Busuu, Memrise, and Duolingo, that are used for improving English proficiency. Overall, students reported being satisfied with the apps, and many stated that they will use the apps again in the future. Nevertheless, the students also discussed disadvantages and provided various recommendations for how to improve the apps. The results of this study are beneficial to English language teachers, students, smartphone app users, as well as smartphone app developers. There are many pedagogical benefits to using MALL and more specifically smartphone apps to supplement EFL and other foreign language classes. It is critical to have efficient and effective methods to study English and other languages. In South Korea in particular, students often seek practical and efficient ways to study English. Smartphone apps provide a quick and easy way to study English, and students discussed many of the benefits that these apps provide. However, it is also essential to examine disadvantages of apps more carefully to ensure that the learning needs of users are met. Just because the apps are practical and easy to access, does not necessarily mean that they help the students to improve their English. It is also critical to provide guidance and direction about appropriate apps for each student's level. Users may become frustrated if the app activities are too difficult; likewise, activities that are perceived as too easy may frustrate some users and make them feel as if they are wasting their time.

As technology evolves, there will be more sophisticated and advanced forms of mobile technology. It is important that smartphone apps include diverse activities to improve integrated language learning. A study by YBM Sisa found that about half of smartphone users in South Korea had studied English for about 30 minutes per week on their smartphone (Jeong, 2011). In a country that emphasizes the importance of English proficiency in academic settings and the job market, it is critical for individuals to improve their language skills. It is also important for instructors to share the benefits as well as drawbacks of smartphone apps to students so that they can choose an app that they perceive as most beneficial to them. MALL can be especially useful to students preparing for English language standardized examinations that can help them retain vocabulary as well as other parts of the language. Although there are some deficiencies in terms of practical activities, students can also improve their English language proficiency by regularly completing app activities. Students provided numerous recommendations for how to improve each app, and some provided similar recommendations. Although all of these recommendations may not be feasible or cost effective, certainly some of the recommendations should be considered for improving the apps to make them more suitable for learners.

There are several limitations of this research. The instructor let the students choose any one of the three apps that was of interest to them. Far more students chose Memrise and Duolingo over Busuu. In addition, the results of this study cannot be generalized. Students also may not have been able to clearly express their thoughts in English. Future research should examine instructors' perceptions of the apps with an emphasis being placed on advantages

and disadvantages. When advantages significantly outweigh disadvantages, this makes the learning more practical and effective for students who are trying to improve their English. In addition, quantitative data can be collected to obtain data that includes evaluative criteria for apps that students have used. In addition, it would be helpful to include a few more popular apps and have students test out each one for several weeks over the course of a semester. MALL is still a relatively new field, so it is critical to continue building on the body of literature and provide educators and students with more guidance on how to choose an app that best meets their learning needs.

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<Table 1>

Participant Characteristics: Discussion Group 1 (n=6 females; n=2 males): 8 Total

Memrise: n=4, Duolingo: n=4, Busuu: n=1

Focus Group Participant*

Pseudonym	Gender	Chosen App	Activities Completed	Plan to Continue Using the App	Other Apps Used for Learning English
Sarah	Female	Duolingo	-Matched words and meanings; arranged words to make correct sentences	Yes- at least 3 times per week for 30 min.	Catch It
Jennifer*	Female	Busuu	-Arranged sentences and listened to words; chose correct words	Yes- 4 days a week and for 30 min.	An English Word app
Lisa*	Female	Duolingo	-Learned words and phrases; chose words or phrases; reviewed through a test	Yes- every day for at least 30 min.	Yes- similar apps
Kelly	Female	Duolingo	-Worked on different activities to improve her level	Yes- at least 2 times per week for 1 hour	None
Gina	Female	Memrise	-Took a level test; studied plural forms, animals, and idioms	Yes- once a week	English vocabulary app
Alice*	Female	Duolingo	-Completed level test; did listening, writing, & matching sentence activities	Yes- in her free time	None
Jacob	Male	Memrise	-Did speed games	No	None
Justin*	Male	Memrise	-Learned new vocabulary	Maybe- in his free time	None
John	Male	Memrise	-Completed a beginner course; learned vocabulary	Maybe- 20 minutes a day	None

<Table 2>

Participant Characteristics: Discussion Group 2 (n=2 females; n=7 males): 9 Total

Memrise: n=3, Duolingo: n=5, Busuu: n=1

Focus Group Participant*

Participant	Gender	Chosen App	Activities Completed	Plan to Continue Using App	Other Apps Used for Learning English
Tina	Female	Duolingo	-Learned about various topics; did grammar activities	Yes- but for another language (German) not English	Learn English Grammar
James*	Male	Memrise	-Answered questions; completed reading activities	Yes- at night before going to bed	None
Kyle	Male	Memrise	-Studied basic vocabulary & pronunciation	No- too many distractions on his phone	None
Kenny*	Male	Busuu	-Answered questions; did fill in the blank vocabulary	No	Translator app
Tommy*	Male	Duolingo	-Did level testing; set daily goal; completed grammar activities	Maybe- 5-10 minutes a day	None
Andy	Male	Memrise	-Did listening & matching activities	Maybe- when he has a break or before bed	Dictionary apps
George	Male	Duolingo	-Did level testing & basic activities	Maybe- for 10 to 15 minutes a day	Duolingo (already used)
Hannah	Female	Duolingo	-Did a writing and listening test	Yes- when she commutes to school	None
Timothy	Male	Duolingo	-Studied different basic topics	Yes- when he has free time	None

<Table 3>

Participant Characteristics: Discussion Group 3 (n=4 females; n=5 males): 9 Total

Memrise: n=5, Duolingo: n=3, Busuu: n=1

Focus Group Participant*

Participant	Gender	Chosen App	Activities Completed	Plan to Continue Using App	Other Apps Used for Learning English
Mike	Male	Memrise	-Did TOEIC vocabulary practice	Yes- but for Chinese not English	Push English
Meredith	Female	Memrise	-Completed beginner English activities	Maybe- but she wants to study Japanese or Chinese instead	None
Joseph*	Male	Memrise	-Did grammar activities; learned basic greetings	No- but maybe for Chinese	None
Julia	Female	Busuu	-Did pronunciation activities; practiced everyday conversation phrases	Yes- in her free time	English proverb app
Lilly	Female	Memrise	-Learned new vocabulary words; determined word meaning	No- too limited	Global English Speaking (from Naver)
Victor	Male	Memrise	-Studied basic English vocabulary; did TOEIC vocabulary activities	Yes- for English and Japanese	Yes in high school
Cecily	Female	Duolingo	-Wrote sentences that she heard; chose the word that she heard	Yes- early in the morning by using the app's alarm function	English vocabulary app
Charles	Male	Duolingo	-Set a daily goal; practiced activities to reach the goal	No- too boring	Korean EBS (Educational Broadcasting Service) app
Jason	Male	Duolingo	-Completed grammar activities	No- prefer traditional learning	None

<Table 4>

Participant Characteristics: Discussion Group 4 (n=3 females; n=6 males): 9 Total

Memrise: n=4, Duolingo: n=5

Focus Group Participant*

Participant	Gender	Chosen App	Activities Completed	Plan to Continue Using App	Other Apps Used for Learning English
Emily	Female	Duolingo	-Completed level testing; learned basic English vocabulary and tenses	Maybe- using the alarm system	Dictionaries and translators
Robert*	Male	Memrise	-Studied vocabulary; took quizzes	Yes- but for Japanese and French	None
Stephanie*	Female	Duolingo	-Took a placement test; practiced foundational studies	Yes- for 10 minutes a day	None
David*	Male	Memrise	-Learned simple vocabulary; did review activities	Yes- 10 minutes before going to bed	Finally Speak
Liam*	Male	Duolingo	-Completed level testing; studied basic grammar and vocabulary	Yes- a few times a day for a short period	None
Benjamin	Male	Memrise	-Did vocabulary practice	No	None
Emma	Female	Memrise	-Learned new vocabulary; practiced listening	Yes- every week day	None
Ethan	Male	Duolingo	-Completed level testing; English vocabulary activities	Yes- in his spare time	None
Oliver	Male	Duolingo	-Did grammar activities	Yes- when he has nothing to do	Korean EBS (Educational Broadcasting System) app

<Table 5>

Participant Characteristics: Discussion Group 5 (n=7 females; n=2 males): 9 Total

Memrise: n=3, Duolingo: n=4, Busuu: n=2

Focus Group Participant*

Participant	Gender	Chosen App	Activities Completed	Plan to Continue Using App	Other Apps Used for Learning English
Ava	Female	Busuu	-Did vocabulary activities	No- too many other things to check on phone (distracting)	Blinkers app
Amelia	Female	Duolingo	-Did sentence correction; completed translation & pronunciation activities	Probably not (lack of motivation)	Naver Dictionary
Bethany	Female	Duolingo	-Did vocabulary activities	No (she will have too many grammar questions)	None
Brooklyn*	Female	Busuu	-Did word activities & grammar game	Yes- and for Spanish as well	None
Dylan*	Male	Memrise	-Learned new vocabulary	Yes- good for communication	None
Sebastian	Male	Duolingo	-Translated words; did speaking & picture identification activities	Yes- while commuting	None
Chloe	Female	Duolingo	-Completed vocabulary quizzes	Yes- 15 minutes per day	Mother Tongue English Listening app
Victoria*	Female	Memrise	-Solved puzzles; did translation activities	Yes- in her free time	Dictionary app
Aria	Female	Memrise	-Did vocabulary exercises; took quizzes	Yes- two activities per day	None

Sound Creation and Artistic Language Hybridization Through the Use of the Collaborative Creation System: Soundcool

Noemy BERBEL-GÓMEZ

*Universitat de les Illes Balears
Spain
noemy.berbel@uib.es*

Adolf MURILLO-RIBES

*Conselleria d'Educació, Investigació,
Cultura i Esports Generalitat Valenciana
Spain
adolfmurilloiribes@gmail.com*

Jorge SASTRE-MARTÍNEZ

*Universitat Politècnica de València
Spain
jsastrem@upv.es*

María Elena RIAÑO-GALÁN

*Universidad de Cantabria
Spain
elena.riano@unican.es*

ABSTRACT

We submit the development of a collaborative sound creation proposal made reality using the Soundcool system from its initial design phase to the scenic performance at the International Festival of Contemporary Music ENSEMS, Valencia (Spain). The "interstellar machine", a transdisciplinary piece whose linking thread is a story, is characterized by hybridization of languages and artistic fusion. It's a piece made possible by the joint work between students of Primary and Secondary Education, a group of experts and musical educators. From a qualitative approach, all the participants were interviewed and the analysis of an audiovisual recorded during the work process of the artistic proposal was carried out. From using data triangulation, the results obtained show indicators related to the hybridization of contemporary art languages, the use of a collaborative didactic methodology and the strategies developed for innovation and creation. The conclusions we came to just confirm a horizontal and participative way of working throughout the proposal, the success of the system used, the interconnection of artistic languages, the promotion of bridges in and outside the classroom or the approach of contemporary music to young people, among others. In addition, it focuses on some aspects of improving teaching technique and the need to continue working on this line.

Keywords: education, improvisation, contemporary music, creativity, video creation, multidisciplinary, Soundcool, art, technology

INTRODUCTION

Musical creation has been socially underrated and we have not fully understood its important role in transforming our society. In our experience as educators and music researchers, it's commonly forgotten - we forget - that the true protagonists of learning are the students. How many times do we place our students in front of musical works, eliminating the possibility of discovering them, recreating them and why not, creating them? How can we expect that by distancing them from their own sound stories will they discover by themselves, as if by magic, the beauty that these contain? Working in this field has led us to generate a type of spectator with a mind unprepared for the new, the adventure of discovering the hidden connections that enclose the works. It is a formalist vision, with a clear absence of rich experiences, which falls on deaf ears since the created connections are, in most cases, too weak to form students that are sensitive to music. It's in our hands to train future creators and, above all, citizens with good judgment and sensitivity who will live in those spaces where music happens. That is why, in the musical area, in all of its educational fields, we have to take new approaches that show us their full potential, placing students at the center of learning and not just as a mere curricular imposition. Likewise, learning music/art and exercising the creativity opens the mind to new possibilities in other disciplines such as mathematics, physics or engineering.

The "how" above the "what"

Addressing sound as an element of exploration and experimentation allows us to delve into other ways of teaching and learning music. It is the actions and the creative processes what should allow us to reorder the curriculum giving priority to "how they learn" over "what they learn", the latter more oriented to the content of the subject.

The prescriptive character of the Spanish legislative curriculum can not be a liability for the artistic development of young people, and we have the obligation to look for alternatives that will ease the development of their creativity and imagination. As Egan (2008) states:

The impoverished empiricist view of science has squandered its authority to promote in education a type of logical thinking restricted to the forms of thought that appear most clearly to us in children's creative activities. The popularity of this point of view has served to classify the imagination as a "marginal way" of education, with the "adornments of art", music, etc. (p.33)

Using sound as a raw material, disconnected from previous connotations allows us, through the action of students, to establish and build links from their own sonorous experiences and from this stage, make new connections with the musical legacy, creating in the students the habit of feeding their creativity through a "practical necessity" to continue, thus learning in a natural way.

The student, central axis in the processes of creation

From this perspective, we seek to implement strategies that treat our students as creators or co-creators and, with this, to offer new routes using sound creation as the backbone of the curriculum, offering them tools needed to develop their creative capacities.

The pedagogical approach that we defend here contemplates students as active agents, participants, engaged, curious, imaginative and creative, gears that place them before the culture as a permanent, and necessarily collective, a construction where new discourses are woven through interactions Between equals.

By placing students at the center of creative processes we open up a whole range of possibilities for making their learning experience creative and imaginative. The students are the ones who demand, each at their own pace, new learning, built from a practice with a sense of itself.

It is undoubtedly in this type of open creative processes where we generate rhizomatic relations (Deleuze and Guattari, 1977), since they allow to weave and to debate the old and new discourses on the music, giving it sense through the consensus, Through multiple sound narratives that unfold in the interior of all complex creative action.

Viewing every student as an artist, but also, that they view themselves as such, implies assuming a new role within the musical practices generated in the classroom. A role that implies greater responsibility, risk, collaboration, flexibility, resistance to uncertainty, critical reflection ... that leads us to generate a citizen with a wide cultural and artistic competence with a greater chance of developing themselves in a world that's constantly changing and in which we already live And all of this defining art as "A way of thinking, of acquiring and expanding knowledge and that its greatest utility is not to place pieces in a museum, but to help use the imagination." (Camnitzer, 2017: 20).

From classroom to LAB: sound incubators and hybrid territories

According to what we stated above, we believe that the workflows generated in a traditional classroom can not be compared with those that arise when spaces are designed as laboratories with the purpose to experiment. Therefore, we have created the first LAB, a space called MUSICLAB CR-209 in the IES Arabista Ribera, Carcaixent (Valencia). It is the first public secondary education center of the Spanish State, with two laboratories conceived as maker spaces designed entirely to ease musical creation and which has become a reference at a national level.

The LAB seeks the involvement and autonomy of students, who learn by doing, browsing, managing their times and resources in favour of the assigned collective work which is part of a whole, that is the project. It is a place where we encourage initiative and creativity, and where every student brings puts their own ideas and skills to use. Not everyone should do the same, each person freely decides on which part they can be of better use or on which they could add more to their knowledge (Gardner, 2000). The purpose of the distribution of work is to ensure more horizontal and collaborative practices where the "expert" - this could be the most experienced student - can help the others. It introduces, then, the figure of the student-tutor or mentor, able to make others learn from how he recalls he learned. The space of the teacher disappears in favour of the horizontality of the relations that will deepen co-participation and equality between teacher and students. The teacher can guide when it is required, help, participate, observe, share... Here what must prevail is that respect won is and not imposed, auctoritas against authority.



Figure 1: Students working next to experts in the LAB CR-209 in the IES Arabista Ribera - Carcaixent (València).

As a result, the LABs are conceived as incubators of ideas where the practices and projects that are developed in their interior are intended to be shown beyond the classroom. We need to pass through the walls and transcend the classroom to turn each project into an open window that allows us to share with society the art that teenagers themselves can create; or, to win the public's attention, to be themselves, in a future, a more critical and participative public, contributing with key ideas for a real construction of the culture and therefore assuming the important implications of this type of collective actions, in favour of transforming into a more democratic and modern society, a society of greater quality.

Over time, the LAB has boosted the flow of artists and creators who, from their particular vision of musical creation, have collaborated in the production of projects that have served mainly to provide a fresh vision of the musical world from real experiences and contexts. This type of collaboration brings students closer to a more realistic view of a musician's profession and, above all, helps to integrate new possibilities ranging from the assimilation of new musical styles, composition techniques, group work, event management and marketing to staging and performative elements. Along the way, we are shown multiple connections to the sound that unfold in all directions, connecting different areas of knowledge, using musical creation as a cross-cutting axis to all of them.

A renewed educational view through artistic projects

Placing the student as the protagonist of their learning and offering them the opportunity to create and experiment

from a methodology based on project learning is a real challenge for teachers and students, since it involves setting up itineraries or creative routes (Vergara, 2015). Learning is understood as a process of exploration and research, where open minds are a must to organize and build using the information that is collected along the way and that is filtered through our experiences and personal and collective lessons. In the end, this type of approach gives an extraordinary character to the processes, treating them as elements of vital importance in the learning, beyond the final results they generate/lead to.

According to this methodology, each project, sometimes premeditated, other times by pure serendipity, is created with a cross-sectional view that attends a multi-sensorial and multi-expressive education, like the one that can be found easily in art teaching. Searching, finding, paying attentions to these twists or possibilities of connection does not lead us to dilute the area of music into a sort of "auxiliary area, instead, it is reinforced, as a powerful tool with the capacity to transform society. We are therefore in agreement with Eisner (2002) when he states that "we do not contribute anything to the arts when we try to justify/measure them in terms of their contributions to other fields and relegate it to a merely" auxiliary "subject in relation to other areas of the curriculum. When giving priority to these contributions, the arts are put at the service of purposes that are not distinctively artistic, and in the process lower the value of their unique contributions to the education of young people "(p.146).

As the musicians and educators we are, we defend the idea of offering strategies and tools that give a more renewed and horizontal view of musical learning. In this proposal described below, we immerse the students in a true process of sound creation forming a network together with creators, pedagogues, and experts who work hand in hand to achieve a global artistic project.

DESIGN OF THE INVESTIGATION

Context

The context in which this study is framed is directly related to the premiere of the piece "The interstellar machine". This project brings us a contemporary artistic experience within the program of the contemporary music festival X-ENSEMS, held at the Palau de les Arts in Valencia (Spain). This proposal's main objective was to bring the younger audience closer to new contemporary musical proposals. In this case, the ENSEMS festival, the oldest one in Spain, designed a new space: X_ENSEMS to facilitate a program intended for the younger audience. Improvisation, creation, word and video creation have been the ingredients used in the première of a performative action whose tying thread is a story. Although the unifying element is the sonorous creation, this is not an obstacle for other fertile territories of the limits where disruptions are provoked and achievements that lead to coming up with new ideas and constructions related to other artistic languages.

The interstellar machine is a science-fiction story in which explorers of an advanced civilization build a machine that allows them to travel to different planets visiting their curious inhabitants, producing sounds in real time played by students Of Primary and Secondary Education, along with professional musicians.

In the design of the proposal, we sought a continuous balance between the interests of the students themselves and the growth towards new sound territories. For this to work, special attention was focused on the creation of proposals that would not limit musical styles to work, but rather, and over time, broaden the repertoire of practices and styles, favouring eclectic and plural musical experiences as much as possible.

The Interstellar Machine consists of a text narrated live, in which a lot of languages take part, where the sonorous, the visual and the gestural are intermingled. It serves as an example of hybridization and a strong commitment to the exchange of ideas and of the creation of multidisciplinary contexts that facilitate artistic innovation.

The formation/stage is set up by an orchestra of 41 mobile devices, managed by the real-time collaborative sound creation system, Soundcool. It is a tool to work on music education using technology such as mobile phones, tablets

or Kinect, developed by the Universitat Politècnica de València. It is an open and free system available to everyone that makes it possible to take a creative, multidisciplinary approach that creates dialogues around the musical event. Soundcool is being used in several European countries and American universities such as the Carnegie Mellon (USA), a leading university in international music technology, and the Technological Institute of Advanced Studies in Monterrey (Mexico), a leading player in technologies used in art and design internationally.

Soundcool uses the connectivity of mobile devices so they become controllers that allow real-time manipulation of sound. These mobile devices use the Open Sound Control (OSC) protocol and a simple and attractive interface to connect to a central computer through a wifi signal sending the data through an IP address and a different port for each mobile device.



Figure 2: The premiere of The Interstellar Machine in the Palau de les Arts - València.

The result is that every phone or tablet becomes a powerful musical instrument with the ability to control sounds (WAV, AIF, MP3, VST (Virtual Studio Technology), instruments and input effects. Furthermore, it offers creative combinations of digital and analogue sound of any sound source external to the system. Therefore, Soundcool has the ability to integrate the traditional classics with the most advanced technology in music.



Figure 3: Pupils making use of the Soundcool system through their own mobile devices.

The use of this system has been completed by improvising with a sax played by musician Josep Lluís Galiana, who also directed the orchestra, and a piano "soundcool-prepared" played by the teachers Noemy Berbel and María Elena Riaño. The gestures that the narrator of the text, Sergi Moyano (secondary education pupil) made, were modified in real time by the video creator Stefano Scarani through the Macchina Peformativa 10. The technical team consisted of the sound technician Giannino Clemente and Àlex Moreno Garzó, a graphic and audiovisual documenter. The director of the whole project was Adolf Murillo, who also took care of the educational part of Soundcool.

Hypothesis and objectives

We consider two starting hypotheses:

Hypothesis 1: Proposals in which there is a hybridization of artistic languages from a contemporary, collaborative and creative vision facilitate the approach of a young and neophyte audience to this type of music.

Hypothesis 2: Soundcool is a tool that reinforces the hybridization of artistic languages facilitating the participation of young people.

From these we raise the following objectives in the study:

- To know and analyse to what extent these types of hybrid proposals can facilitate a greater acceptance of contemporary music to the young and neophyte public.
- To analyse what elements of contemporary language are reinforced through the development of proposals of this type.
- Analyze if the Soundcool system of collaborative creation facilitates the connection between the different languages that come into play in the proposal.
- To inquire about the strategies carried out during the work process of the proposal.
- Propose new strategies that allow us to continue creating proposals that will help us achieve these objectives.

Method

We took a qualitative approach. We used triangulation as a research strategy, as a control procedure and to ensure the reliability of the results (Denzin, 1970). Among the different types proposed by the authors, we have chosen the

triangulation of data, the one that derived from the categorization process, to perform the analysis, obtain the results and finally, draw conclusions. In this case, the data from the three groups of informants allowed us to better understand the reality studied.

Participants

The participants' sample was formed by three distinct groups: students, group of experts, and teachers specialized in musical education.

When selecting students, we only targeted a specific group. We only asked students who had previous experience with Soundcool. It was necessary for the students to know how to use the tool in order to spend time teaching the processes of musical creation. The sample was made up of 25 ten-year-old students who attended 5th-grade Primary School in the CEIP school Carmelo Ripoll (Ontinyent-València) and 16 students aged 15-16 attending 3rd and 4th of Secondary Education and coming from the Secondary Education Institute "Arabista Ribera", Valencia (Spain).

With regard to the group of experts, a sampling was used that Llorente (2008) calls opinionated and determined by the choice of subjects that are important sources of information to dominate the theme approached. It counted on the collaboration of Josep Lluís Galiana, saxophonist musician, an expert in free improvisation and Stefano Scarani, an expert in electronic music and video creation. Both had had previous experiences as creators with children and young people.

Likewise, the third group, formed by the first three authors of the present article, professors specialized in Music Education, Creativity and Technology, was key to successfully carry out the study. Coming from the Universities of Cantabria, the University of the Balearic Islands and the Ministry of Education of the Autonomous Community of Valencia which offered complementary profiles in a form of teamwork.

Instruments

Two instruments were used for data collection:

1. Interviews. We gathered information about the opinions, descriptions and interpretations of the situations lived by the participants. Through the interviews conducted, it was possible to know the perspective of students and experts on the strategies developed throughout the work process in the proposal made. Two individual semi-structured interviews were conducted to each of the experts and a group interview with the students. We recorded all of the interviews.
2. Documentary analysis of the "*Making of*"¹. This audiovisual, recorded during the work process of the artistic proposal, has been an essential instrument as it gathers the voices of all the protagonists. A way of monitoring the study very closely and contributing relevant data to it.

Procedure and phases of work

According to the stated objectives, we describe the process, the work prior to the premiere that tells everything that was developed during the rehearsals and the performative experience during the premiere of the work.

Phase 1. We focus on making changes to the ways in which we can generate creative products. A vision in which the generation of ideas by everyone would influence the final result. We believe that the greater the involvement, the greater the synergy between the involved parties, creators, teachers and students. We visited educational centers generating different workshops of sound creation through the use of Soundcool, a research project directed by the engineer and composer Jorge Sastre. For any teacher or musician interested, this system is free to download, both the computer program and the mobile applications for Android and iPhone. The Soundcool web page gives you access

¹ Making of access: <https://youtu.be/nVvm7FVM6II>

to the software itself, publications, projects, social networks, etc., as well as information on projects, tutorials, etc. Soundcool is a system consisting of a series of modules such as players, real-time microphone sound input, sound effects, virtual instruments, mixers, etc. Which can be interconnected and operating on a Mac or PC. The various modules can be controlled via wifi with mobiles and tablets, facilitating the collaborative creation, and also with the Xbox Kinect video game interface. The text of the story in Catalan was presented, which worked as a creative trigger and catalyst for the first ideas and contributions that were emerging. In the workshops, a sonorous experiment was carried out to build a sound bank used in the final piece, as well as improvisation techniques and management of the Soundcool collaborative creation system.

Phase 2. A session was held with the conductor of the work, the improviser Galiana, and was oriented to the stage set up and the assembly of the different parts of the story. The main idea was to seek the coherence and a global vision of the work by the participating students and to generate knowledge flows between them. The students, at all times, were not viewed as mere content consumers, but as authentic agents of action and protagonists in this construction process. Dialogues, trial-error, doubts, decision-making were some of the issues that emerged at this stage.

Phase 3. The third phase, performative, was developed outside the classroom, in the Palau de les Arts and was divided into two parts. In a first part, the audience could watch the making of the whole process (which had been recorded and edited during phases 1 and 2). Then the concert began and the students, as musicians, went on to the stage to play, create, and offer an experience that was gratifying, exciting and, above all, meaningful.

Phase 4. The interviews were conducted. Each of them, the individual ones as well as the group interviews were made explaining previously the purpose established for this investigation even though all the participants had lived the artistic experience first hand.

The topics or around which the questions were directed at all the participants (experts and students) were:

- The experience as creators in the artistic proposal realized.
- Strategies developed during the work process
- Using Soundcool as a collaborative Tool
- Implications with contemporary music

RESULTS

Each of the interviews was transcribed and read individually by the researchers, and then a joint reflection had place. Using the initially given dimensions, in each transcript units of meaning (words, phrases) emerged, which were later grouped into the following three categories:

- Hybridization of contemporary artistic languages
- Collaborative didactic methodology
- Innovation and creation

On the other hand, the comments and observations gathered through the audiovisual "Making of" are fundamental elements of analysis because we believe that by the documenting the work sessions through the perspective of the involved, we can observe fundamental aspects of the learning processes, in this case, in an approximation to the contemporary musical fact.

The main results are presented through a series of tables which include the categories, main indicators and selected fragments:

Table 1: Category: Hybridization of Contemporary Artistic Languages

INDICATORS	FRAGMENT
Fusión of Styles	<i>No contemporary artist, whatever the field may be, can understand creativity without hybridization, participation, interdisciplinarity, heuristics (and there was a lot of this throughout the process), empathy, game, adaptation, exploration, pursuit, interaction, coherence, dialogue with reality, discipline, respect for each other, commitment, honesty, ethics, sincerity, solidarity, generosity ... (Ex).</i>
Links between the school and society	<i>It's a global experience and not a fragmented one (Ed).</i>
Interdisciplinarity	<i>An element of contemporaneity very widespread today is the mix of different styles: contemporary music tends to involve popular music, old music, rock, etc. This freedom, together with the use of multi-instrumental digital tools, allows us to create an important bridge between the personal sphere of each student and what we consider to be academic, presenting an important attractive element of union instead of the classic separation between real life and school (Ex).</i> <i>This interdisciplinarity, to put in the same plane so many activities and tasks, is what I found extremely interesting (Ex).</i> <i>We used the story as a creative detonator because normally, when we, the creators, the musicians, try to make any kind of music the suggestions can come to us by any element or field. As single sound can be a creative element that allows ideas to start a path. A lot of the times it will be through texts and in this case it will be the story that offers us a narrative, as a kind of path, in which we mess with the sound (Ed).</i>

Table 2: Category: Collaborative Didactic Methodology

INDICATORS	FRAGMENT
Shared processes	<i>The experience of total creation, the shared and participatory process, bringing all that to the younger ones is what I liked the most (Ex).</i> <i>They helped us, the older ones. We added the missing sounds (St).</i> <i>We were also there, thanking the two technicians for helping us and it was good to learn technology (St).</i> <i>There was no need to play one alone. It sounded better together. And the applause at the start really motivated us (St).</i> <i>A clear concept that has remained of all this intense and profitable creative process and is that the youngest have discovered that music is many more things than just sound, that all languages are like communicating channels and that, therefore, can be poured into one another. Finally and most importantly, that contemporary creative processes can only be tremendously collaborative (Ex).</i>
Encouraging interpersonal relationships	<i>It has brought us new friendships and we have all gathered to do our best (St).</i>
Gusto por la experiencia	<i>It was a unique experience and I'd like to repeat it (St).</i>
Grupal responsibility	<i>Something important that I learned is that patience is key while rehearsing and performing in a concert. There you learn that you have to wait for your turn to play (St).</i>
Personal autonomy	<i>The important part is that they themselves are understanding that their role is fundamental but they are also listening to the role of others. There is an enrichment, beyond the artistic part and to learn a series of competences that are going to be necessary to them as well (Ed).</i>
Responsibility	
Stepping outside the comfort zone	

	<i>The key element in this didactic methodology is the responsibilities we give to the student, who is involved in the completion of a product that will be presented to the public. They leave the protected environment of the classroom to prove themselves able to do a "real" job; it is the best way to hold a person accountable (Ex).</i>
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Table 3: Category: Innovation and Creation Using Soundcool

INDICATORS	FRAGMENT
Technologic innovation	<i>Using contemporary languages in the project creates bridges between artistic languages and academic languages, especially if electronic media is used together with the more traditional media (Ex).</i>
New instruments	<i>It has been a very nice experience since we have learned to do music with a tablet (St).</i>
Openness to other techniques	<i>With Soundcool (and other programs), we can demonstrate how the same device can serve to create rather than be used to a limited extent set by the software; with it, we can prove that we have the power in our hands, we only need to show it. This is not so clear with other more classic tools (Ex).</i>
Experimentation	<i>It's a new kind of music with "strange" sounds. My parents told me that they had never seen anything like that (St).</i> <i>We were asked to show how we controlled the sounds with our tablets (St).</i>
Improvisation	<i>We are going to improvise in real time on the images and the voice of Moyano (narrator). That means that at one point that he is speaking there should sound something related to it ... Look for adjectives to define what kind of sonority. That helps us at the time of recording: here could be pieces of music or sound rhythms, or play with the voices and from them do whatever comes up ... That is recorded, loaded into Soundcool and then played (Ed).</i>
Creation	<i>I had the feeling of playing a different sound, you could play it as you wanted, with a different speed or volume (St).</i> <i>Using the analysis of the text and the image we will improvise (Ex).</i>
Horizontal work	<i>Each of the older students had a keyboard "piano" which played different sounds. They made music on the spot, they could play several keys at once and they were the basis of everything. We were the complements (St).</i> <i>The children will be placed as the generators of the creative process and they themselves will be artists, composers and creators (Ed).</i> <i>We heard reverse palettes, free sounds, thousands of colors, dissonant sounds. We played a battery inside out, an upside down chorus and a machine that sounded like a dinosaur. Others sounded were like maracas, like firecrackers and the doors of a special ship when opened (St).</i> <i>Then there was Mr. Galiana, he played the sax and it was interesting because he made small and big sounds (St).</i> <i>I've found it very powerful and infinite in its possibilities. Thinking of sound as the base and putting it in the center of this creative process is a great revolution, given the current educational model (Ex).</i> <i>One of the most interesting questions of the proposal with the use of Soundcool is horizontal work at the level of artists, professionals, teachers and children of different ages. We are all working on the same level and we will all make a real creation, on the spot (Ed).</i>

It should be noted that there exist other results concerning the needs we still have to cover, results from observing during the processes. We've highlighted the following ones:

The main element that could have been much more developed in this type of proposals is the implication and commitment of the students in each and every one of the parts of the creative process. Students should participate much more actively in the decision making, in the elaboration of musical, visual, literary, sonorous, dramaturgic and scenic materials. I understand that this greater involvement requires more effort and much more time and human and economic resources, but I think that this creative process is extrapolable to any other educational process and to any daily activity (Ex).

I think the next phase is to develop more Soundcool audio and video modules and ease customization of modules not only by developers, but also by student users (Ex).

DISCUSSION AND CONCLUSIONS

The results of this study show how students and professionals can immerse themselves in global artistic projects, exploring paths and strategies in which all are co-creators, in the line argued by Camnitzer (2017). They all agree that the creation during the work process and the performative act itself has been a participative, social, constructive act capable of deploying educational potential through the nexuses and interactions produced among the people, the hybridization of Languages and the possibilities that technology offers us, in this case, using the Soundcool system. This confirms the hypotheses and objectives raised in the research, corroborated by the emerging categories and evidenced by the indicators for each of them.

Thus, in each of the categories we find answers by experts, educators and students, showing a way of working as a team and developing strategies looking at creative processes in a horizontal way, where each and every one of the protagonists is a key player for the project. This type of proposal can be a fundamental factor in the transformation of artistic practices in classrooms. As Scardamalia and Bereiter (2006) affirm, teachers would be experts capable of solving open problems rather than facing changes with routines previously learned.

Likewise, both the youngest and the oldest students have experienced first hand an approach to the sound and the musical language that promotes the use of the technology that we have at our disposal. The perception after the use of Soundcool has been very positive. It is true that this is a punctual experience and the results can not be generalized, but we consider that the realization of new proposals like this one is an interesting way of working in the classrooms, since they can contribute to the acquisition of taste for a contemporary aesthetic and the formation of new young audiences. And, more importantly, to establish connections with the arts, as defended by Eisner (2002).

Through the textual analysis of the story created, both the drawings made by the students and the sounds and music recorded and later manipulated in real time through Soundcool, we have demonstrated that the literary, visual and sonorous languages can be conjugated in a hybridized way. Likewise, the processes and practices carried out during the test phases have been fundamental to the understanding of this form of multidisciplinary work and to cultivate enjoyment in the "making". We believe collaboration has been a key element for this, since it has been present while listening, consensus, participating, contributing ideas and developing other strategies, where everyone has learned from everyone.

However, in spite of the success of the proposal, the results also show some organizational, participatory, technical and resource management issues, which can be improved, and exist probably due to the lack of experiences that have to do with a continuous teaching practice, open to the new challenges related in part, by the advantage that the new learning scenarios offer us. In fact, the current curriculum doesn't promote actions that foster the development of creativity and imagination, fully in line with Egan's (2008) arguments. Researches such as that of Urrutia and Diaz (2013) point to the resistance in the educational systems of the 21st century that still prevent the use of contemporary

artistic languages. In the opinion of the aforementioned authors, the role of the musician today is different, as it's the role of the teacher and that of the students.

It's in our hands to reflect on it and dare to start our own actions or, at least, open the doors for new possibilities that exist and that have yet to be traversed. Because each one of them is a challenge and a new opportunity to live and share the music, because we know that the learning processes are favoured by cooperation between many minds, for both cognitive and emotional reasons (Johnson, Johnson, Holubec, 2008, Salomon, 1993).

By synthesizing after having carried out the study, we can conclude:

- The existence of the hybridization of artistic languages through the realization of the project.
- The opportunity to bring contemporary music to a young audience.
- A form of teamwork, horizontal, creative and innovative by experts, educators and students.
- The success of the Soundcool system as a tool for collaborative sound creation and its interconnection with other languages in a real-time staging.
- The promotion of bridges inside and outside the classroom.
- The flexibility required by the protagonists of the project during the trials, cause of the necessary adjustments during the work process.
- A greater acceptance of the contemporary artistic languages by the participating students through practical proposals and in real contexts.
- The need for greater participation in the student's' occasions in decision-making.
- The lack of time and resources that prevented us from deepening more in some aspects.

As we have seen, this type of proposal enhances critical thinking and personal development of each individual. By proposing a group project, each individual underwent a process of self-reflection that allowed them to discover their interests and find out about others. We think that the important thing in this type of proposals is not the final product, but all the connections that we discover and establish until we find a solution that is evaluated by everyone. Working holistically between different disciplines have put into play different skills and knowledge that go beyond the partisan view provided by the unidisciplinary approach. Through the proposal that describes this study we developed a type of contextualized learning from a problematic situation that was provoked in the students and the actors that intervened, a mobilization of conceptual knowledge, procedural skills, values and emotions in a completely integrated way. In order to do this, students became involved in actions such as thinking, planning and doing, but they also became emotionally involved because they are activities linked to authentic contexts that escape the challenge. As Martín (2008) explains, working with others helps us to become aware of one's own cognitive and emotional processes; At the same time, it forces us to agree to define common objectives, to seek strategies to move forward together and reach shared solutions; In short, working together helps us to set our ideas straight and be flexible with the rest of the group.

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Status and Improvement of Human Rights Education for Police in Korea

Chong, SANGWOO

Inha University

The Republic of Korea

sangwoochong@naver.com

Kang, EUNYEONG

Inha University

The Republic of Korea

sangwoochong@naver.com

Han, HWAERYEON

Inha University

The Republic of Korea

sangwoochong@naver.com

ABSTRACT

This study focuses on human rights education for police officers and police recruits in The Republic of South Korea. It is very important to educate civil servants to increase their sensitivity to the human rights of individuals they interact with because police officers have the potential to limit human rights. This study examines human rights education for police officers and police recruits, and is written in order to urge a change in human rights education for police in South Korea.

INTRODUCTION

According to the Korean act on the Performance of Duties by Police Officers, police officers shall perform the following duties: (i) Protection of people's lives, body, and property; (ii) Prevention, suppression, and investigation of crimes; (iii) Performing guard duties, guarding of important persons, and performance of counter-espionage and counter-terrorist operations; (iv) Collection, preparation, and distribution of information on public security; (v) Traffic control and traffic injury prevention; (vi) International cooperation with foreign governments and international organizations; (vii) Maintenance of public order and security. Police in Korea perform the same kinds of duties as police in other jurisdictions and can be summarized as; maintenance of the security of citizens, maintenance of community order, investigation of crimes, and upholding the law.

Due to the nature of their work, there are often cases where police impose restrictions on human rights while carrying out their duties.. Police work is paradoxical. Police protect people's freedom and rights and maintain public order in society, Yet police can violate human rights and limit people's freedom in the name of public interest. Many pre-democratization cases in Korea include violations of human rights by police.

The purpose of this study is to investigate the current state of human rights education of police officers and police recruits in Korea, and to suggest improvement. The study examines government policy since the police are an arm of the government closely related to human rights, and I expect that it will have implications for human rights education for the broader civil service.

THE NECESSITY OF HUMAN RIGHTS EDUCATION FOR POLICE

Police human rights education is needed. According to The National Human Rights Commission, 20% of human rights violation complaints are related to police cases. The results of Korea Human Rights Awareness Survey (2016) shows police are at the top of the list of professions seen as violating human rights, followed by teachers, and then other civil servants. According to the Judicial Agency Reliability Survey (2016), public trust in police is not high. (See table #1 below).

There are at least three possible situations in which the police might violate someone's human rights. First, when police resolve cases through 'investigation', without regard to human rights, then the risk of human rights violations can be increased. Second, There are also possibilities of human rights abuse in investigation (internal and external), inspection, arrest, and interrogation. Fourth Violation of human rights can also happen during policing of protests and demonstrations and fifth traffic safety maintenance.

	Trust	distrust
Court	23.4%	42.4%
Prosecution	12.7%	58.7%
Police	23.1%	37.2%

Table 1: Judicial Agency Reliability Survey(2016)

23.4% trust court and 42.4% distrust court. 12.7% trust prosecution and 58.7% distrust prosecution. 23.1% trust police and 37.2% distrust police, see [Table 1].

Principles of Criminal Procedure

Despite the legal process, as codified in law, and human rights of a suspect, the possibility of human rights violation during criminal procedure exists. Trust in the police means trust by the public in the exercise of authority by government so it leads to trust in the law (Tyler, 2001, pp. 374-377). It is important to have a plan to restore trust in the police because the subsequent trust in law increases the possibility of compliance and order maintenance. Human rights education for police is necessary and important in that the implementation of human rights-friendly police will enhance the trust of police (Tyler, 1998).

HUMAN RIGHTS EDUCATION IN DEPARTMENTS OF POLICE ADMINISTRATION

There are three ways to become an administrative police officer in Korea. First, by graduating from The Korean National Police University, then he or she can be an executive officer in The Korean National Police Agency. Second, When a student graduates from a 'Department of Police Administration' at a university, he or she can apply for special recruitment. Third, when a student graduates high school, or graduates with other majors from an university, then he or she can apply for general recruitment.

In Departments of Police Administration students need to take elective classes as well as studying courses in police science, criminal investigation, law (criminal law, Constitutional law, human rights law), fundamental rights theory, criminal procedure and human rights), public administration, and Defensive Tactics. And police ethics. Students graduate from university after taking 1–2 courses out of less than 20 required courses. Criminal law, criminal procedure law and police ethics courses contain human rights regulations content. However, human rights are neglected when education is centered on investigation procedures. Human rights education is insufficient at The Korea National Police University and in departments of police administration at other universities.

HUMAN RIGHTS EDUCATION FOR POLICE OFFICERS

Once the appointment of a police officer is confirmed, they enter the police central school as an intern for practical work before actual police work. upon completing studies at The Central Police Academy, recruits have an education that is more focused on practical police education. Constitutional law (focusing on human rights) is the only subject taught related to human rights. Furthermore, Human rights education often only occurs in one-time lectures.

At The Police Training Institute, executive police officer candidates receive education for administration and field duties. There has been criticism in the past that human rights education was neglected at this level of police training. Since 2017, the curriculum for executive police officer candidates, has expanded to include human rights training with courses such as 'understanding the victims' and 'sensitivity training'. In addition, at least 2 hours of human rights education is offered in practical courses, While field training has added more than one human rights course for each of its modules.

At individual police stations human rights education for police officers has been implemented. There has been an average 2 hours per month of human rights education (seminars, workshops) at police stations in Seoul since 2014. Between 2012 and 2014, only 4.4% of all staff at police stations received human rights training. Most of the time in-service human rights training is conducted internally. The National Human Rights Committee or other external experts should be invited to conduct professional human rights education (Cardenas, 2005).

Ultimately, there is not enough human rights education in the form of practical training after obtaining the status of police officer. Police officers do not get enough continuing human rights education and there is hardly any effort on the part of authorities to draw police officers' attention to human rights or to human rights education. Therefore, it is necessary to suggest ways to improve and encourage the human rights education of police.

IMPROVEMENT OF HUMAN RIGHTS EDUCATION FOR POLICE

1. Improvements at departments of police administration at universities

Even in courses taught on criminology, law, and administration, the focus remains on investigation. Yet police duties are divided into 20% investigation and 80% public safety. Only 20% of police work is investigation, the remaining, and 80% is focused on public safety. There is too much of an emphasis on the criminal investigation. Public Safety education should be increased. A more balanced curriculum would emphasize Constitutional law, human rights law, and police ethics. This study suggests Criminal Law and Criminal Procedure Law courses should be *human rights-friendly*. In addition to police ethics class, police human rights courses are essential.

Opening and enforcing attendance of special lectures on Human Rights Education is also necessary. There should be more experiential human rights education and online lectures need to be created. Human rights education through elective classes at universities also needs to be enhanced (Hudson, 2005, pp. 117-120). Support and funding from The National Human Rights Commission in providing human rights education could also be provided (Lapayese, 2004, pp. 168-170).

2. Improvements at the police station

There are plans to strengthen human rights education for police, announced by the new Korean government in 2017. The education should have the plans by the new Korean government in 2017 in the curriculum.

The police stations need to establish a human rights education plan at the local level. This also needs to provide structured programs instead of one-time lectures, and instructors need to invite external human rights education experts. Trained members of the police can be human rights education specialists. Appropriate training methods for police officers should be adopted (Leßmann, 2002, pp. 288-290). Online human rights education programs should be developed and operated effectively. Programs of human rights education should be developed that contain participatory and experiential elements (Levin, 2008). The National Human Rights Commission is a good place to conduct research on appropriate police human rights education methods.

CONCLUSION

I think that there are implications arising from the second phase of the World Programme for Human Rights Education of police officer. I propose the following measures: (i) Establishing a code of conduct for ensuring human rights that must be respected by police in the execution of their duties; (ii) Creation and training of police human rights regulations; (iii) Abolition of one-time lectures for human rights education and developing continuous human rights education programs; (iv) Human rights education conducted by experts; (v) Activation of online human rights education programs to expand participation; (vi) Individual record of human rights education and practices.

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Students' Game Playing Preferences And Personality Traits

Simon SO

Department of Mathematics and Information Technology

The Education University of Hong Kong

Hong Kong

swwso@eduhk.hk

ABSTRACT

This study aims to explore students' personality traits and game playing preferences at a teacher-training institute in Hong Kong. In psychology, the Big-Five personality factors have been defined as *Openness to Experience*, *Conscientiousness*, *Extraversion*, *Agreeableness*, and *Neuroticism*. These factors are widely used in the literature to measure a person's personality traits. In video gaming, players usually have preferences over different game genres. Games can be categorized into genres such as *Action*, *Strategy*, *Adventure*, *Role-playing*, *Sports*, *Simulation* and *Puzzle*. In this research, it is hypothesized that game players with certain personality traits would prefer certain types of games. The 50-item IPIP version of the Big-Five Markers was used to measure the students' personality traits ($n=160$). A questionnaire was used to measure the students' gaming preferences on the seven game genres. A quantitative analysis was used to evaluate the relationship and significances among the variates and the results are discussed. The statistically significant relationships (either positively or negatively) between personality traits and preferences on game genres were identified.

INTRODUCTION

Video games are a multi-billion business. The computer and video game market in the United States was valued at over 20 billion U.S. dollars (ESA, 2016). Computer games, console games and mobile games are played at all ages from toddlers to seniors. In higher education, students often play games with or without their peers. In the Hong Kong institute which this research was conducted, it is common to see students sitting together to play games like League of Legends (LoL).

Game playing preferences among university students may be different from the gamers in the general public. The aim of this study is to investigate the university students' gaming preferences in correlation with their personalities. It is hypothesized that there is a relationship between the personality traits based on the Five-Factor Model and the preferences on different game genres. Students enrolled in the courses taught by the author were requested to participate in this research. The following research questions were addressed in this study:

RQ1: What are the personality traits among these university students?

RQ2: What are the game types that these students find difficult to play?

RQ3: What are the game types that these students enjoy playing?

RQ4: Would there be significant correlations between game types and personality traits?

This paper is structured as follows. The Five-Factor Model (FFM) of personality traits is detailed and is followed by the discussion of game genres in the game industry. The methodology section describes the background of the participants, the two instruments, and the procedure of this research. This is followed by the quantitative analyses to answer the research questions. Some conclusive remarks and future research work are then discussed.

PERSONALITY TRAITS

Many psychologists believe that *personality* is an elusive concept (Carver & Scheier, 2012). The definition of personality can be complex. However, personality can refer to an individual's unique constellation of consistent behavioral traits (Weiten, 2010). Traits are consistent personality characteristics and long-term behaviors displayed in a person. Trait models attempt to analyze personality into its basic dimensions. *Factor analysis* is commonly used to identify general patterns from a large number of variables in personality. The Five-Factor Model (FFM) of personality traits is the most popular model used in studies related to personality traits. The five factors are *Openness to Experience*, *Conscientiousness*, *Extraversion*, *Agreeableness*, and *Neuroticism* (Emotional Stability). It is commonly referred to as "Big Five" and the factors have the mnemonic OCEAN (or

EACNO). Each of the five factors or high-order traits represents an amalgam of several lower-order traits called facets (Kowalski & Westen, 2011, p.459). These factors and the facets are briefly described below.

Openness (O)

The *Openness* dimension refers to openness of experience. The characteristics that make up this dimension include an active imagination, a willingness to consider new ideas, divergent thinking, and intellectual curiosity. People high in Openness are unconventional and independent thinkers (Burger, 2011). Innovative and creative people are generally high in this dimension. The lower-order traits include *Fantasy* (active fantasy life), *Aesthetics* (artistic interests), *Feelings* (emotionally open), *Actions* (flexible), *Ideas* (intellectual), and *Values* (unconventional) (Kowalski & Westen, 2011; McCrae & Costa, 1997).

Conscientiousness (C)

The *Conscientiousness* dimension refers to how well-organized, disciplined, punctual, and dependable people are. Conscientiousness is associated with being diligent, reliable, responsible and efficient. People who score high in conscientiousness are likely to be healthier and live longer (Friedman & Martin, 2011; Schultz & Schultz, 2012). The lower-order traits include *Competence*, *Order*, *Dutifulness*, *Achievement Striving*, *Self-discipline* and *Deliberation* (Kowalski & Westen, 2011; McCrae & Costa, 1997).

Extraversion (E)

The *Extraversion* dimension refers to the tendency to be sociable, active, fun-loving, talkative, affectionate, and willing to take risks. Attention-seeking and domineering are often perceived. Low scorers are likely to be shy, reserved, quiet, loners, passive, and lacking the ability to express strong emotion (Kowalski & Westen, 2011). There is a good deal of variation in what this trait includes. The lower-order traits include *Warmth*, *Gregariousness*, *Assertiveness*, *Activity*, *Excitement Seeking* and *Positive Emotion* (Kowalski & Westen, 2011; McCrae & Costa, 1997).

Agreeableness (A)

The *Agreeableness* dimension refers to those who tend to be warm, likeable, helpful, trusting, and sympathetic. Agreeable adults get less angry over bad outcomes. Agreeableness has been related to greater responsiveness in parenting, less negativity in marital interactions, less seeking of revenge after being harmed, greater cooperation in resolving social dilemmas over resources, and less antisocial behavior (Carver & Scheier, 2012). The lower-order traits include *Trust*, *Straightforwardness*, *Altruism*, *Compliance*, *Modesty*, and *Tenderness* (Kowalski & Westen, 2011; McCrae & Costa, 1997).

Neuroticism (N)

The *Neuroticism* dimension refers to those who tend to be nervous, emotional, insecure, worrying, and hypochondriacal (Cervone & Pervin, 2013). This dimension places people along a continuum according to their emotional stability and personal adjustment (Burger, 2011). A high level of neuroticism relates to distress in a wide variety of difficult circumstances, more difficult interactions among married partners, less satisfaction in the relationship, likely to distance themselves from their partners after a negative event, likely to impair academic performance, and even to predict earlier death (likely to smoke more) (Carver & Scheier, 2012). The lower-order traits include *Anxiety*, *Angry Hostility*, *Depression*, *Self-consciousness*, *Impulsivity*, and *Vulnerability* (Kowalski & Westen, 2011; McCrae & Costa, 1997).

GAME GENRES

The word *genre* refers to a particular class or type of an artistic venture. You can categorize games into different genres based on gameplay, atmosphere and various other factors. One must admit that definitions of the game genres are somewhat subjective and there is a lack of consensus in the game industry for a general standard of classification (Haninger & Thompson, 2004; Wolf, 2005; Smith, 2006). Furthermore, a game can be categorized into different genres. Nevertheless, the most widely used game classifying system categorizes games into seven genres: action, adventure, strategy, role-playing, simulation, sports, and puzzle (Saltzman, 2003). The seven genres are briefly described below.

Action Games

Action games rely more on hand-eye coordination. The gameplay of these games consists primarily of physical coordination challenges (Adams, 2010). These games are generally fast-paced and reflex-oriented. First-person shooter (FPS), action-adventure, combat simulation, fighting games, stealth games and some platform games are all parts of the action genre (Robin, 2010). Action games can unfold over many hours but it is difficult for gamers to sustain excitement for very long. Hence, some breaks during gameplay are often needed. Examples include *Call of Duty: Infinite Warfare*, *Battlefield*, *Grand Theft Auto V* and *Tom Clancy's The Division* as the top 10 selling video games in 2016 (ESA, 2017).

Adventure Games

Adventure games allow players to move in their own pace in a journey of exploration, puzzle solving, and unearthing treasures. These games usually have a storyline and call for the player to visit different locations and interact with many different characters and non-playable characters. The protagonist usually set out to accomplish a main goal through character interaction and inventory manipulation (Saltzman, 2003). Examples include *Myst*, *King's Quest*, *Batman: A Telltale Series*, *The Walking Dead: A New Frontier*, *Resident Evil 7: Biohazard*, *Firewatch*, and *No Man's Sky*.

Strategy Games

Strategy games require a great deal of mental challenge and emphasize logical thinking, planning and resource management. Resource management typically includes constructing a variety of buildings or units, and deciding how and when to put them into action (Novak, 2012). The player builds an empire, fortress, or world and prepares to resolve problems like invasion, hardship and revolution. There are two distinct types of strategy games. They are classified into *real-time strategy* games (RTS), which are relatively fast-paced and strategic decisions must be made quickly, and *turn-based strategy* games, which are played in rounds or turns. Examples of real-time strategy games include *Age of Empires II*, *Europa Universalis IV*, *StarCraft II*, *Company of Heroes 2*, and *Homeworld: Deserts of Kharak*. Examples of turn-based strategy games include *Civilization VI*, *XCOM 2*, *Endless Space 2*, *Total War: Warhammer*, and *Master of Orion*.

Role-Playing Games

In role-play games (RPG), a player can play a character (such as a warrior, thief, knight, prince, priest, or wizard) and pursue quests, collect items, explore dungeons, fight monsters, and gather treasures. RPGs are similar to adventure games, but rely more on character growth and development, conversation, and strategic combat than on puzzle-solving. Quests and fantasy worlds with non-playable characters (NPC) are common to this genre (Saltzman, 2003). NPCs can help or hinder the player depending on the game design. The storyline is not always linear and the narrative usually drives the game. Examples include *Final Fantasy XV*, *The Elder Scrolls V: Skyrim*, *Dark Souls III*, *Fallout 4*, *EverQuest*, and *Star Wars*.

Sports Games

Sports games simulate the real-world counterpart sports, such as basketball and soccer. These games often feature the real-world rules and strategies. Realism is important, as are fast action and tactical strategy (Saltzman, 2003). Some sports games focus on the actual playing of a sport and others stress on the management behind the sport. Many of these games are released annually to reflect the real-world change in that sport. The most popular titles prominently feature current sports celebrities, and sport teams toward which game players are likely to have a preexisting positive disposition. Examples include *The Golf Club 2*, *Tour de France 2017*, *PES 2017*, *NBA 2K17*, *Madden NFL 17*, and *Football Manager 2017*.

Simulation Games

A simulation game emulates real or fictional activities of systems. These systems or activities can be anything from the workings and economy of railroads to combat scenario where the player controls troop movement, or a fighter craft (Rabin, 2010). Sims realistically simulate a given animate or inanimate object or process. Simulations often place the gamer in a 3D first-person perspective (Saltzman, 2003). Typically, the game play is focused around the maneuvering of the machinery. “God-game” simulations require the player to build and manage cities, communities and other resources on a grander scale. Hence, the player is external to the game and builds up the world with a holistic view. God games are likely played in an isometric view. Examples include *Farm Simulator 18*, *Surgeon Simulator 3*, *GT 7*, *The Sims 4*, *Sim City 5*, and *Combat Flight Simulator 3*.

Puzzle Games

Puzzle games do not usually have much of a story but instead focus on a mental challenge for the player to find one of the correct solutions. In puzzle games, the player only interacts with the puzzle and does not take on the role of a character. Some puzzle games do not really have victory condition and allow the player to retry continuously after defeated. Pattern recognition and matching challenges are common in puzzle games. Puzzle games include those classic games of leisure such as tile games, card games, trivia games, word games and board games (Saltzman, 2003). These games are generally smaller, simpler or shorter. This type of game dominates the handhelds and mobile phone worlds. Examples include *Tetris*, *Puzzle Quest*, *Candy Crash Saga*, and *Brain Age*.

METHODOLOGY

Participants

Participants were students at a teacher-training institute in Hong Kong. Students were recruited from a general education course entitled “Understanding Digital Games”. The course does not have any prerequisite and any student from the university can enroll into this course. Students (n=160) were recruited in two academic years between 2016 and 2017. Participation in the study was voluntary. They signed a consent form and were informed of their rights to withdraw at any time during the study. PC games, VR games, Sony PS3/4 games, Xbox 360 games, Nintendo Wii, and a number of handheld games in the laboratory were provided for the students to play for a period of a semester.

Measures

Two instruments were used in this research. For the personality traits, we use the IPIP Big-Five factor markers (Goldberg, 1992). For the gaming preferences, we adopted a game liking questionnaire similar to deGraft-Johnson, Wang, Sutherland, and Norman (2013). Although their research was similar to the research we were conducting, we used a more renowned instrument to evaluate the participants’ personality traits and we classified the games differently. The details of the instruments are described below.

IPIP Big-Five Markers

For the personality test, we chose the International Personality Item Pool (IPIP) as the measure. The IPIP measure has many items and scales developed over the years (IPIP, 2017). This research used the smallest scale with the 50-item version over the more detailed 100-item and 300-item versions. This version is by far the most popular Big-Five personality instrument in psychology and is freely available to the public. Items from the IPIP have been translated from English into more than 25 other languages (Goldberg et al., 2006). Both English and Chinese were used in this research. The 50-item English version can be located at http://ipip.ori.org/New_IPIP-50-item-scale.htm. The five-point scales are: 1) Very Inaccurate, 2) Moderately Inaccurate, 3) Neither Accurate Nor Inaccurate, 4) Moderately Accurate, and 5) Very Accurate. The big-five factors (i.e., OCEAN / EACNO) can be calculated using the following equations:

$$\begin{aligned}
 E &= 20 + (1) - (6) + (11) - (16) + (21) - (26) + (31) - (36) + (41) - (46) = \underline{\hspace{2cm}} \\
 A &= 14 - (2) + (7) - (12) + (17) - (22) + (27) - (32) + (37) - (42) + (47) = \underline{\hspace{2cm}} \\
 C &= 14 + (3) - (8) + (13) - (18) + (23) - (28) + (33) - (38) + (43) - (48) = \underline{\hspace{2cm}} \\
 N &= 38 - (4) + (9) - (14) + (19) - (24) - (29) - (34) - (39) - (44) - (49) = \underline{\hspace{2cm}} \\
 O &= 8 + (5) - (10) + (15) - (20) + (25) - (30) + (35) - (40) + (45) - (50) = \underline{\hspace{2cm}}
 \end{aligned}$$

The numeric values of the five-point scales were used. The signs were accounted for the reverse items and adjusted with the constants. Hence, the score for each factor should be between 0 and 40. An example of a participant on calculating *Openness* (O) is shown as follows:

SID (2241)	<i>Openness to Experience</i>	8
Q5	I have a rich vocabulary. (我能言善道)	+3
Q10	I have difficulty understanding abstract ideas. (我難以了解抽象的概念)	-3
Q15	I have a vivid imagination. (我想像力豐富)	+4
Q20	I am not interested in abstract ideas. (我對抽象的議題不感興趣)	-4
Q25	I have excellent ideas. (我常有很棒的主意)	+4
Q30	I do not have a good imagination. (我沒甚什麼想像力)	-3
Q35	I am quick to understand things. (我很快就能理解事情)	+5
Q40	I use difficult words. (我有時會用艱深的字眼)	+2
Q45	I spend time reflecting on things. (我會花時間反省)	+5
Q50	I am full of ideas. (我有很多主意)	+4
		=25

Game Preference Questionnaire

For the seven game genres, the participants had to fill in the questionnaire after they played their selected games. The questionnaire contained questions on the played hours, their preferences and views on the selected games. A sample of the questionnaire is shown in Figure 1.

Game Preference								
Game's Type: <u>Action</u>								
Game's Played: _____ (e.g. GTA IV)								
Played Hours: _____ (should play at least an hour)								
Item		Use ✓ to make your selections						
1	Have you played this game before? 之前有否玩過這隻遊戲?	() Yes (有)		() No (沒有)				
		No at all 一點也不						
Items		1	2	3	4	5	6	7
2	How difficult do you think this game is? 這隻遊戲很難玩嗎?							
3	How well do you think you did on this game? 這隻遊戲玩得有多好?							
4	How much do you enjoy playing this game? 享受玩這隻遊戲嗎?							
5	How likely would you play this game again? 會否再玩這隻遊戲?							
6	How interested would you be in playing other games like this? 對這類遊戲會有興趣玩嗎?							
7	Other comments about the game: ***please provide 3 short video clips (preferably at the start, in the middle, and at the end) on you playing the game. 對這隻遊戲的一些評論: ***請提供三段你玩這隻遊戲短影片, 最好是在開始、中段及尾段的時候。							

Figure 1. The questionnaire for the game type

Procedures

At the start of the course, the IPIP survey was conducted. The participants answered the IPIP instrument related to the five personality factors so that the research team could evaluate their personalities using the framework proposed by IPIP (Goldberg, 1992; IPIP, 2017). During the course, the participants were taught to be familiar with the game classification and explored the various classification systems in the game industry. The teaching team provided the web resources for them to search and identify their games. The major game titles can be found in the laboratory. They were allowed to borrow and use them at home. They could rely on the available games to complete the questionnaire or use their own games to evaluate their preferences as part of their exercises in the course.

RESULTS

Scores on personality traits were calculated using the above equations for each participant on the five factors. Table 1 shows the means and standard deviation, calculated for the participants who filled the questionnaire completely. The questionnaires which had missing data were excluded. The radar chart (Figure 2) displays the multivariate dimensions of the participants' personality traits. *Agreeableness*, *Conscientiousness* and *Openness* had the three highest means. This result is not surprising as the participants are mostly pre-service teachers. These students are typically polite and likeable people, and sensitive to the needs of others.

Table 1. Descriptive Statistics of EACNO for all participants completed the questionnaire

	N	Minimum	Maximum	Mean	Std. Deviation
Extroversion	154	7	32	19.76	4.717
Agreeableness	154	12	38	26.71	4.125
Conscientiousness	154	11	37	24.57	4.533
Neuroticism	154	0	37	20.23	6.067
Openness	154	15	37	24.07	4.444
Valid N (listwise)	154				

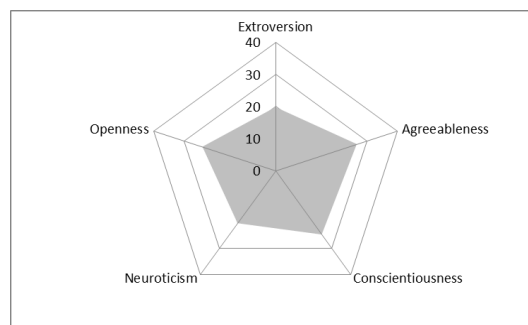


Figure 2. The radar chart of the participants' personality dimensions

For game preferences, the participants felt that strategy games such as 'Age of Empires' were the most difficult game genre to play and simulation games (mostly in 'The Sims' series) were the easiest.

Table 2. Response on the difficulty of playing the game types

	N	Minimum	Maximum	Mean	Std. Deviation
Action: Difficult	133	1	7	4.05	1.437
Strategy: Difficult	132	1	7	4.49	1.501
Adventure: Difficult	129	1	7	3.99	1.702
RPG: Difficult	133	1	7	3.96	1.578
Sport: Difficult	131	1	7	4.02	1.581
Simulation: Difficult	128	1	7	3.52	1.739
Puzzle: Difficult	133	1	7	3.68	1.795
Valid N (listwise)	123				

Interestingly, the participants felt that they would like to play strategy games the most as shown in Table 3. Although they identified strategy games as the most difficult game type to play, they would like to play these games. These participants enjoyed the aspects of logical thinking, resource management, planning and mental challenge in strategy games. Action games were also high on their preferences, indicating that many participants also liked to play action games. The research team believes that there are many experienced gamers among the participants.

Table 3. Response on the enjoyed game types

	N	Minimum	Maximum	Mean	Std. Deviation
Action: Enjoy	133	2	7	5.29	1.413
Strategy: Enjoy	132	2	7	5.32	1.437
Adventure: Enjoy	129	1	7	4.82	1.465
RPG: Enjoy	133	1	7	5.20	1.313
Sport: Enjoy	131	1	7	5.22	1.421
Simulation: Enjoy	128	1	7	4.72	1.374
Puzzle: Enjoy	133	1	7	4.76	1.349
Valid N (listwise)	123				

On whether the participants enjoy the game types, the correlations between the personality traits and the game types can be found in Table 4. We found that (1) *Neuroticism* significantly correlated with *Action*, (2) *Extroversion*, *Neuroticism* and *Openness* correlated *Strategy*, (3) *Conscientiousness* significantly correlated with *Adventure* negatively, and (4) *Neuroticism* significantly correlated with *Simulation* negatively. Hence, participants with higher neuroticism enjoyed playing action games. Those with higher extroversion and openness enjoyed playing strategy games. Those with higher conscientiousness did not enjoy playing adventure games. Those with higher neuroticism did not enjoy playing simulation games. We can explain these outcomes intuitively. However, we could not explain why people with higher neuroticism enjoy playing strategy games.

Table 4. Correlations between the personality traits and the preferred game genres

		Action	Strategy	Adventure	RPG	Sport	Simulation	Puzzle
Extroversion	Pearson Correlation	.037	.187*	-.081	.020	.084	-.043	-.102
	Sig. (2-tailed)	.675	.032	.363	.817	.340	.627	.241
	N	133	132	129	133	131	128	133
Agreeableness	Pearson Correlation	.042	.168	-.027	-.005	.072	-.103	.056
	Sig. (2-tailed)	.629	.054	.759	.958	.414	.248	.520
	N	133	132	129	133	131	128	133
Conscientiousness	Pearson Correlation	.136	.065	-.187*	.033	.035	-.033	-.059
	Sig. (2-tailed)	.118	.456	.034	.707	.696	.714	.503
	N	133	132	129	133	131	128	133
Neuroticism	Pearson Correlation	.215*	.203*	-.070	-.061	.026	-.186*	-.048
	Sig. (2-tailed)	.013	.020	.430	.489	.771	.036	.581
	N	133	132	129	133	131	128	133
Openness	Pearson Correlation	.072	.180*	-.047	.049	.068	.077	.074
	Sig. (2-tailed)	.411	.039	.594	.577	.440	.389	.398
	N	133	132	129	133	131	128	133

CONCLUSION

This research reveals that most of the participants studying at a teacher-training institute in Hong Kong are high on the personality dimensions of *Agreeableness*, *Conscientiousness* and *Openness*. As they are pre-service teachers, they are generally polite and likeable people. The teacher training environment may nurture and shape these students in this direction, but further research work is required to establish this claim. Among this group of students, they identified strategy games as the most difficult game type to play. Interestingly, they enjoy playing this type of games despite its difficulty. It is possible that these students attract to the challenges which this type of games provides. However, further research is needed to investigate the reasons. This study clearly shows the correlations between the personality traits and the preferred game types. Some correlations are intuitive, but others require further investigation.

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Study About the Perception of Basic Digital Competences of Students of a Chilean University

Lagunes Domínguez AGUSTIN

*Universidad Veracruzana, México,
aglagunes@uv.mx*

Judikis Preller Juan CARLOS

*Universidad de Magallanes, Chile,
juan.judikis@umag.cl*

Torres Gastelú Carlos ARTURO

*Universidad Veracruzana, México,
ctorres@uv.mx*

Flores García María ALICIA

*Universidad Veracruzana, México,
maflores@uv.mx*

ABSTRACT

Digital competences have long been of interest to many authors, for this reason, this paper shows the results of a survey applied to students of a Chilean university. Students were asked about their digital competencies in five dimensions, the first dimension is about their general knowledge and technological skills, the second about the use of ICT in everyday life, the third about their specialized skills for working and creative expression, the fourth about communication and technology-mediated collaboration, and the fifth, the way they manage and process information. Categories of their competences levels were created according to the score they obtained. They are Low, Low Intermediate, High Intermediate and High.

As a result, the data showed that the students had lower scores in the first dimension, general knowledge and technological skills (average 2.70%), and in the third dimension, specialized skills for working and creative expression (average 2.87%). The highest averages students obtained were in the fifth dimension, management and processing information (52.5%), and in the second dimension, use of ICT in everyday life (22.5%).

As a conclusion, the mere presence of technological resources in universities and the high capacity of students are not enough to develop the digital competence in students. Furthermore, because this was a study about perception, and several studies indicate that students are optimistic about their abilities, it follows that the basic digital skills of the students observed may be lower than the one indicated in the study. Therefore, it is suggested to create an instrument that evaluates their basic digital competences and confront their results with those presented here.

Key words: Competences, Digital competences, Students

INTRODUCTION

Many authors have investigated the basic digital competences that a person has; the approaches that addressed the topics have also varied, so we will present a review of important studies and their approaches. The first approach has to do with comparing what is known as digital migrants, for which the authors Román-García, Almansa-Martínez and Cruz-Díaz (2016) conducted a study with adults (18-55 years) and older adults (+55 years) to whom they applied an instrument, in total 174 people from Andalusia Spain. The results were interesting, the study indicates that adults with age range between 18 and 30 years present a better level of media competence in technical skills related to instrumental use, interaction and language, whereas from the 30 they increase the skills in Critical and participatory dimensions, such as reflection, analysis and creation. In addition, they found that the digital skills of adults over 55 years are directly related to their level of income, this means that a person over 55 years old has a good level in digital skills as long as their economic level is also.

Other studies focus on a different generation of students to check their digital skills, such as the authors Pérez-Escoda, Castro-Zubizarreta and Fandos-Igado (2016) who, through a study of 678 students of Primary Education, try to show that the students of the generation Z already have this ability. The results reveal that they do not inherently acquire digital skills, but need education in this regard, noting the danger of a digital division, not by use or access to them, but by lack of competitiveness. The absence of a significant difference in the general level of digital

competence among the students of different courses of Primary Education reflects that, to some extent, this level is acquired more by coexistence with ICT in informal contexts than by an adequate development in the school context that gradually and gradually enhances their acquisition. That is, it is not inherent to Generation Z, but they are acquiring competence informally.

In a similar way, the authors Fernández-Cruz and Fernández-Díaz (2016) carry out a study where they indicate that the mere presence of technological resources in the centers and the high capacities of the Generation Z students are not sufficient to develop in the students the digital competence. They indicate that the fundamental key is determined by the technological and pedagogical competences of teachers, that is, that teachers are the most important factor for primary and secondary students to acquire digital skills. Therefore, they applied an instrument in 80 schools And 1,433 teachers, the results were revealing, 36.85% had a "Bad" profile and 9.56% "Very bad", that is, a total of 46.31% of teachers have a negative profile in terms of Their ICT training in the educational world, then they directly affect the development of digital competence of Generation Z students.

Other studies that refer to teachers, such as Morales-Arce (2013) who writes about the support that is given to the Digital Abilities for All program for the development of digital skills in Mexican teachers. Likewise, the authors García López et al. (2012) carried out an investigation with teachers of secondary education in Mexico, with the purpose of identifying the levels of acquisition of the digital competences of teachers. The study took into consideration five dimensions: knowledge and skills in the Web, organization in format Digital, use of digital tools or devices for communication, electronic search and design of digital educational resources. The results reveal that most teachers have greater mastery of the organizational dimension in digital format and the one that less dominate and require a training course is in the design of digital educational resources. That is, teachers remain in debt to students to help them develop their digital skills.

The study by Hatlevik, Ottestad and Throndsen (2015) conducted in Norway for seventh grade students, teachers and educational managers, as well as Fernandez-Cruz and Fernández-Díaz (2016), show that the higher level of managers and teachers the more is the level of digital skills in students. Finally, let us talk about university students, as well as this research, authors Castellanos-Sánchez, Sánchez-Romero and Calderero Hernández (2017) carry out research with new students to the university. They applied an instrument to 301 students with 29 items, and the results show the predominance of students over 30 years of age, female, who have a computer with Internet connection. It also shows that student's favorite means to interact is the telephone, surf daily and use e-mail, basic technologies, especially the office suite, and are not familiar with the use of current tools such as blogs or social bookmarks. It is concluded, that these students do not share the expected qualities of a digital native: produce, disseminate and consume culture through the Internet. That is, they do not have the digital competence that would be thought the students of this generation. In agreement with Castellanos-Sánchez, Sánchez-Romero and Calderero-Hernández (2017) this research group has carried out an investigation in a university of the Chilean Patagonia applying a perception instrument to the students of new entrance of Pedagogy to determine their level of Digital competition.

THE STUDY

For this study, new students of Pedagogy were invited, being a probabilistic study, each student decided whether to accept the invitation, they were asked to answer their study of perception, 40 students accepted to participate.

The instrument was a questionnaire with five dimensions, the first dimension is about their general knowledge about ICT, the second on the use of ICT in their daily lives, the third on their specialized skills for work and creative expression, the fourth about technology-mediated communication and collaboration, and fifth, how they manage and process information. This instrument had 48 items and applied through the survey technique.

To facilitate the application of the instrument and to give reliability, it was programmed in PHP with the MySQL Database Management System, it was preregistered to the participating students, because the instrument is closed and to respond it is necessary to log in first, It was validated that each student could only respond on one occasion. The Cronbach alpha for the items corresponding to the basic digital competence is 0.825 (Zúñiga, Edel and Lau, 2016).

It should be noted that this instrument was taken from the authors Zúñiga, Edel and Lau (2016) who applied this same in the Faculty of Pedagogy of the Veracruzana University in Mexico.

The instrument is of perception so the answers were multiple choice and the options were as follows:

- A) "Yes and I would explain." (If you think, you know how to do the action without difficulty and you could explain it to another person).
 B). "Yes". (To indicate that you can perform the action without difficulty).
 C). "Yes, but with help." (If you have difficulty doing it yourself, but you can do it with the help of another person).
 D) "No". (If you think, you do not know how to carry out the proposed action)
 For option a) "Yes and I would be able to explain," a numeric value of four was assigned,
 for b) "Yes" was assigned three,
 c) "Yes, but with help" value 2 and
 d) "No" value 1.

According to the score obtained by the students, the categories of their competence level were created: Very Low, Low, Low Intermediate, High Intermediate and High, the way in which the classification was performed is the following:

Level	Minimum	Maximum
Very low	1.00	1.99
Low	2.00	2.50
Low intermediate	2.51	2.99
High intermediate	3.00	3.50
High	3.51	4.00

Table 1. Determination of levels.

In each case, the scores were considered to get an average of the score obtained in the five dimensions, and the, it was calculated to be able to locate them in one of the levels indicated in Table 1.
 The results are shown in the next section.

FINDINGS

Before starting with the analysis of results it is necessary to remember the scale of qualification for each question, where four could be obtained if the participant answered that he could carry out the activity and could explain it to another person and one if he did not know how to do it activity. Therefore, we will show scatterplots where students will be surveyed in each of the categories with grades 1 to 4 and finally, we will show the general results and the levels that they obtained. Let us start with the first dimension, which can be seen in Figure 1.

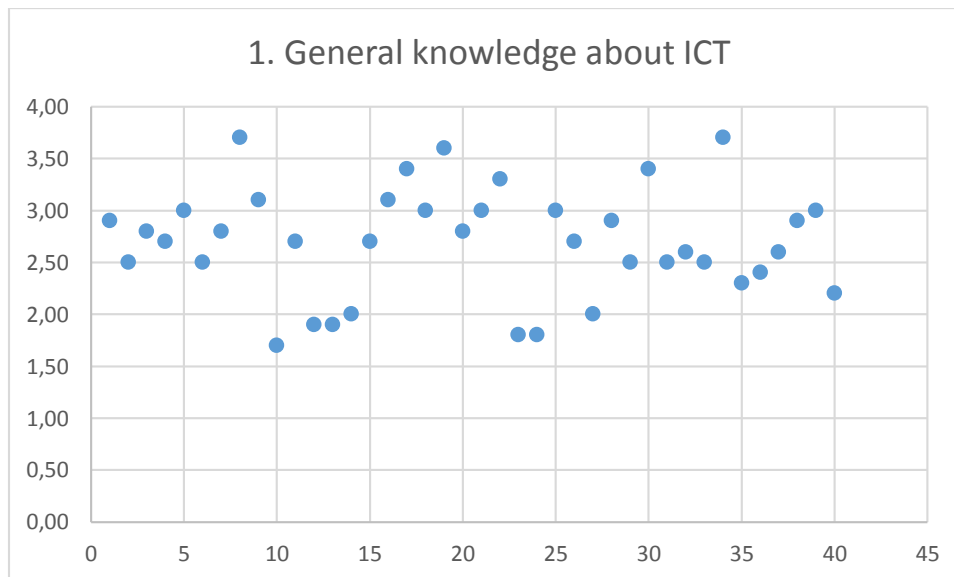


Figure 1. First dimension on basic digital skills.

As can be seen in Figure 1 on the general knowledge about ICT, there are students with very low grades, there are five students with scores below two, that is, with a Very Low level, and another 10 between 2 and 2.5 With low level. On the other hand, only three students are at a High level. In this dimension, the lowest rating was 1.70, the average 2.70 and the highest rating 3.70.

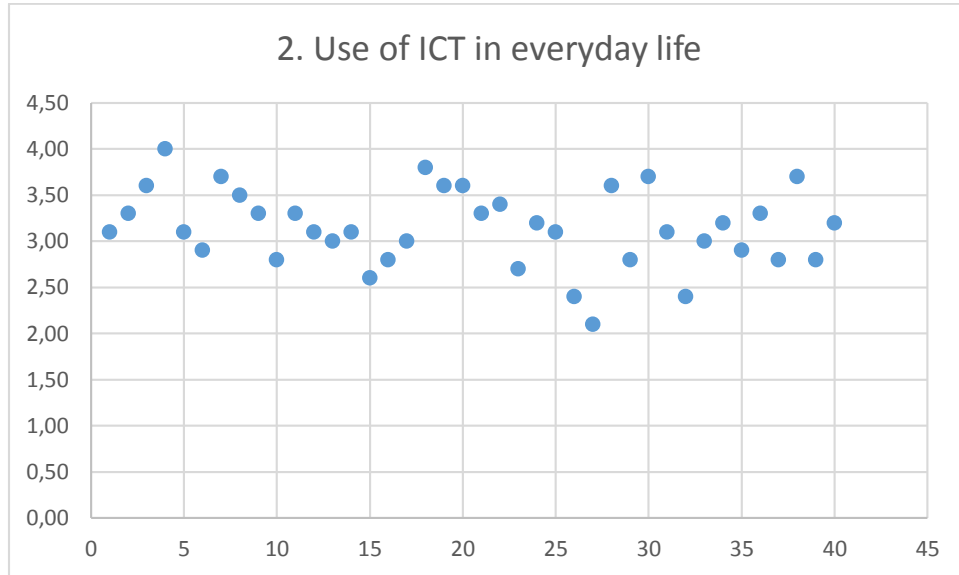


Figure 2. Second dimension on basic digital skills.

In the dimension of the use of ICT in daily life, the results are more concentrated, Figure 2 indicates that the results of the students are closer to the average. The minimum rating was 2.10 well above the minimum of the first category, and the average is 3.50. It is the time the highest rating was four. The results show that 75% are below average, 2.5% on average and 22.5% above average.

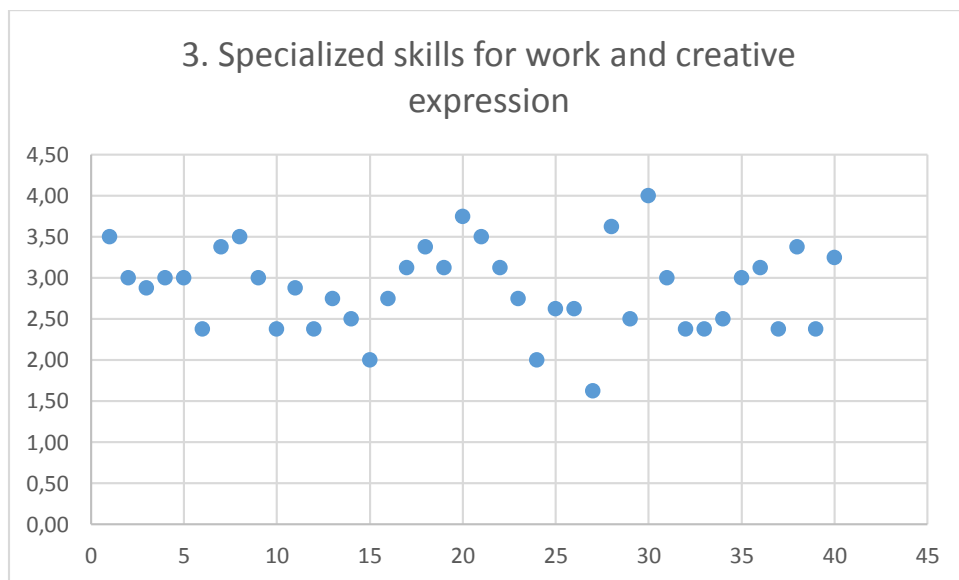


Figure 3. Third Dimension on Basic Digital Skills.

As for specialized skills for work, the highest score remains at 4, the lowest score falls much to 1.63 being the lowest of the analyzed dimensions and making the average also lower to 2.87 as seen in the Figure 3. The good news in this dimension is that 50% of students are above average, 5% on average and 45% below average.

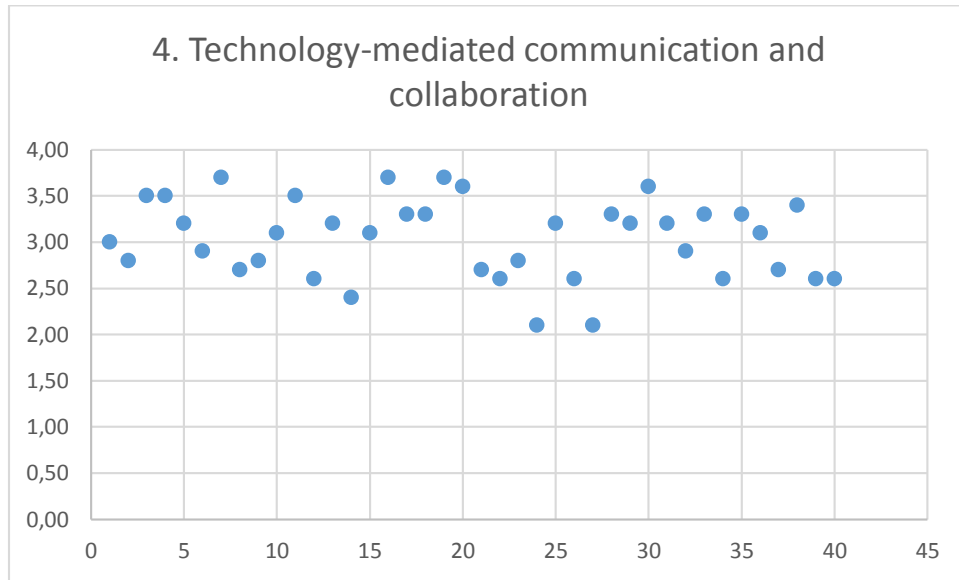


Figure 4. Fourth dimension on basic digital skills.

Like the dimension of ICT use in daily life, this dimension has very concentrated ratings as shown in Figure 4, although it does not have a grade of 4, the results are between 2.10 and 3.70, with an average of 3.04. It should be noted that the most frequent qualification is 2.60 with six students who obtained this qualification. Likewise, 55% of students were above average and 45% below average.

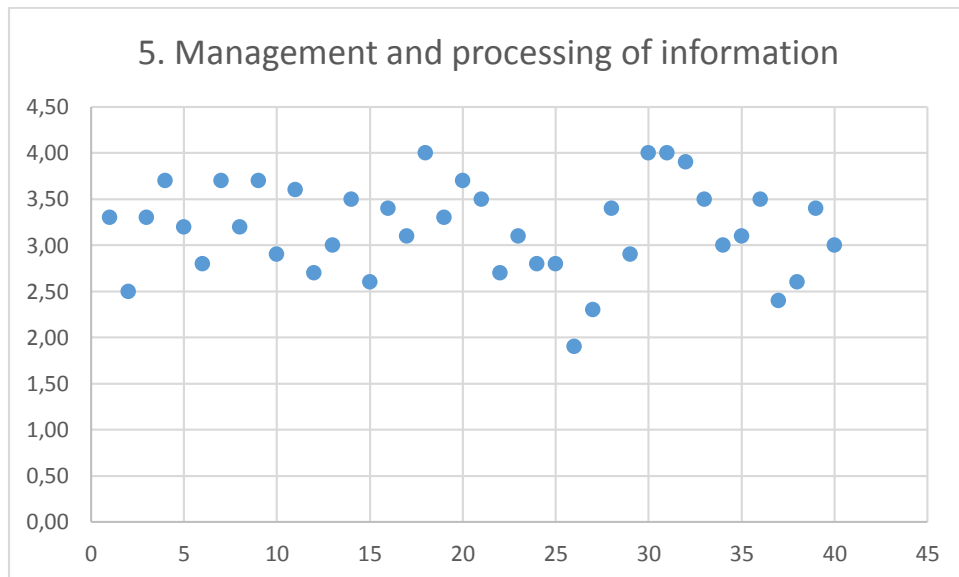


Figure 5. Fifth dimension on basic digital skills.

In this last dimension on information management and processing, Figure 5 shows that it is the first dimension where there is more than one student with 4 grades, with 3 students who obtain it. Regarding the major and minor qualifications, evidently the highest was four, while the lowest was 1.90 and the average 3.18, if we look at the

results of the four previous dimensions we will see that this dimension has the highest average of the whole test Applied. As for the average, above average is 52.5% of students while 47.5% are below average.

To finalize this analysis of results, Graph 6 is presented with the general results of the students assigning the levels established in Table 1.

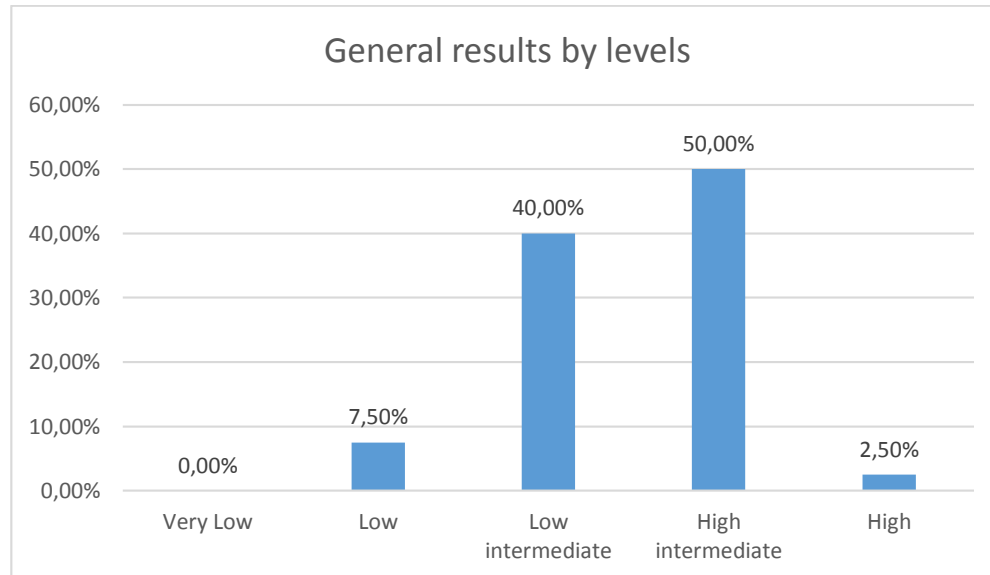


Figure 6. General results by levels.

Figure 6 clearly shows that the trend is toward an intermediate level, that is, from High Intermediate to Low Intermediate and then to Low. When this research was started it was hypothesized that students would be between Intermediate High and High, but this is not so.

CONCLUSIONS

As a first conclusion we have the dimension with the lowest qualification is the third "Skills specialized for work and creative expression" with 1.63, followed by the first dimension "General knowledge about ICT" with 1.70.

The second conclusion is that the lowest average dimension is the first "General Knowledge about ICT" with 2.70, followed by the third dimension "Specialized skills for work and creative expression" with 2.87.

The third conclusion is taken from the previous two, the dimension where the students had the lowest results is the first "General knowledge about ICT" and the next low dimension is the third "Skills specialized for work and creative expression", This means that these two dimensions are the ones that must work to improve in the students.

The fourth conclusion refers to the highest averages, where the fifth dimension "Management and processing of information" with 3.18 and has the highest average followed by the second dimension "Use of ICT in everyday life" with 3.15.

As a fifth conclusion, the dimension in which students left the better is the fifth one because it has a higher average of 3.18 and above the average is 52.5% of the students while, while the second dimension "Use of ICT In everyday life "with 3.15 on average only has 22.5% above.

The sixth conclusion is that the students are at an intermediate level in terms of their basic digital competences, being expected to be at an Intermediate High and High level.

Finally a general conclusion, as this was a test of perception, and several studies indicate that students are optimistic as far as their abilities, it is possible to conclude that basic digital competences of the Chilean students of this university are lower than the ones they say the have. Being aware of the fact, the authors suggest developing an instrument that evaluates their basic digital competencies and confront their results with those presented here.

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Study Collocations Through Language Corpora

Leila Yu. MIRZOYEVA

Suleyman Demirel University

Almaty, Kazakhstan

mirzoeva@list.ru

Khafiza A. ORDABEKOVA

Suleyman Demirel University

Almaty, Kazakhstan

khafiza.ordabekova@sdu.edu.kz

ABSTRACT

Nowadays, tri-lingualism strategy in the Republic of Kazakhstan generates a lot of new challenges, and, on the other hands, it provides us with a lot of innovative tools for multilingual studies. Thus, one of perspectives in linguistics as well as in philology students' training is the implementation of corpus-based approach in language study and research process.

Why is it necessary to apply corpus-based approach in the process of linguistic research in multi-lingual context? Firstly, such resources as Russian and British National Corpora as well as Almaty Corpus of Kazakh Language represent an appropriate amount of information; so the study will become much more objective than a traditional one.

Secondly, the data represented in Corpora are excerpted from various sources related to different periods of time and diverse stylistic characteristics (thus, Russian National Corpus deals with 283431966 entries covering the period of time from XVIII to XXI centuries). At the same time, the BNC site says that "the British National Corpus (BNC) was originally created by Oxford University press in the 1980s - early 1990s, and it contains 100 million words of texts from a wide range of genres (e.g. spoken, fiction, magazines, newspapers, and academic)" whereas Almaty Corpus of Kazakh Language should be treated nowadays rather as a pilot project than as a completed source. However, even at this stage of its functioning Almaty Corpus of Kazakh Language comprises more than 40 million entries. So, the comparative study of lexical phenomena on the basis of plenty of sources provided by language corpora should be construed as a new opportunity to reveal peculiarities of national world view represented in Kazakh, Russian and English languages.

Thirdly, linguistic corpora represent information concerning specific collocations in Kazakh, Russian and English languages. In our viewpoint, this characteristics of language corpora is of paramount importance for language study especially because of variability of contexts.

Keywords: tri-lingual study, British National Corpus, Russian National Corpus, Almaty Corpus of Kazakh Language, collocations

INTRODUCTION

In the frame of Tri-lingualism Policy in Kazakhstan which was proclaimed by our President, Kazakh language is used nowadays as a predominant language; the status of Russian language is specified as a tool of intercultural communication used by all ethnic groups in Kazakhstan whereas English language is considered as a means of international communication. So one of current trends in Kazakhstani linguistics is the comparative study of semantic phenomena represented in all aforementioned languages.

Why is it so important to study collocations? First of all, there is no doubt that collocations are unpredictable and specific in all languages; moreover, it is not an overstatement to say that collocations predetermine the specificity of national world view.

Why should we use corpus-based approach?

As it is stated before, Language Corpora provide us with the appropriate amount of data, wide range of documents; also, they comprise wide representation of semantic information, combinability of the certain word as well as its grammatical and syntactic peculiarities. One of the main advantages of Language Corpora is use of various sources containing certain collocations.

LITERATURE REVIEW

At present stage of language study, there are a lot of works based on corpus data and using corpus-based approach. Most of scholars argue that automation of information extraction expand horizons of semantic study especially in collocation analysis and practical implementation of its process results. Thus, Riloff, E.& Shepherd, J. (1997) stated that "semantic information can be helpful in almost all aspects of natural language

understanding, including word sense disambiguation, selectional restrictions, attachment decisions, and discourse processing. Semantic knowledge can add a great deal of power and accuracy to natural language processing systems. But semantic information is difficult to obtain". At the same time, in his paper *A Corpus-Based Approach to Language Learning* (1993) Eric D. Brill said the following: "Part of a person's knowledge of language consists of knowing how to assign an abstract structural description to sentences. Included in this knowledge is an awareness of the word and phrase classes of a language, the members of each class, and the relationships that hold between classes". Also, in accordance with his position, "simple semantic template-matching approach would fail on many complex sentences, where no keyword matching can uncover the relationships between the words in the sentence".

Works by Nesselhauf, N. (2004), (2005) are also dedicated to practical implication of corpus-based approach in semantic studies. Thus, in her paper *Collocations in a Learner Corpus (Studies in Corpus Linguistics)* (2005) she proposed the following definition of collocation as bilateral phenomenon correlated both with semantics and syntax: "Collocations, i.e. arbitrarily restricted lexeme combinations such as make a decision or fully aware, are one type of a group of expressions whose importance in language has been increasingly recognized in recent years. This group of expressions has been variously called prefabricated units, prefabs, phraseological units, (lexical) chunks, multi-word units, or formulaic sequences. 1 They are made up of more than one word and are lexically and/or syntactically fixed to a certain degree. Following a period in which, largely due to the wide influence of generative grammar, prefabricated units were considered peripheral in language, it is today widely assumed that their number is vast and that they play a major role in language processing and use".

Besides, Nesselhauf, N. (2004) highlighted some methodological principles of corpus-based approach in study collocations, e.g.

- "If you use different corpora for an analysis, find out to what degree they are comparable (corpus size, variety, time span covered, text types) etc.;
- You need to make sure that your search (or searches) actually finds all occurrences of the language item in question;
- After performing a search with corpus software, you have to check whether all results are actually relevant for the investigation in question (and if not which ones have to be excluded);
- You need to check how the item in question is distributed in the corpus (e.g. whether it only occurs in certain periods / text types etc.); it is also relevant from how many different texts (or text categories) the solutions come from (i.e. if an item is very frequent, but occurs only in one or two texts, this does not mean that it is frequent in the variety / text type etc. investigated)".

Therefore corpus-based approach is considered to be one of the fruitful ways of semantic studies including such aspect as study collocations.

RESEARCH METHODOLOGY

In our research we used such methods as semantic analysis and comparative analysis of Corpus data.

Passages containing the appropriate lexemes were extracted from Russian National Corpus (RNC), British National Corpus (BNC) and Almaty Corpus of Kazakh Language in order to

- Analyze their semantic structure;
- Find the most typical contextual realizations;
- Find various cases of correspondence and discrepancies between Russian, Kazakh and English words *snow /sneg (rus.)/kar (kaz) and rain/dozhd (rus.)/zhanbyr (kaz)*

The process of study collocations in FLT involved such stages as

- comprehension/reasoning;
- reflection on the way of reality representation;
- active use of collocations in the process of communication.



LIMITATIONS

As it was stated before, the Almaty Corpus of Kazakh Language is still in the planning stage; so there are some discrepancies in the amount of documents (entries) between it and the British National Corpus, as well as between the Almaty Corpus of Kazakh Language and the Russian National Corpus. Consequently, we are able to find some general trends only; at the same time many details are probably lost on because of its incompleteness.

The second type of limitations is related to different representation of lexical material in Corpora and varied tools used in Corpora system; thus, there is special section for collocations in the British National Corpus whereas in the Russian National Corpus as well as in the Almaty Corpus of Kazakh Language it is necessary to set certain target in the process of search.

Figure 1. Collocations in BNC

British National Corpus (BYU-BNC)



SEARCH

FREQUENCY

CONTEXT

HELP

SEE CONTEXT: CLICK ON WORD OR SELECT WORDS + [CONTEXT] [\[HELP...\]](#)

[COMPARE](#)


















		CONTEXT	FREQ		ALL	%	MI	
1		WHITE	160		23111	0.69	5.29	<div></div>
2		RAIN	65		6214	1.05	5.88	<div></div>
3		COVERED	51		7832	0.65	5.20	<div></div>
4		DEEP	51		10141	0.50	4.82	<div></div>
5		ICE	47		3923	1.20	6.08	<div></div>
6		WINTER	43		7046	0.61	5.10	<div></div>
7		FELL	37		10082	0.37	4.37	<div></div>
8		FALLING	36		4506	0.80	5.49	<div></div>
9		WIND	35		7299	0.48	4.76	<div></div>
10		HEAVY	33		9019	0.37	4.37	<div></div>
11		MELTING	31		597	5.19	8.19	<div></div>
12		HILL	27		6822	0.40	4.48	<div></div>
13		THICK	26		4487	0.58	5.03	<div></div>
14		FALL	25		10713	0.23	3.72	<div></div>
15		SNOW	24		3416	0.70	5.31	<div></div>
16		SPRING	24		5773	0.42	4.55	<div></div>

Figure 2. Collocations in RNC

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снег
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1. Памятка путешественника // «Трамвай», 1990 [омонимия снята] [Все примеры \(1\)](#)
В безветренную погоду **снег падает** из облаков со скоростью 20 сантиметров в секунду, а дождь — 8 метров в секунду. [Памятка путешественника // «Трамвай», 1990] [омонимия снята]

2. Марина Ахмедова. Сталинград. Возвращение // «Русский репортер», 2014 [омонимия не снята] [Все примеры \(1\)](#)
И рраз — **снег падает**, а фонари начинают мигать — блым-блым-блым. [Марина Ахмедова. Сталинград. Возвращение // «Русский репортер», 2014] [омонимия не снята]

Figure 3. Collocations in ACKL

Almaty Corpus
of Kazakh

Найдено: 273 вхождений, 29 документов

1. Шығармалар Мұхтар Әуезов 1925–1929 [Расширить контекст](#)
Үшіншісін **қар** түскеннен кейін ауыл үстінен алып еді.

2. Соңғы парыз Әбдіжәміл Нұрпейісов 1999 [Расширить контекст](#)
Сосын сырт айнала бере қолын сілтеп: «Ит білсін бе, сен туган күні жағаға алғаш **қар** жауған еді», – деген-ді.

3. Ақбілек Жүсіпбек Аймауытов 1927 [Расширить контекст](#)
Ауыл-үйден ұят емес пе?– деп келе жатқанда өрік кимелеп:
– Тейт әрі, албастан қатын **қар**!

4. Соңғы парыз Әбдіжәміл Нұрпейісов 1999 [Расширить контекст](#)
Итыржынмен өткен өмір сияқты мына із де мықтағанда бүгін, не ертең жауған бір **қар**, бір үрлеген боранмен көмелді де қалады.

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қар 1
грамматика и части речи
Дополнительно
Расстояние до следующего слова:
от 1 до 1 (в словах)
форма лемма перевод
грамматика и части речи 2
Дополнительно
Расстояние: дополнительно
Искать Очистить
Подкорпус
Настройки выдачи
Поиск в новом окне
Сообщить об ошибке

THE STUDY

As it was stated by Evans & Green (2006) “cognitivists claim that the meanings associated with linguistic units such as words, for example, form only a subset of possible concepts. After all, we have many more thoughts, ideas and feelings than we can conventionally encode in language”.

We chose collocations with *snow /sneg (rus.)/kar (kaz) and rain/dozhd (rus.)/zhanbyr (kaz)* as a language material under consideration. First of all, those words are correlated with such main part of world view as nature and natural phenomena. The second factor predetermining our choice is frequency of use which is also represented in Corpora data. Thus, there are 6214 contexts with *rain* in the British National Corpus (BNC); in the Russian National Corpus (RNC) the amount of documents containing the corresponding word, is 4404 (14418 entries) whereas 870 entries are represented in the Almaty Corpus of Kazakh Language (ACKL). There are wide range of contexts with *snow* and its equivalents in Russian and Kazakh languages in all three Corpora; thus, in BNC there are 3416 context containing *snow*; in RNC 4908 documents, or 19076 entries with *snow-sneg* are represented; in ACKL the amount of entries with *snow-kar* is 273.

As we can see, all corresponding words in three languages related to natural phenomena are frequently used in contexts included in BNC, RNC and ACKL.

One of the most typical collocations with rain in English is *heavy (torrential) rain*. In BNC we found 224 cases with heavy and 103 collocations with torrential, e.g. *He had paid three pence at the booking office for his ticket and, after waiting ten minutes or so on the cold and draughty platform for the next London-bound train, he had arrived at Christchurch some ten minutes later to run through torrential rain toward the group of cottages which flanked the open park in the town centre(Man at the sharp end. Kilby, M. Lewes, East Sussex: The Book Guild Ltd, 1991); Gloucestershire Ambulance Service has begun its own investigation, but points out that its drivers are trained to the highest standards and are very rarely involved in accidents. The collision occurred at about 9.15 this morning, when there was torrential rain across much of the Cotswolds. There were 6 accidents in Gloucestershire in just one hour (Central television news scripts); The climatic perturbations known as alminio seemed to occur every two to ten years. The nineteen eighty two to three event was one of the most severe on record and its affects were felt around the world. Large parts of Africa, India and Australia were ravished by drought (pause) while the west coast of the Americas was lashed by storms and torrential rain. The nineteen eighty two to three event was also the most comprehensively observed so far.*

RNC and ACKL represent (in both cases) one word instead of collocation – the word which is a synonym for the English set expression: *liven’* in Russian and *zhauyn/noser* in Kazakh. Both words can be treated as wide-spread ones, see:

Figure 4. Analogue of *heavy rain* set expression in Kazakh language

The screenshot displays the Almaty Corpus of Kazakh Language search interface. The main search bar contains the word 'жауын'. Below the search bar, there are four search results listed, each with a snippet of text from the corpus. The first result is from a document titled 'Әзілхан Нұршайықов 1922–2011' and contains the text 'Мезгілдің көз жасындай ақ жауын сіркіреп тұр.' The second result is from a document titled 'Жауын' and contains the text 'Жауын шашын мөлшері мен олардың олардың түсу мерзімдері топырақтың, табиғи және мәдени есімдіктердің ерекшеліктерін анықтайды.' The third result is from a document titled 'Көшпенділер. I: Алмас қылыш Ілияс Есенберлин 1971' and contains the text 'Әсіресе, ортада келе жатқан, бүкіл Дәшті Қыпшақ жеріне әйгілі, «Ортеке» деп ат қойылған құлсары сәйгүлік мінген жас әйел таңғажайып салтанатымен анадайдан-ақ көздің жауын алады.' The fourth result is from a document titled 'Көшпенділер. I: Алмас қылыш Ілияс Есенберлин 1971' and contains the text 'Рабыу-Сұлтан-Бегімдей ерекше салтанатымен емес, Жаған өз қалбетімен, жасынан ат құлағында ойнап өскен көшпелі елдің қызы екенін көрсетіп тұрған ерекше отырысымен, қамшыны сипай тартқан болмысымен көздің жауын алады.' The sidebar on the right contains navigation options: 'форма', 'лемма', 'перевод', 'грамматика и части речи', 'Дополнительно', 'Расстояние до следующего слова: от 1 до 1 (в словах)', 'Искать', 'Очистить', 'Подкорпус', 'Настройки выдачи', 'Поиск в новом окне', 'Сообщить об ошибке'.

The site says that there are 170 entries corresponding to 25 documents with *zhauyn*; Kazakh national world view establishes semantic links between such words as *rain* and *to go* as a key characteristics of the rain.

Figure 5. Analogue of *heavy rain* set expression in Russian language

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1. Андрей Волос. Недвижимость (2000) // «Новый Мир», 2001. [\[омонимия снята\]](#) [Все примеры \(1\)](#)
Мне пришлось сбавить скорость, но через полчаса, когда струи дождя дочиста смыли асфальт, я снова прибавил газу и гнал, гнал в темноте, ничего не боясь и думая только о том, что этот долгий **ливень** сорвёт с земли всю красоту и позолоту и уже завтра леса будут стоять чёрные и пустые. [Андрей Волос. Недвижимость (2000) // «Новый Мир», 2001] [\[омонимия снята\]](#) [←](#)

2. И. К. Архипова. Музыка жизни (1996). [\[омонимия снята\]](#) [Все примеры \(1\)](#)
Вечер моего дипломного концерта выдался душный, хотя над Москвой и прогремела гроза, прошёл **ливень**. [И. К. Архипова. Музыка жизни (1996)] [\[омонимия снята\]](#) [←](#)

As it is clearly represented on the picture, there are 791 document (1288 entries) for *heavy rain* analogue in RNC. On the other hand, on the basis of the appropriate amount of contexts it is necessary to underline that it does not coincide in meaning with the Kazakh version: in Kazakh language, the corresponding key concept was *to go* whereas in Russian it is much closer to *pour*.

Comparing both Russian and Kazakh words with the English collocation, we can also find out that figurative meaning of *heavy* represented in collocation *heavy rain*, does not correspond to Russian and Kazakh analogues; in Kazakh/Russian mental map, *heavy* goes together with weight and has no correspondence with rain. Besides that, Corporuses data proves grammatical disparity of collocations in Kazakh/Russian and English. Thus, in English – because of conversion – it is possible to use *rain* (as well as *snow*) as a verb; on the contrary, in Kazakh and Russian languages conversion cannot be treated as a predominant way of word formation, so there are collocations in Kazakh and Russian corresponding to one word in English. In such cases, we deal with specific kind of asymmetry presupposed by both peculiarities of grammar and national world view.

FINDINGS

In the process of study, the most important goals were to find out

- typical cases of corresponding collocations is English, Russian and Kazakh languages, stipulating similar encoding of cognitive and cultural information and simplifying study of Russian/English language for Kazakh people and vice versa;

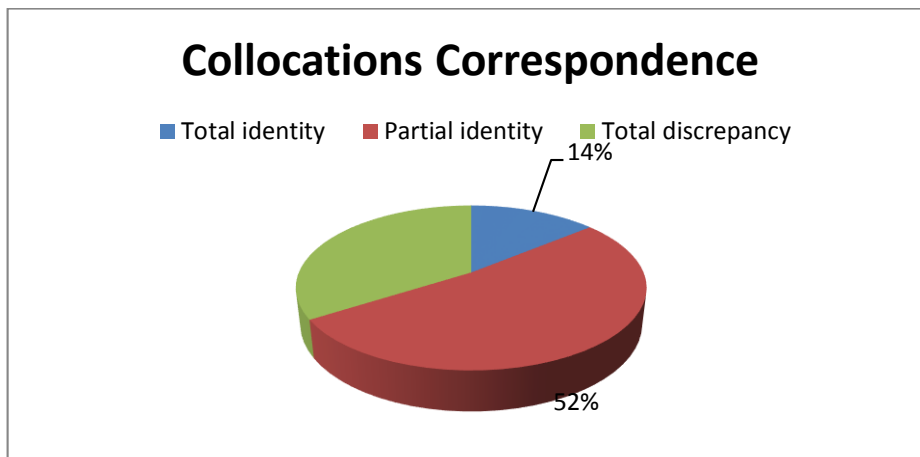
- typical cases of discrepancy presupposed by

- grammatical differences;
- semantic and pragmatic differences.

It is obvious that all kinds of discrepancies should be considered as hindrances in the process of language teaching because they symbolize both cultural and mental differences.

As it is represented on the diagram below, partial correspondence overwhelms such cases as total correspondence and complete discordance in the sphere of English/Russian/Kazakh collocations related to natural phenomena *snow* and *rain*:

Figure 6. Snow/rain collocation correspondence in English, Russian and Kazakh languages



The diagram done on the basis of Language Corpores data shows the predominance of partial identity in the sphere of collocations (52%); 34% of total discrepancy cases represent inter-language asymmetry in case of collocations with snow and rain. So, it is possible to state that the results of study represent some general trends in English/Kazakh/ Russian collocation correspondence; all those facts should be taken into account while study languages in the frame of tri-lingualism strategy.

CONCLUSIONS

To sum up, comparative study of Language Corpores data is one of the ways to overcome hindrances in the process of intercultural communication: while studying great amount of language facts represented in Corpores we can understand the peculiarities of national world view. As it is stated before, Language Corpores provide us with the appropriate amount of data, statistics, wide range of documents; also, they comprise wide representation of semantic information, combinability of the certain word as well as its grammatical and syntactic peculiarities. One of the main advantages of Language Corpores is use of various sources containing certain collocations.

Also, Corpores provide us with the system of parameters such as frequency, historical evolution of the certain word and its use in contexts related to various periods of time; RNC has also such tools as year-by-year representation and distribution of the texts in accordance with their style and authors. It is necessary to point out that in case of standardized tool system researches on the basis of Language Corpores will be much more productive than it takes place at contemporary stage of Corpores implementation.

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Study on Continuous Training for University Teachers: Analysis of Training Programmes

Josué ARTILES-RODRÍGUEZ

*Universidad de Las Palmas de Gran Canaria,
Islas Canarias, España
josue.artiles@ulpgc.es*

Josefa RODRÍGUEZ-PULIDO

*Universidad de Las Palmas de Gran Canaria,
Islas Canarias, España*

Arminda ALAMO-BOLAÑOS

*Universidad de Las Palmas de Gran Canaria,
Islas Canarias, España*

Victoria AGUIAR-PERERA

*Universidad de Las Palmas de Gran Canaria,
Islas Canarias, España*

ABSTRACT

This paper shows results and conclusions on the training of university teachers and provides proposals for improvement. The European Higher Education Area has meant a change in the university teaching, and thus the training of university teachers is an issue that needs to be addressed. The aim of this study was to contrast the differences and similarities of the training actions of the university teaching training in Spain. The methodology was based on a content analysis on the training programmes of more than twenty universities located in six different districts. The results show common lines in the training of university teachers, but the need to carry out training actions for specific profiles, i.e. for managers, was found. In the conclusions section, the implications for practice are discussed.

Keywords: university teaching; continuous training; documental analysis; teacher training; training needs.

INTRODUCTION

The challenge in training Researching Professors (hereinafter RPs) in the context of European convergence consists in the fact that training activities should be set out by respecting and applying the methods and activities that the lecturers should use as professionals. There must be a coherence between the teaching model that is being preached and the one that lecturers learn (De la Calle Velasco, 2004). The basic pillars of a Higher Education Institution lecturer, following the set legal regulations are determined by research, management and teaching. Nonetheless, the main aim of training university lecturers is the need of improving the lecturer's teaching method (Cordero, et al. 2014; Lacunza, 2002; Valcárcel, 2005; Zabalza 2002; Zabalza, 2016). All these cases require a training procedure that professionally prepares the lecturer. An epistemological restructuring of university teaching is necessary as well as looking into the organisational area of the institution, reason whereby the functioning of the Departments and Schools needs to be refocused (Imbernón, 2012). Depending on the organisational work culture, in other words, its decision making and ways of proceeding, this will refer to its organisational development and, of course, its social image. This change must be led by prepared managers (Hogg & Terry, 2000; Van Dick *et al.*, 2004; Rodríguez & Artiles, 2017). Therefore, the university manager must be a trained leader. Within this triple dimension of the educator as a manager, lecturer and researcher, depending on the type of lecturer, there are different points of view in order to understand the institution.

The perceived image of a lecturer is usually an inherited image. By interiorising a model of how to be a lecturer, the trend is to teach students by following, better or worse, the model of other lecturers taught during one's own experience as a student (Prieto, 2008). This learnt role may interfere in the teaching and learning process that

takes place in the classroom. The identity of the university lecturer is associated to the ways in which education is perceived, as it is built on a constant interaction between what is individual and in group, and focuses on subjective and individual processes (Sanchez, 2014).

The training plans should also take into account the different profiles of lecturers and the years they have been teaching for. It would seem that the difference between the novel and expert lecturer is that new lecturers, when they begin, tend to focus more on the contents that they must teach. Their main worry is to appear an expert in the contents being taught, answer all questions asked by the students, and have knowledge about aspects that go beyond the contents (Gros & Romaña, 2004). New lecturers usually worry about not being able to answer a student, answering vaguely or being forced to acknowledge their ignorance. Insecure beginners imagine that these answers are evasive, even though this is untrue, as they are transmitting an important message regarding the authentic learning process (Knight, 2005).

University Teacher Training (hereinafter UTT) must be a continuous and flexible process. In addition, it should take collaboration with the business and socio-political world into consideration where such action is required (Aguilera, *et al.*, 2010; Rodríguez, 1999). Likewise, a set of requirements must be met in order to optimise the results: it must promote reflexion on teaching, facilitate the exchange of experiences among peers, as this would help to train managers, join the process to an innovation project and train by means of group collaboration (Imbernón, 2012). In any case, it must be contextualised, near to the diverse disciplinary fields, focused toward innovation and teaching. This should be carried out bearing in mind at all times that the lecturer's educational task is to provoke, facilitate, guide, and help the student achieve the knowledge, abilities, emotions, aptitudes and values required (Gomez, 2010).

With regard to teacher training, it must be taken into account that the demands of a university professor demonstrate that lecturers from the Social Sciences, Politics, Behaviour and Education areas, as well as those from the Economical Sciences, Business Studies, Law fields, usually collaborate and require more training than those from the fields of Mathematics, Physics, Chemistry and Engineering (García *et al.*, 2003). This means that training and the implication of the lecturers may be determined by their field of knowledge. In order to provide an answer to these groups, various training models need to be worked on. In other words, if there are different profiles among the lecturers, there may be distinctive features regarding the learning model (García, 2000; Camarero *et al.*, 2000). Thus, this process may adopt a variety of training procedures: common training during the doctorate; modular training through plans which reply to the demands of the lecturers; or by means of a master or expertise course (Imbernon, 2012).

THE STUDY

Aim. The main aim of this paper is the analysis of the reality of the training plans and actions from a set of Spanish public universities in order to establish the common policies of these institutions. Further to this, the focus and theme of the training, the methodology, profiles and requirements of RPs to access training will be laid out together with emerging proposals of triangulation and debate with the theoretical framework.

METHOD

The analysis of the complex situation of university teacher-training plans and actions in the frame of the European Higher Education Area (EHEA) requires the application of a qualitative methodology. This perspective makes it easier to fully understand the reality, beyond the description (Sandin, 2003). This method made it possible to contrast different training focuses and provided a global view wherefrom aspects that had not previously been contemplated emerged (Taylor & Bodgan, 1984).

The procedure that has been followed is called content analysis (Bardin, 1996; Mayring, 2000). This analysis technique provides an objective and systematic comprehension of a text set out in the communications in order to thoroughly study and understand that reality. The article is based on the analysis of the existent training plans at a set of Spanish public universities.

Sample

The Universities included in the study have been selected by means of a sampling that would provide a data overload depending on the links that a more accessible text may have (Mayan, 2001; Patton, 1990). Overall, 24 public universities from 6 different regions have been analysed, which are distributed as follows: Madrid (6), Basque Country (1), Galicia (3), Andalusia (10), Canary Islands (2), Valencia (2). Their explored web pages, transparency of data and quality platforms are considered, for this purpose, the virtual universe of the sample.

Instrument

A protocol to systematically collect data was designed, based on the theoretical references and the existent training plans (Bardin, 1996). These contemplated: the university to be studied, the thematic features of the type of training, the general and specific addressees of the contents, the target field (teaching, research or management), and the specific or centralised nature of the training depending on who was offering it, the head department of the university or a specific area or department.

Procedure and data analysis

In general, it must be highlighted that two different parts have been identified. The first part identifies the authors and research on the object of the study. To this regard, the classification criteria of the thematic categories carried out was followed (Bardin, 1996); participants and access requirements to the training; how the training was oriented (lecturer, management and research competencies); and other training features of interest such as the field of knowledge and title offered, modalities, organiser. The second part consisted in accessing the reality of the different Spanish universities and carry out a documental analysis on the aforementioned categories.

RESULTS

Due to the high volume of data, a synthesis of the results is offered of the different universities divided by Region or Districts.

Andalusia

Quality teaching and the professional development of university professors are some of the aspects included within the so-called Quality of Education. This is highlighted by both the European Association for Quality Assurance in Higher Education (ENQA) and the European Union with the H2020. The region of Andalusia insists on these factors and they are provided within its regional regulations, the Legislative Decree 1/2013 of the 8th of January, on the approval of the Consolidated Text of the Andalusian Universities Law, which refers to the permanent training of lecturers as well as the direct competencies of the universities.

At the *University of Almeria (UAL)*, the teacher training plans are annual. The contents of the Teacher Training Plan focus on the acquisition of a second language, in-depth study of research-related aspects, knowledge for coordination and tutorial action or training in directive capacities and university management, among others. Furthermore, it offer a training programme for new lecturers.

The Teacher Training Plan of the *University of Cadiz (UCA)* is annual. The contents are general and focus on covering the needs of the areas of teaching, research and management, as well as offering Language Training.

The *University of Cordoba (UCO)* has a multi-year Teacher Training plan, the latest corresponding to academic year 2015-2018. The Plan is structured into three types of training. There is an initial training for new lecturers who have been teaching for less than five years; a permanent training for experienced professors in order to establish teaching competencies and an efficient use of the methodology; and a specific further teacher-training course at centres.

The *University of Granada (UGR)* has developed a biennial Teacher Training Plan. The current plan available corresponds to academic year 2016-2018 (Plan FIDO UGR 2016-2018). UGR's Training Plan is divided into levels and modalities: basic actions of teacher training and advanced actions of education innovation. The

training and innovation offer provided in the FIDO UGR Plan includes various formats and takes into consideration an array of programmes with the participation of expert trainers from the UGR and external collaborators with an interesting and extensive history.

The contents of the Continuous Training Plan of the *University of Huelva (UHU)* are divided into contents for the improvement of the didactic methodology, digital contents, further training for research and university management training. The training actions are made up of different modalities: courses, workshops, seminars, round tables, symposiums and debates that may be presented in different formats (taught, online or hybrid).

The *International University of Andalusia (UNIA)* has a yearly Teacher Training Plan called the Education and Digital Innovation Plan. The training lines and actions focus on E-learning and Educational Innovation training actions on the online platform and other digital tools. In addition, training is promoted with open self-training contents (taken from lecturer courses).

The Teacher Training Programme offered by the *University of Jaen (UJA)* focuses on developing actions drawn up to foment innovation, updating and renovating the lecturers education methodologies, as well as coordinating and promoting actions and activities for teacher training. The programme is coordinated by the Secretary of Education and Teacher Innovation. Assessment is carried out through satisfaction surveys.

The *Univerisy of Malaga (UMA)* has a yearly Teacher Training Plan. The contents of this training plan are based on the learning of languages, methodology, digital competencies and research training. The Training Plan is offered by the Vice-chancellor of Lecturers, and is multi-year, the current plan belonging to the academic year 2017-2019.

Regarding the *University of Seville (US)*, the Teacher Training Plan is carried out by means of the Integral Plan for excellent professors. Its aim is to achieve educational excellence in innovation, further training and the assessment of competencies for the development of the professional activity of the RP. It takes place annually. The proposal of Training Plan of the University of Seville is organised by means of its own teacher development plan, called the Integral Plan for Excellent Professors and is carried out by calls (it is currently on its 3rd edition). Training is divided into different phases so that it is easier for the lecturer to make the most of, follow and remain in the teacher improvement programmes. All RPs may participate with a current contract for teaching official university degrees which are taught with priority at its centres, and at centres affiliated to the University of Seville. This Teaching Plan is coordinated by the Vice-chancellor for Academic Affairs.

Canary Islands

Since 2003, the *University of La Laguna (ULL)* has organised training activities in order to support university professors with the education improvements and innovations contemplated in the European Convergence Process. To date, there have been 12 teacher-training programmes, each for an academic year (since 2004/2005 to 2015/2016). Each academic year analyses the training needs of the university professors by means of a survey with 17 questions, organised into 9 main areas or modules: Information Technologies and Communication, Education Methodology, Languages, Research, Management, Social and environmental sustainability, preferences related to hours, turns, seasons and a free question on individual proposals. This training is organised by the Vice-chancellor of Education.

With regard to the *University of Las Palmas de Gran Canaria (ULPGC)*, and in accordance with the document created on Teacher Training for the year 2008/2009, a plan emerges as the answer to the situation of lecturer and research training at the ULPGC. As there was no Training Plan for RPs until that year that organised the different courses offered by the Departments and Centres, a training project was created to improve the ULPGC's offer. This plan put forward an Initial Training programme for new lecturers with a psycho-educational, instrumental and management nature, and oriented toward the improvement of the teaching quality of lecturers with less than three years of experience; a Basic Training Programme (EHEA, ITCs and Psycho-education); a teaching, research, and management-direction and language capabilities training course. The Plan

is completed with support from Specific Courses carried out by lecturers from outside the ULPGC. At the moment, the Teacher Training Plan is organised by the Vice-chancellor of Titles and Permanent Training.

Galicia

The *University of Santiago de Compostela* has a general training offer, which includes all the lecturers at the institution with matters related, among others, to the planning of the teaching and learning process, assessment, tutoring, attention to diversity in the classroom, professional development and ITCs applied to university teaching.

The *University of Vigo* has a similar programme, where training is also aimed at all the lecturers generally, although it scopes more active methodologies related to cooperative learning, teaching competencies, language development and the *Flipped Classroom* model for university education.

Regarding the *University of La Coruña*, it has two different publics divided by two training offers: the Teaching Support Plan (TSP), which is a general training course, and the Initial Training Plan (ITP) for lecturers will under four years of experience.

Valencia

At the *University of Valencia*, each term the *Servei de Formació Permanent i Innovació Educativa* (Permanent Training and Educational Innovation Service) makes a calling for the Services and Administration Personnel (SAP) and Lecturing and Research Personnel (LRP) of the university. With regard to the LRP, it is organised as follows:

- Continuous training
- Own offer
- Training upon demand. This type of training is based on the organisation of activities starting from specific training petitions from the personnel (SAP and LRP) of the different campus, centres, departments, institutes, services and/or units of the University of Valencia.

The *University of Alicante* is in the process of updating the design of the 2018-2020 academic year. The actions currently in place focus on the Research of University Teaching, the Tutorial Action Programme and the general Teacher Training Programme.

Madrid

The training of RPs is analysed for the following universities: Complutense, Autonoma, Politecnica, the University of Alcalá, Carlos III, and Rey Juan Carlos. In some cases, Teacher Training directly depends of a Vice-chancellor while in other instances it is provided by the Institute of Education Sciences (ICE).

At the *Complutense de Madrid University (UCM)* and the *Autonoma de Madrid University (UAM)*, training focuses on the internationalisation of the education and training in information technology. These universities have Teacher Training Programmes aimed at all professors and their target is to work on the general competencies of the professors.

The *Polytechnic University of Madrid (UPM)* organises its training plans from the ICE (Institute of Education Sciences), an Initial Training (aimed at young lecturers who are starting out in teaching) and a Continuous training (with short-term activities such as seminars, workshops, congresses, round tables on teaching matters, very occasional, or contents requested by centres, departments or lecturers). These initiatives have actions aimed at increasing the quality of teaching by means of training and continuous further training of its professors, educational research in different fields, technical-educational assessment, innovation in methodologies and the introduction of technologies in the learning process, among other activities.

Likewise, the *University of Alcala* presents an initial training course for lecturers that is aimed at first year UTT interns and focuses on aspects related to university teaching and the context.

The *University of Carlos III* promotes the continuous training of its professors as well as education innovation. In the recent years, it has offered many MOOCs (Massive Open Online Courses) on international platforms such as edX and miriadaX. It also uses this methodology to improve the quality of taught education by means of SPOCs (Small Private Online Courses).

The Digital Education Innovation Centre: URJC online, is responsible for the education training at the *University of Rey Juan Carlos*. This centre is a university service and abides by the University's Statutes. It provides support to professors and research by using human and material resources. It focuses on research and innovation in E-Learning and provides technical-educational services aimed at covering the needs of lecturers and training in educational technology.

The Basque Country

The University of the Basque Country has a variety of training offers, depending on the addressees and the actions, and each has a different name: *FOPU*, *ERAGIN*, *IRAKER* and *AKADEME*. The Teacher Training for University Professors (FOPU) is a training programme aimed at the lecturers of the university, and it scopes general contents regarding teaching, research and the professional development of lecturers. The Professor Training Programme in Active Educational Methodologies (ERAGIN) is aimed at full time lecturers and focuses on achieving capabilities related to learning through practise, stepping away from the traditional theoretical lecturer. The Professor Academic Competencies Development Programme (IRAKER) is targeted at doctorate professors in process of accreditation, and looks at the planning of lectures and basic research aspects. The Leadership Programme for academics (AKADEME) is oriented towards professors who are in the process of occupying a management position or have recently taken one up. The aim of this training is to improve leadership capabilities, communication and the management of conflicts. Training is carried out in taught sessions that analyse different cases and with coaching techniques. Its development abides by regulations and the Plan is implemented and managed by the Managers, through the Vice-managers of Personnel and its Cabinet of Studies, Planning and Training.

CONCLUSIONS

Having analysed the training actions at the above-described universities, there is an enormous worry regarding the improvement of university teaching by means of providing the lecturer the most appropriate tools to carry out its tasks.

It is impossible to find models or sole approaches of UTT, although the existence of national and regional systemic approaches could be of interest, as they generate a global framework whereby the policies are developed (Valcarcel, 2005; Del Valle, 2009; Aramburuzabala *et al.*, 2013). Nonetheless, the different university training plans that have been presented herein also have in common basic structuring aspects, with contents focused toward an improvement of the educational methodology, the development of the base of the teaching profession, instrumental contents, the development of research and the development of university management. There are cases where the training programmes have a didactic approach that continues to position the professor as a technician (Chocarro *et al.*, 2001), instead of reflexing on the current demands of the EHEA, which focuses on the learning process of the students.

With regard to the focus and contents of the training courses, it has been found that there is a diversity of approaches depending on the nature of each of the universities. However, there are general approaches based on methodology, aimed at improving the teaching and the use of resources. Another aspect common to most of the training plans is the further training in languages, something that is necessary due to the research profile of the RP and the need of attracting resources and adapting to the diversity of students that may come from throughout the European Higher Education Area. Many universities, such as that of the Basque Country or the University of Las Palmas de Gran Canarias offer courses aim at the knowledge of accreditation possibilities depending on the different figures that are provided in the legislation and the accreditation model of the Spanish National Agency for the Evaluation of Quality and Accreditation (ANECA). Most of these plans include further training courses

on methodology based on ITCs, currently known as LKTs (Learning and Knowledge Technologies), and focusing the methodology towards an active participation of the students.

This diversity of focuses is in line with the approaches of Garcia & Maquilon (2010) and Torra *et al.* (2002) who identify seven competencies as the most recurrent in teacher training: interpersonal, methodological, communicational, planning and management of teaching, team working and innovation. To this regard, there is a general coincidence that the training described responds to this type of competencies. Hence, it can be understood that the competence profile should go beyond the micro-context of the classroom and into the institutional context by means of the management and/or organisation of events, and the social context through transfer.

It would appear that training in aspects related to the tutoring of a student is not significant in the training plans. It is no doubt reduced to the academic dimension and the improvement of the learning process in the context of a course or module. Occasionally, it is considered necessary for support in the procedures for defining coherent training itineraries with the academic and professional development interests. There is special interest regarding the Personal Learning Environments to optimise the educational process. Furthermore, there is a need of orienting the training process for university lecturers in this direction, as it would be an advantage for their professional practise and for the results of students (Lopez *et al.*, 2017).

Regarding the participants and requirements, it can be stated that the teacher profile of the courses and actions of the training plans include all RP categories. Training focused on experience is proposed, carrying out training proposal linked to the years of teaching in intervals, in most cases below or equal to five years of teaching experience. In other cases, the profile of the participants is limited to the functions that the university develops. This is the case of managers who may attend further training courses in order to optimise their time while occupying this unipersonal position, although this type of training is limited.

Training for university management is carried out at few Spanish universities. Those responsible for training do not realised the need of training university staff at all levels. There are numerous conflicts in higher institutions and the difficulties and inconveniences that their managers need to overcome in order to achieve a certain objective. These limitations, and their necessary training, are organised around the decision making carried out from the different levels of the university; the procedures required for the management; the lack of legal support to staff members; the non-acceptance of shared targets by the members or management teams; and the organisation of the time dedicated to management tasks (Rodriguez & Artiles, 2016). The training must contemplate actions oriented towards the management of the higher institution, as this would lead to an improvement of the current management processes. Managers are claiming more training, especially in terms of solving conflicts, the attraction of resources and leadership in times of change. Hence, the need of viewing certain training actions in the training plan of the University, aimed at heads of Departments, Deans, Secretaries, Vice-chancellors, Vice-deans, etc., as well as all interested lecturers who may become part of the managing team at some time.

The modalities marked out for the development of the training actions in most of the cases analysed are courses, seminars and workshops, and are carried out in various formats (taught, online or hybrid). Nonetheless, whether the use of these modalities will improve teaching is a matter that should be reflected upon (Rodriguez, 2003). In definite, training actions present a diverse existential prescriptive orientation, as well as the ways of organising the educational development of university lecturers, with short-length training actions, coinciding with Feixas *et al.* (2003).

In general, the petitions of university lecturers are not taken into account per field of knowledge. It is not considered that the training petitions and implications of the lecturers may be determined by the belonging to a field of knowledge as proposed in the research carried out by Aciego *et al.* (2003). Moreover, there is no distinction, in general, between in design of the training and the learning context which may vary with the genre and degree, according to suggestions put forward by Suarez *et al.*, (2000). The location where the university

lecturer's training is designed and carried out is still the Institutes of Educational Sciences, Vice-chancellors who have taken on these responsibilities and the Units of Teaching Innovation or Training and Assessment.

With regard to the limitations, it must be taken into account that the results put forward in this paper and the conclusions that have been reached, although based on approaches backed by the studied scientific literature, are only a fragment of the reality. The conclusions of this study answer the training needs of lecturers of higher institutions; nonetheless, care must be taken when extrapolating the totality of the results to all centres. For this reason, the external validity of this research paper may only be generalised to contexts similar to those studied herein.

On the other hand, although this paper analyses many Universities and Spanish regions, this paper will be enriched with the analysis of other institutions in order to favour a general framework with regard to the training of university lecturers in the frame of the EHEA. In addition, only fragment of Spanish public universities have been analysed, however it is considered of interest to learn more about the training plans offered in private institutions.

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System Architecture of Business Intelligence to Aun-Qa Framework for Higher Education Institution

Thada JANTAKOON

*Department of Computer Science,
Faculty of Science and Technology
Rajabhat Maha Sarakham University, Thailand
thada@cs.rmu.ac.th*

Panita WANNAPIROON

*Department of Information and Communication Technology for Education,
Faculty of Technical Education
King Mongkut's University of Technology North Bangkok, Thailand
panita.w@fte.kmutnb.ac.th*

ABSTRACT

This research aims to 1) design the system architecture of business intelligence to AUN-QA Framework for higher education institution, and 2) assess the system architecture of business intelligence to AUN-QA Framework for higher education institution. The research process is divided into 3 stages: 1) study and analyze the relevant documents and researches of system architecture of business intelligence to AUN-QA Framework for higher education institution, 2) design the system architecture, 3) assess the appropriateness of the system architecture. The samples are 10 experts selected by purposive sampling. The data is analyzed by means and standardized deviations statistically. The research result shows that 1) the system architecture of business intelligence to AUN-QA Framework for higher education institution has consisted of 2 key components which are 1.1) the system architecture of business intelligence, 1.2) AUN-QA Framework for higher education institution, and 2) the result of assessment of the system architecture of business intelligence to AUN-QA Framework for higher education institution is rated as absolutely appropriate in overall ($\bar{x}=4.51$).

Keywords: Business Intelligence, AUN-QA, Higher Education

1. INTRODUCTION

Quality in higher education is not a simple one-dimensional notion about academic quality. In view of the varied needs and expectations of stakeholders, quality in the undergraduate study can be said to be a multi-dimensional concept. ASEAN University Network (AUN) recognizes the importance of quality in the undergraduate study, and the need to develop a holistic quality assurance system to raise academic standards and increase education, research, and service among its member universities. In 1998, it mooted the AUN-QA Network which led to the evolution of AUN-QA Framework. Since then, the system has been promoting, developing, and implementing quality assurance practices based on an empirical approach where quality assurance practices are tested, evaluated, improved and shared (ASEAN University Network, 2015). The continuous evolution of higher education institution in a growing competitive environment necessarily requires appropriate decisions to be made, adequate, based on significant information and as accurately predicted as possible. In the current practice, the higher education institutions have defined sets of technologies and processes that provide decision support the management process so that the administrators could set up plans and make any decisions more efficiently (Srima et al., 2015; Rodmunkong et al., 2015). These solutions for decision support (Renu et al., 2013) are based on integrated management information systems (Shah, 2014), including specialized business intelligence (Horkoff et al., 2012; Jooste et al., 2014; McBride, 2014 ; Moro et al., 2015) BI modules supporting of decision making. According to AUN-QA Framework, executives in higher education institutions in Thailand are required to develop patterns of higher education institution standards that involve developing suitable plans, setting technological strategies and should be using business intelligence tools such as visualization, decision support system, and knowledge discovery as tools to business analytics tools. The reason mentioned above, the researchers are interested in the analyzing of the compositions of the system architecture of business intelligence to AUN-QA Framework for the higher education institution.

2. PURPOSE OF THE STUDY

- 1) To design the system architecture of business intelligence to AUN-QA Framework for higher education institution.
- 2) To evaluate the system architecture of business intelligence to AUN-QA Framework for higher education institution.

3. LITERATURE REVIEW

3.1 Business intelligence

Business Intelligence (BI) aims to support business users to make decisions by providing methods and tools to easily access and manage their information (Horkoff et al., 2012; McBride, 2014; Moro et al., 2015). This is performed by means of data collection, storage, distribution and exploitation (Jooste et al., 2014). Business Intelligence involves three key steps, extraction, transformation and load (ETL). These steps are not necessarily linear and depend on the development of a data design. The metadata model influences what data is extracted, but also is influenced by what data is available, and the nature of the questions being asked by employees and the processes being diagnosed. Extraction is inevitably a process of selection: selection of sources and data within sources. Data transformation involves resolving inconsistencies, validating data ranges, removing irrelevant data and checking for accuracy. Loading concerns populating the target Business Intelligence database with the structured information. Each step involves interpretation and the imposing of the framework on the data, driven by the goals and purposes of the Business Intelligence team. The loaded Business Intelligence target database is then made available to power users and ordinary users through the application of intelligent tools for structuring queries.

3.2 Management Levels and Decision Making

The topic of decision making is directly related to management and to the various management levels found in an organization. A popular way to identify different management levels is through the management pyramid (Simon, 2015) (Figure 1).



Figure 1. In the classic management pyramid, three management levels are identified (Simon, 2015).

The focus of strategic management is on the performance of the entire organization. Most of the decisions made on this level concern the entire organization. Some examples are: Should we acquire a new organization? Should we enter new markets? Should the organization be flattened? Should we outsource all IT? Decisions made by strategic management have long-term consequences and objectives. Tactical management is concerned with planning for and controlling the units in an organization, such as marketing, sales, and production. Normally their decision making has an impact on the short or medium term. Operational management deals with the day-to-day operations of the organization. Examples of decisions made on this management level are: How many pallets of soda should be delivered at a particular store the next day? Are there enough drivers scheduled for all the parcels to be delivered? What measures should be taken now that an incoming airplane with many passengers who have to make connecting flights has been seriously delayed?

3.3 Data Warehousing

Data warehousing provides architectural science and tools for business executives to methodically organize, understand, and use their information to make strategic decisions. Data warehouse systems are convenient tools in today's competitive, fast-evolving world. (Han et al., 2012) Data warehouse systems use back-end tools and

utilities to populate and refresh their information. These tools and utilities include the contributory functions:

- Data extraction, which typically gathers data from multiple, disparate, and external sources.
- Data cleaning, which detects errors in the data and corrects them when possible.
- Data transformation, which converts data from legacy or host form to warehouse form.
- Load, which sorts, summarizes, consolidates, computes views, checks integrity, and builds indices and partitions.
- Refresh, which broadcast the updates from the data sources to the warehouse.

3.4 Data Marts

A data warehouse is really one large data store, all the reporting and analytical tools access that one data store, which can lead to a query workload that's too intense for the database server managing the data warehouse. For this reason, many organizations have developed data marts to offload the query workload. Each data mart is developed for a specific group of users, normally all users with comparable data needs. This means that a data mart contains a subset of all the data from the data warehouse. And quite often, whereas a data warehouse contains the lowest level of data, a data mart contains a slightly aggregated version of all that data. If data marts are in place, most reports run on one of those data marts instead of on the data warehouse, thus offloading the query workload (Simon, 2015). The main advantage of using a data mart-only architecture is development speed. When an organization starts from scratch, developing a data mart for a small group of users requires less time than when a data warehouse is developed for a large group of users.

3.5 Business Analytics

Business analytics is about leveraging value from data. Instead of being referred to as the 'sludge of the information age,' data has recently been deemed 'the new oil.' While data can be employed for purposes such as detecting new opportunities, identifying market niches, and developing new products and services, it is also notoriously amorphous and hard to extract value from. Figure 2, which presents a structural framework for deriving value from business analytics, indicates how extracting value from data requires aligning strategy and desirable behaviors to business performance management in conjunction with analytic tasks and capabilities (Acito & Khatri, 2014). A strategy is a purposeful plan of action that requires making choices regarding the deployment of resources (Mintzberg, 1987). Davenport et al. suggest that a strategic business case for an analytics initiative can be used to create organizational support and obtain funding. Desirable behaviors refer to beliefs and culture that are embodied in the corporate value statement, mission statement, rituals, and structure. It is the unique desirable behaviors in an enterprise that create value (Weill & Ross, 2004). Business Performance Management (BPM) is based on the balanced scorecard methodology, which is a framework for defining, implementing, and managing an enterprise's business strategy by linking objectives with factual measures. The objective of BPM is to optimize the overall performance of an organization.



Figure 2. Structural framework for business analytics (Acito & Khatri, 2014)

3.6 Online Analytical Process (OLAP)

OLAP (On Line Analytical Processing) systems have been proposed to improve decision making process due to analysis of large datasets (Codd et al., 1993). This kind of software is designed to explore easily and quickly multidimensional data (Rivest et al., 2005). The word OLAP can be associated with a process, a kind of system or a kind of data (Jerbi et al., 2009). A basic Relational OLAP (ROLAP) system architecture consists of (1) a relational Data Base Management System (DBMS), that stores data in accordance with data warehousing paradigm; (2) an OLAP server that implements the multidimensional model and OLAP operators on top of the DBMS; (3) an OLAP client, that combines and synchronizes tabular and graphical displays and allows query building; and (4) an ETL tool that extracts data from heterogeneous sources, transforms them and loads them into a data warehouse.

3.7 Ad-Hoc queries and reporting

Ad-hoc queries allow users to request, in real time, information from the computer that is not available in periodical reports. Such answers are needed to quicken decision making. The system must be intelligent enough to understand what the user wants. Simple ad-hoc query systems are often based on menus. More intelligent systems use structured query language (SQL) and query-by-example approaches

3.8 Data Mining

Data mining is the capitalization of specific algorithms for extracting patterns from data. It allows the automated discovery of implicit patterns and interesting knowledge hidden in big amounts of data (Jiawei and Kamber, 2001). Data mining helps organizations to focus on the most important information and knowledge available in their existing databases. Data mining has three main objectives: description, prediction, and prescription. Whereas description focuses on finding human-interpretable patterns describing the data, prediction involves using some variables or fields in the database to predict unknown or future values of other variables of interest (Fayyad et al., 1996). On the other hand, definition focuses on providing the best solution for the given problem (Evans, 2013). These objectives can be achieved by using many data mining tasks, including classification, clustering, prediction, outlier detection, optimization, and visualization. These tasks differ with the type of problem to be solved as follows:

- Classification focuses on mapping data to predefined qualitative discrete attribute set of classes, which could be binary or multi-class.
- Clustering focuses on segmenting the data to some meaningful classes or groups.
- Prediction focuses on finding a future numerical value (forecasting) or non-numerical value (classification).
- Outlier Detection focuses on finding the data that significantly deviates from the normal.
- Optimization focuses on finding the best solution given some resources.
- Visualization focuses on the visual presentation and understanding of data.
- Regression focuses on estimation of a dependent variable from a set of independent variables.

3.9 Text Mining

Text mining is the new frontier of predictive analytics and data mining. Eric Siegel in his book Predictive Analytics (Siegel, 2013) provides an interesting comparison: if all the data in the world was equivalent to the water on earth, then textual data is like the ocean, making up a majority of the volume. Text analytics is driven by the need to process natural human language, but unlike numeric or categorical data, natural language does not exist in a “structured” format consisting of columns (of attributes) and rows (of examples). Text mining is therefore the domain of unstructured data mining.

3.10 Web mining

Web mining, in general, is the application of data mining techniques to discover patterns from the web (Baraglia and Silvestri, 2007; Chakrabarti, 2002; Eirinaki and Vazirgiannis, 2003; Liu, 2007). For example, using association analysis to analyze users’ usage data, which records the user’s behavior when the user browses or makes transactions, on the web site and the results can make the content of the website to fit correctly with the users’ needs. Different with data mining, there are no existing data available for web mining. Web miners can use name or terminology to search and to collect data. There are lots of valuable information on the web, but it is not

easy to find it. Search engines provide the initial act needed to conduct more complex form of web mining.

3.11 AUN-QA Framework

The AUN-QA Framework for higher education institution comprises strategic, systemic and functional QA as illustrated in Figure 3.

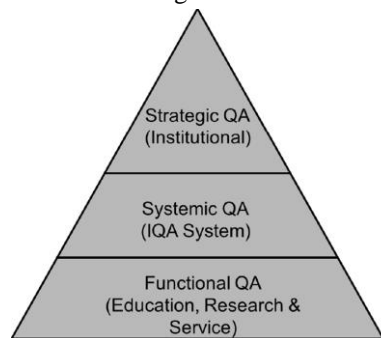


Figure 3. AUN-QA Framework for Higher Education Institution (ASEAN University Network, 2015)

AUN-QA Framework for Higher Education Institution are subjected to both internal and external QA assessment. Internal QA ensures that an institution, system or programme has policies and mechanisms in place to make sure that it is meeting its own objectives and standards. External QA is performed by an organization or individuals outside the institution. The assessors evaluate the operation of the institution, system or programme in order to determine whether it meets the agreed upon or predetermined standards. The AUN-QA models are applicable to the diverse universities in ASEAN which are also aligned to both regional and international quality assurance frameworks.

4. METHODOLOGY

- 1) Study and analyze the relevant documents and researches of system architecture of business intelligence to AUN-QA Framework for higher education institution.
- 2) Design the system architecture of business intelligence to AUN-QA Framework for higher education institution
- 3) Assessment of the appropriateness of the system architecture of business intelligence to AUN-QA Framework for higher education institution. The statistics utilized in this study were arithmetic means (\bar{x}) and standard deviation (S.D.) following the weighing criteria of appropriateness of the design using five rating scales of Likert

5. POPULATION AND SAMPLES

- 1) Population:
Population is the experts in the field of business intelligence, and quality assurance for higher education.
- 2) Samples Groups:
Samples were selected from the experts in the population using purposive sampling technique. The 10 experts comprised of business intelligence, and quality assurance for higher education. They are highly-experienced experts in these fields for at least 5 years.

6. RESULT

Stage 1: The system architecture of business intelligence to AUN-QA Framework for higher education institution is composed of 2 key components which are:

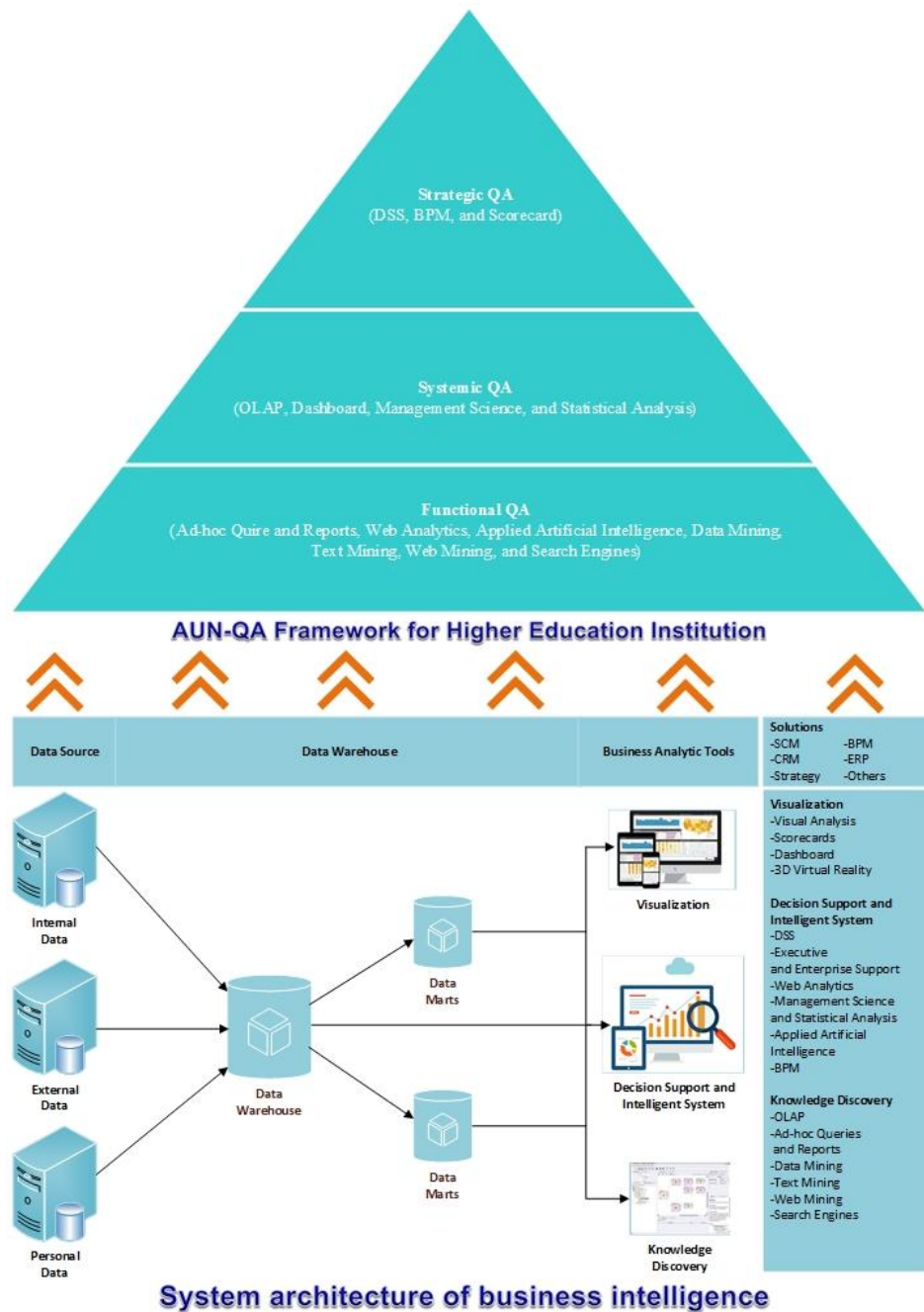


Figure 4. System architecture of business intelligence to AUN-QA Framework for higher education institution

1) System architecture of business intelligence can be classified into Data Source, Data Warehouse, and Business Analytic Tools. Data Source can be categorized into Internal Data, External Data, and Personal Data. Data Warehouse can be subdivided Data Warehouse and Data Marts. Business Analytic Tools includes Visualization, Decision Support System and Intelligent System, and Knowledge Discovery. Examples of Visualization are Visual Analysis, Scorecard, Dashboard, and 3D Virtual Reality. Decision Support System and Intelligent System includes Decision Support System, Executive and Enterprise Support, Web Analytics, Management Science and Statistical Analysis, Applied Artificial Intelligence, and Business Performance Management. The examples of Knowledge Discovery are OLAP, Ad-hoc Query and Reports, Data Mining, Text Mining, Web Mining, and Search Engines.

2) The AUN-QA Framework for higher education institution comprises strategic, systemic and functional QA. There are many types of technologies which are used to support AUN-QA Framework for higher education institution. Strategic QA that Business Analytic Tools supports related technologies including DSS, BPM, and

Scorecard. Systemic QA that Business Analytic Tools supports related technologies including OLAP, Dashboard, Management Science, and Statistical Analysis. Functional QA that Business Analytic Tools supports related technologies including Ad-hoc Quire and Reports, Web Analytics, Applied Artificial Intelligence, Data Mining, Text Mining, Web Mining, and Search Engines.

The system architecture of business intelligence to AUN-QA Framework for higher education institution runs on data that have been processed to information and knowledge. Transformation of data into knowledge and solutions is accomplished in several ways. In higher education institution, it resembles the process shown in Figure 4. It starts with data source and new data collection from various sources. These data are stored in databases. Then the data are preprocessed to fit the format of data warehouse or data marts, where they are stored. Users then access the warehouse or data mart and take a copy of the needed data for analysis. The business analytic tools done with data analysis are done with data analysis and mining tools with intelligent systems.

Stage 2: The result of appropriateness measurement of the system architecture of business intelligence to AUN-QA Framework for higher education institution

Table 1: Explain the architecture assessment

Assessment Topics	\bar{X}	S.D.	Assessment Result
1. Component Consistency Requirements	4.87	0.35	Highest
2. Connector Consistency Requirements	4.70	0.45	Highest
3. Component-Connector Compatibility Requirements	4.45	0.37	High
4. Configuration Requirements	4.25	0.26	High
5. Style Restriction Requirement	4.30	0.48	High
The overall results	4.51	0.38	Highest

In Table 1, the research found that the system architecture of business intelligence to AUN-QA Framework for higher education institution was evaluated at the highest level in component consistency requirements and connector consistency requirements. The component-connector compatibility requirements, configuration requirements and style restriction requirement were at the high level. The system architecture of business intelligence to AUN-QA Framework for higher education institution showed overall results at highest level (arithmetic mean=4.51, standard deviation = 0.38).

7. CONCLUSIONS

Research results exhibited that the system architecture of business intelligence to AUN-QA Framework for higher education institution was appropriated and fit to higher education institution and executives. Through BI solution, it is expected the university's management able to handle reporting among variety of users and manage huge amount of data to be transformed into valuable real-time information. Furthermore, the system architecture of business intelligence to AUN-QA Framework for higher education institution also can facilitate the university to structure the process of improving the BI solution and helps to implement the university's BI strategy in a very cost effective way. Eventually, BI projects will be more successful, cost less and deliver more value to the university's BI users. Hence, this initial the system architecture of business intelligence to AUN-QA Framework for higher education institution can be used as a guideline as it gives better definition for strategic vision in higher education institution. Furthermore, we believe this initial architecture is that the importance of quality in higher education.

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System of Continuous Professional Development for Language Teachers in Kazakhstan: Issues and Perspectives

Oxana SYURMEN

Suleyman Demirel University, Kazakhstan
oxana.syurmen@sdu.edu.kz

Maira ZHOLSHAYEVA

Suleyman Demirel University, Kazakhstan
maira.zholshayeva@sdu.edu.kz

Bayan KERIMBEKOVA

Suleyman Demirel University, Kazakhstan
bayan.kerimbekova@sdu.edu.kz

ABSTRACT

Changing educational paradigms require teachers acquiring new skills at different stages of their teaching careers. System of continuous professional development (CPD) serves as a support to those teachers who want to be up-to-date with the latest achievements in the sphere of education and are willing to enhance knowledge of the subject they teach and increase or develop new skills. It is especially important for language teachers, as language itself and approaches to its teaching are constantly changing and being aware of the changes will help language teachers develop as professionals. Notwithstanding the fact that CPD system for teachers in Kazakhstan suggests great opportunities for professional development, it is aimed at teachers in general and language teachers' needs are addressed not in all the regions and on the regular basis. The research explores opinions of language teachers working in the sphere of secondary and higher education on issues and perspectives of the continuing professional development system in Kazakhstan.

INTRODUCTION

The continuous professional development system in Kazakhstan has a very complicated structure with a number of organizations regulating and suggesting different courses and opportunities for professional development. The CPD system is regulated by the laws and orders of the Ministry of education and regional departments of education responsible for administration of the laws and orders. The system of continuing professional development includes special organizations for training in-service teachers, such as national and regional centers for continuing professional development of teachers and other professionals working in the sphere of education, short-term courses suggested by national and private universities and the centers for professional development, internships suggested by government as well as by non-profit organizations, seminars and conferences addressing methodological issues organized by universities, regional departments of education, teacher associations and other educational organizations. Teachers also have the opportunity for self-education through participation in webinars and online open courses. However, the question of teaching quality and therefore the quality of education in general is still being discussed in connection with the problem of assessing teachers' knowledge of subject matter (language in our case) and methods of its teaching and ways of motivating teachers to develop professionally (Koybagarov, 2009). The diversity of courses and range of opportunities still do not prove effective in reaching all the language teachers and providing the quality of their language and methodological skills and knowledge. The other question is addressing students' outcomes through continuous professional development of teachers as well as "teachers' individual growth and fulfillment" (Borg, 2015). In this regard it is necessary to find out the reasons why not all the teachers use the opportunities of professional development, what kinds of CPD will better meet the needs of language teachers and learners, and the ways of involving and motivating language teachers to acquire new skills and develop professionally.

LITERATURE REVIEW

Padwad and Dixit define continuous professional development as a “planned, continuous and lifelong process whereby teachers try to develop their personal and professional qualities, and to improve their knowledge, skills and practice, leading to their empowerment, the improvement of their agency and the development of their organisation and their pupils” (Padwad and Dixit, 2011: 10). Thus it is obvious that CPD is a “critical element in successful educational systems, enhancing teacher quality, organizational effectiveness and student outcomes” (Borg, 2015). Kazakhstan has always had a mandated framework of continuous professional development supposing teachers to have professional development courses at least once in five years and publish some articles sharing their teaching experience to be able to get a higher rank as a teacher. The government have always suggested conventional options of CPD such as courses, lectures or seminars. As it was mentioned before there are some state organizations responsible for continuous professional development of school teachers and university staff. According to the order of the minister of education (2004) organizations for in-service teacher training responsible for teachers’ continuing professional development have the following functions: 1) development and improvement of different forms of educational services; 2) cooperation with different local and foreign organizations in order to provide better opportunities for both in-service and pre-service teacher training; 3) professional development of university staff.

Changing educational paradigms, life-long learning paradigm in particular, has changed the understanding of CPD in Kazakhstan, which is reflected in the “State program for Education development for 2011-2020” (2010). The “Conception of continuous professional development for “new formation” teachers in Kazakhstan” (2005) and the “Conception of higher education for teachers” (2005) developed by the government introduce the new term “new formation teacher” who is defined as intellectually developed, creative personality able to think reflectively, having professional skills, teaching talent, and ambition to develop professionally... (2005). “New formation teachers” are required to have profound knowledge of the subject they teach, methods of teaching the subject, pedagogy and psychology as well as be motivated to grow professionally and intellectually. These new trends prompted establishment of new national center for professional development “Orleu” which having considered the best continuous professional development practices designed new short and long term courses for teachers combined with teaching practice and support of teachers after the courses, which helps to make CPD an ongoing process rather than a series of periodic events as it used to be before.

“Nazarbayev intellectual schools” are also involved in developing CPD programs for teachers and training in-service teachers. As CPD programs are developed for teachers with different needs there are programs at three different levels and all the teachers in Kazakhstan are planned to have the courses within some period of time (for instance, 27582 teachers attended the courses in the period from 2012 to 2015 (Akhmetova, 2015)). The courses are aimed at all school teachers regardless of the subject they teach and give information about action research, lesson study and other contemporary strategies of professional development and new trends in teaching. Mathematics and Science teachers also attend English and CLIL courses.

The idea of trilingual education has changed CPD programs for language teachers. Kazakh, Russian and English language teachers are now tested for their language proficiency. Special educational program for CPD of English teachers was developed in 2016. CPD system is becoming more context bound, which according to Borg (2015) is the most effective way of its successful implementation. In some regions a special multi-staged program for language teachers’ professional development is suggested, which will help language teachers to improve first their language skills and then language teaching skills. The program aims at preparing English teachers to getting TKT and CELTA certificates. Moreover, preparation courses for these exams are sponsored by regional government.

A great range of CPD options described by different scholars (Borg, 2015; Prince and Barrett, 2014) is available for teachers in Kazakhstan. However, many of the options, such as joining an online teacher forum or course, action research or presenting at the conference, which are based on a teacher’s ability to reflect over their experience and enthusiasm for professional self-development are not much used. Vlasenko and Koryagina (2016) state that such issues with continuing professional development can be avoided through interaction

between schools, universities training pre-service teachers and continuous professional development system training and supporting in-service teachers.

DATA COLLECTION AND ANALYSIS

The study was conducted in Kazakhstan among the teachers from different regions of the Republic. This study is a small-scale research using both qualitative (interview) and quantitative (questionnaire) methods in order to be able to triangulate the research results. The participants of the study were 22 English teachers. 10 of the teachers are currently teaching English at university and the other 12 teach English at school. We decided to include teachers of English from both secondary and higher education institutions to be able to see if English teachers in different educational institutions have the same issues with continuous professional development. All of the participants have teaching experience for more than three years, so all of them have had an experience with continuous professional development.

An online questionnaire with twenty yes / no and open-ended questions was developed in order to find out the answer to the following research questions: What are the issues of CPD perceived by English teachers? What are the CPD options considered to be good / adequate by English teachers? To triangulate the results we also interviewed five teachers to get better understanding of the reasons why the teachers considered some aspects of CPD system to have issues and why some continuing professional development options seemed better than others. The interviews were face-to-face structured interviews, which means all the interviewees were asked the same questions. While analyzing the interviews we used qualitative content analysis method. We did not have any preset categories but looked for the categories that emerged from the participants' answers. Small number of participants is a limitation for the study, as the results cannot be generalized in this case.

FINDINGS

Results of the questionnaire analysis showed that only about 18 % (4 out of 22) of the participants had professional development certificate (3 - TKT, 1 – CELTA). About 23% (5 out of 22) of the participants had language proficiency certificate (4 – IELTS, 1 – TOEFL). It is important to mention that only one of the participants had both professional development and language proficiency certificates. The main reason for not taking the certificates was the fact that they are not required by the organization where the teachers work. Although all the participants mentioned that they attended either a seminar or a professional development course at least once a year most of them (77%) did it because it was one of the requirements of the institution they work in and 23% (4 out of 17) in this group stated that their institution provided them with opportunities to attend CPD courses and even organized the courses itself. Only three (about 16%) of participants attended webinars and one of them was currently enrolled into an online course on teacher training. One of the participants was the member of the Association of English teachers and none of the respondents was a member of online community of English teachers. The results show that the teachers are not motivated to develop professionally by the institutions they work in and do not understand the necessity of professional development as most of them attend CPD courses / seminars not because it is interesting for them but because it is required. Some teachers also mentioned lack of time and work overload as the factors preventing them from doing / having continuous professional development activities.

A number (4 out of 10) of the participants that teach English at university attended continuous professional development courses irrelevant to teaching English, which in our opinion is also an issue for continuous professional development of English teachers as language and methodology skills are important for teachers at any level of education system.

The other issues that were mentioned by the participants of the study were access to courses and internships. Those participants that live in big cities had more opportunities to attend lectures of native speakers and ELT professionals. None of the interviewees had an internship abroad. Although government suggests great opportunities for teachers it takes time and a lot of effort to win the scholarship and again the teachers living in big cities have more opportunities as they have easier access to information and organizations suggesting scholarships.

Lack of system (monitoring and evaluation), standard requirements and planned “interlinked program” (Johnson, 2009) was also mentioned by the participants of the study as one of the issues of continuous professional development system in Kazakhstan. Those teachers that have a certificate or attended more courses than others are not distinguished by the principals, so the only factor that motivates the teachers in the opinion of the participants is getting a higher rank as a teacher or proving that you still have enough skills to held the rank you have, which happens once in five years. For most university teachers the aim is to fulfill the requirements of the university concerning continuous professional development as ongoing professional growth is not monitored or evaluated and consequently there is no external motivation. Nevertheless, such continuous professional development activities as peer-observation and methodological seminars are compulsory in secondary as well as in higher education organizations.

Neither of the participants, who are school teachers was involved in action research so far. Only two university teachers mentioned that they did individual action research.

Some of the respondents (about 23%) stated that they would like to improve their language skills, however there are no special courses suggested by government for developing language proficiency. Those regions that suggest language proficiency courses organize them for teachers working in the country or remote areas.

Among the skills that the participants thought to be useful and wanted to develop were language skills (about 23%) as it was mentioned above, computer skills (about 23%) and research skills (about 14%). The areas that interested the respondents were inclusive education and content and language integrated learning as they are new trends widely discussed by teaching professionals at all the levels and informal and formative assessment especially for school teachers as the system of assessment at school is mostly formal and summative.

CONCLUSION

The findings showed that notwithstanding the fact that the system of continuous professional development in Kazakhstan suggests great opportunities and is constantly improving there are still some issues to be addressed. The most important of them is motivating teachers to grow professionally. Mandatory requirements for language teachers, such as having language proficiency certificate and one of the professional development certificates will make teachers improve their language and teaching skills, which in turn will improve teaching quality and quality of education in general. Financial motivation and improving of teachers’ social status are also important factors here.

Cooperation of higher education organizations with schools and centers for continuous professional development will help to understand the needs and support teachers through all the stages of their career and professional growth. Motivating teachers to do action research, which will improve teaching practices of teachers themselves and give information for further research and improvement of educational programs and courses at universities training pre-service teachers is one of the key factors for successful collaboration of schools, universities and centers for continuous professional development.

To be able to continue learning through the whole life a person should have reflective thinking skills in order to understand and analyze the need for learning and personal and professional development. Developing future teachers reflective learning and thinking skills will help them become decision-makers, which is one of the conditions required for “achieving positive and sustained impacts” (Borg, 2015, 3) through continuous professional development. Teachers are still not decision-makers in our country as most of the changes in the system of continuous professional development for teachers as well as in the system of education are top-down.

Systematic approach to teacher continuous professional development when it is an ongoing process but not a series of occasional events attended to fulfill some requirements should be maintained. Involvement of teachers in action research is, in our opinion, an effective way to make teachers read theoretical literature and implement theory in practice trying new methods and activities in the classroom.

A good old practice of methodological seminars and unions of teachers of the same subject / relative subjects at schools or departments at universities where teachers can learn from each other should be revisited and actively used by all the education organizations. Nowadays these practices are routine or done only for reports.

The same can be said about peer-observation and mentoring. These continuous professional development activities are rarely used nowadays. They are perceived as something old-fashioned and used to criticize and find faults with the observed or mentored teacher.

According to Borg (2015) “a productive approach to continuous professional development will support teachers in identifying (ideally with reference to classroom practice and student learning) those specific areas of professional practice where development is required and work with teachers to identify and implement appropriate strategies for supporting such development” (Borg 2015, p.5). So, interaction of stakeholders in the system of education and raising awareness and motivation of teacher for professional growth will have positive impact on education quality in a long term.

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Systemic Approach in "Mother-Child Home" Projection in Education

Leyla SURI

Istanbul Commerce University

Turkey

lsuri@ticaret.edu.tr

ABSTRACT

Urban facilities, in means of urban areas hierarchy, are closed and open areas of which right of use belongs to public and which meet the user requirements in their regions.

The need of facility, parallel to the city development plan, is designed according to the socio-cultural, demographic structure of the population to whom it provides service.

The quality and the size of the facility that is necessary in urban systems are also specified in regulations.

Even described under several headings in the current legislation, there is no exact explanation of the meaning of mother-child home facility. It can be described as the smallest unit of urban systems in the subarea called "The Neighbourhood" and it is among one of the most important facilities for both parents and children.

Especially parent (generally mother) who has to spend more time with his/her child who is at preschool age can not find opportunity to be physically and socially accessible for himself/herself and for his/her child and to have sufficient socialisation, to use his/her energy at right source and to express himself/herself sufficiently. Similarly, there is need for places of public nature and that are secure and which may contribute to socialisation and education apart from school for age groups whose parents work and who are at school age and however, who can not stay at home on his/her own after returning from school. The mother-child home facility proposed for meeting such needs is not fully included in current legislation.

Describing the mother-child home facility, its size in the neighbourhood scale, and examining the site selection and application criteria are the subjects of this study

The mother-child home criteria are examined in urban design and architectural scales relevant to observations and researches.

Within the scope of this study the concept of facility, concept of neighbourhood, local needs, are examined within the axis of system component and mother-child home in brief.

INTRODUCTION

Areas in urban systems that ensure a proper functioning of the residential and working areas also include social and cultural facilities.

Quality and spatial size of social and cultural facilities are determined by the identity and needs of the user. Social and cultural facilities in the areas covered by the development plans are positioned according to the hierarchy of settlement. Facilities in the plans are defined by the laws that also describe their minimum sizes.

Despite the fact that 'Mother-Child Home' can be defined under the heading of social cultural facilities, it does not have a self-contained definition yet. "Regulation on Spatial Plans" (Official Gazette 29030, 2014) that identifies the terms of preparing development plans contains below given definitions.

Social infrastructure areas:

The general name of the outdoor and green areas that are created by the public or private sector for meeting the cultural, social and recreational needs of the individual and society, creating a healthy environment and improving their quality of life such as educational, health, religious, cultural and administrative facilities, indoor and outdoor sports facilities as well as parks, children's playgrounds, squares and recreation areas (Ministry of Environment and Urbanization, 2014a).

Social facility area:

Areas under public or private property allocated for providing service in such functions as nursery, course, dorm, kindergarten, reformatory, elder and disabled care home, rehabilitation center, community center, dorms for patient relatives to be used by the society for the purpose of improving the level and quality of the social life" (Ministry of Environment and Urbanization, 2014b).

As can be understood from above given definitions;

- Meeting the cultural, social and recreational needs of the individual and society,
- Improving the level and quality of the social life

constitute the basis for the legal arrangements in the system of settlements.

Detailed description of the definitions are indicated in the Table 1 below. Mother-Child Home facility includes a part of the functions specified in the headings within the Table 1.

EDUCATIONAL FACILITIES AREA	SOCIAL OUTDOOR AND GREEN AREAS
Nursery School	Children's Park
Primary School	Park
Secondary School	Botanical Park
Day High School	Zoo
Boarding High School	Recreation Area
"Industrial Vocational High School, Multi-Program High School"	Recreation
Special Education, Rehabilitation and Guidance Centers	
"Public Training Center	
Advanced technical School for Girls"	

Table 1. Description of Social and Edicational Facilities Given in the Regulation (Ministry of Environment and Urbanization, 2014c).

Spatial areas of social and cultural facilities are also defined, and its value is minimum 0.50 M2/person-1.00 M2/person, depending on the population in the settlement (Table 2).

Another regulation (Ministry of Environment and Urbanization, 2017) contains general definitions of several uses within residential and commercial areas, under the headings social and cultural facilities, public service area, green areas, picnic entertainment recreation areas, social spaces ...

POPULATION GROUPS (person)	0 - 75.000	75.001- 150.000	150.001 - 500.000	501.000 +
EDUCATIONAL FACILITIES AREA (M2/person)	0.50-1.75	0.50-1.75	0.60-2.00	0.60-2.00
SOCIAL OUTDOOR AND GREEN AREAS (M2/person)	10.00	10.00	10.00	10.00
SOCIAL AND CULTURAL FACILITIES AREAS (M2/person)	0.50	0.75	1.00	1,00

Table 2. Facility Area by Population (Ministry of Environment and Urbanization, 2014c).

When Table 1 and Table 2 are taken into consideration together, it can be seen that all other social and cultural facilities than those clearly defined such as schools shall be planned in the scope of the area calculated over the same standard M2/person. In another way of saying, for example within the total minimum area of 37,500 M2 to be allocated within a settlement of 75,000 people, social, cultural, religious, administrative indoor and outdoor facility area can be present, but the ratios and definition of quality in the sub-heading are not clear for the facilities.

In the housing and work areas, demographical structure, social tendency and expectations of the population determine the type, priority and size of the facilities to be planned, but this does not constitute an obligation in planning of a facility not defined in the legal system in each sub-region (neighborhood).

Mother-Child Home facility was considered for the purpose of clarifying this issue in the legal system.

IMPORTANCE AND REQUIREMENT OF THE MOTHER-CHILD HOME

There are several studies addressing the position of children and the parent who takes care of them (mostly the mother) within the social and cultural life.

United Nations Convention on the Rights of Child states that “The child holds the right to rest and leisure, to engage in play and recreational activities and to participate freely in cultural life and the arts” (United Nations, 1989). The Convention is a legally binding document at the international level (Şişman, Özyavuz, 2010).

In the 10th Growth Plan of our country that covers the period between 2014 and 2018, it is stated that pre-school education for the 4-5-age group is at the level of 0.44 (Article 138) and that the early period child development program is not at the required level (Article 260).

Summarized objectives and purposes of the aforementioned plan:

“... addresses maximizing participation of everyone and every region in the process of growth” (Article 129), raising productive and happy individuals that have a developed skill of thinking, perception and problem solving, ... are prone to science and technology use and production and are equipped with the fundamental knowledge and skills required by the information society (Article 142), ensuring raising the citizen’s quality and period of life as well as their participation in the economic, social and cultural life consciously, actively and healthily (Article 172), strengthening the women’s role in social, cultural and economic life (Article 249), increasing the opportunities and facilities to support children’s wellbeing by observing their best interests, to develop and realize their potential and increasing access to basic public services, particularly in the fields of education, health, justice and social services (Article 263).”

Tools to realize aforementioned objectives are described in the same plan:

Pre-school education that contribute to students’ social, mental, emotional and physical development shall be made common, in the manner to support access by the households and regions with limited facilities (Article 146); Family consultancy and training services shall be made comprehensive, standard, effective and common (Article 250); Women’s level of education and skills shall be increases (Article 251); Children’ wellbeing and basic skills shall be improved (Article 265).

It is stated that not only nutrition, health, housing and education, but also the child’s engagement in play is of vital importance, as it lead’s the child’s physical, spiritual, mental and social development (Heseltine and Holborn, 1987, Şişman, Özyavuz, 2010). Researches show that 0.50 of the mental development until age 17 is formed until the age 4, while 0.30 thereof is formed from age 4 to age 8, and 0.33 of school achievements made until age 18 depends on the education that child received in ages 0-6 (Tekiner, 1996, p.10).

Influence of the parent, particularly mother in determining the child’s future identity and socialization is inarguable (Güngörmüş, 1995). The parent (generally the mother) who has to be with her child more particularly during pre-school period cannot find the areas that are physically and socially accessible for herself and her child to socialize sufficiently, use her energy in the right source and to express herself. Indeed, for the children at an age group when the parent works, he/she is at school age, however is not able to stay alone at home after school, safe spaces of public quality that make other contributions their socialization and education than the one made by the school is needed. Mother-Child Home facility that is suggested to meet these needs is currently not available in the legislation with its exact definition.

Despite the fact that there are practices regarding different areas under public and private property that provide children as well as parents with service, our country needs quality spaces where mother and child can be and spend time together depending on their needs.

For reasons such as the parent, who takes care of the child at any time of the day in the first years following the birth of babies, assuming a great responsibility, while being pushed to loneliness at the same time, individuals’ or society’s negative reaction to the child in environments where she was present before giving birth to the child, the environment not matching the needs of the child, mother’s lack of any guarantee to receive constant assistance from her relatives and not being able to get the child stayed with another person for some time due to economic reasons or security concerns (Westhead, 2017), the parent’s social relationships become different after having a child. The institutions such as community houses offer restricted facilities and lack arrangements to allow both the mother and child to spend longer times. Therefore, the mother needs spaces to get socialized with the groups with similar demands and expectations, to receive support to meet her needs (Westhead, *ibid*) and to spend longer times with her child.

Actions to be considered in the scope of Mother-Child Home facility can be provided at the neighborhood level.

NEIGHBORHOOD

Can be defined as the smallest local unit in cities, the smallest administrative unit of the city, neighborhood (Suri, 2002) is a physical and social sub-zone. Occupying a significant place in the social, cultural and administrative structures of the cities, the concept of neighborhood has a wide scope. In this study, the

neighborhood is analyzed with regard to its social and physical accessibility and facilities. Neighborhood is the sub-zone, where daily and weekly needs can be met in walking distance. It is also defined in the other source as the unit of vicinity (Çabuk, 2003, Çetiner, 1971).

Elements determining the physical borders of the neighborhood:

- Borders are generally defined according to the reference of primary school facility. Walking distances to the primary school give a general clue on the general borders of the neighborhood. Primary school is also a determinant element in selection of the locations of the other functional areas.
- Walking distance is expressed in different distances. Freidberg (1982) determined it as 2-3 minutes to the playground areas within the sub-vicinity group and 10 minutes to the neighborhood park. According to Cetiner (1991), children's playground must be of 400-800-M distance and kindergarten of 400-M distance. Walking distance must allow the child to reach to the school with his/her parent before school age and on his/her own without getting tired at the primary school period.
- When primary school-centered access is taken into consideration, borders of the neighborhood can be told to cover an area that can be walked within 10 minutes in general view or an area with diameter of 800 M from bird's-eye view.
- Physical texture of the area, its slopes and unevenness are taken into consideration in walking distance.
- Artificial and natural thresholds are important in access of the neighborhood and in determining its borders.
- Çetiner (1971) made the definition as a unit of 3500-7000 people with the approach based on primary school.

FACILITIES IN THE NEIGHBORHOOD

Çetiner (1971) generally defined the facilities in the neighborhood determined according to daily and weekly needs as settlement areas, schools, outdoor sites-playgrounds, a small shopping center, meeting place and public facilities and required transportation areas.

Aksoylu et al. (1996) on the other hand, summarizes the facilities that must be present in the primary school settlement unit as follows:

- Buildings for Education (Primary School, Kindergarten, Nursery)
- Social Buildings (Medico-Social Center)
- Administrative Buildings (Neighborhood Administration, Police Station, Post Office, Fire Department)
- Commercial Buildings (15-20 shops that can meet daily needs)
- Recreation and Entertainment Areas (Playgrounds, Children's Playground, Park, Movie Theater, etc.) (Osmanli, 2012).

Social and cultural facilities in the neighborhood are positioned according to accessibility. Accordingly, center of the neighborhood is an area, where shopping units, social-cultural buildings, educational facilities, administrative facilities, recreation areas, medical facilities. Center of the neighborhood must be the areas that are still active out of working hours. Therefore, residences must be available with the other facilities within the center.

MOTHER-CHILD HOME FACILITY

Scope of the Mother-Child Home Facility suggested in this study is as follows:

- Preschool age group,
- Primary school students in 6-14-age group,
- Parent attending on preschool age group,
- Neighborhood inhabitant who comes for educational purpose solely.

DEFINITION

Mother-Child Home Facility can be defined as follows: "The name given to public spaces that meet requirements of 0-14-age group in the neighborhood unit such as playing, recreation, after-school study, library, short-term child care and that consists of a couple of classrooms where adults can have courses and of which indoor-outdoor floor area is maximum 0.20." Its properties can be listed as follows:

- Playing area shall be available in both indoor and outdoor area and indoor area shall meet playing need when weather conditions are not convenient.
- Play area arrangement shall be considered in three categories for 0-2-, 2-6-, 6-14- age groups.
- The parent that attends on the child in pre-school period can stay in the indoor space with his/her child for longer. In case of request, he/she shall be able to use nursery service for 2 or 3 hours on payment of small fee.

PROGRAMS

- Adults, generally women in the neighborhood shall be able to receive seminars on child education, social relationships and needs and attend courses to improve their knowledge and skills.

- Therefore, children, particularly those in early childhood period and their parents shall be able to express themselves without being isolated from the social life.
- Students of primary and secondary schools shall be able to come to the Mother-Child Home after the school. This way, in a safe environment, one can play, recreate, study and use the library.
- The seminar shall be subject to registration, and short term child care and use of the indoor space by school age children shall be subject to registration and a small fee.

Properties which are stated above in general shall help determining the identity of Mother-Child Home users and therefore, area sizes. Suggested facility includes recreation, study, library, seminar-course areas and small office functions, in addition to the indoor and outdoor play area.

There are different approaches regarding sizes of children's playgrounds. For example, in Australia, recommended playground area for a neighborhood of 5000 people is 14,000 M². While this value is considered to be 5 M² per child in France, in England it is 24 M² (Anonymous, 1998, Şişman, Özyavuz, 2010). According to Yılmaz and Bulut (2003), playground area must be considered to be min 250 M² or 6.5 M² per child. Playground area is recommended to be 500-1000 M² depending on the need (Öztan, 2004). In general, it must be thought that 1/3 of children in a neighborhood shall be in the playground at the same time and the size must be determined accordingly (Şişman, Özyavuz, 2010).

SIZE DETERMINATION

Size of the Mother-Child Home facility shall be determined according to the users and population. In 2016, population of Kadıköy county, İstanbul that is selected to be the area of analysis is 452302 people according to Turkish Statistics Institute (Kadıköy District Governorship kadikoy.gov.tr/mahalle). In calculations made for a neighborhood sub-unit of 5000 people, proportional values of population data of Kadıköy was used as an example. Although pre-school is considered to be 0-6-age, because details of 0-6-age cannot be calculated in the official population values, official data was taken as basis. The population that was calculated according to the proportional values of the age groups for whom the Mother-Child Home is thought to provide service is given in the Table below.

TOTAL POPULATION	5000 (F 55%, M 45%)			
AGE GROUP	0-4	5-9	0-14	20-40 K
Population %	8%	7.5%	7%	(49.8%)*55%
People	400	375	350	1370
Total People	1225			1370

Table 3: Distribution of Population of Kadıköy County by Certain Age Groups

CALCULATION OF PLAYGROUND SPACE

Because adult use shall be generally by women, in facility calculation, calculation was made according to the population of women.

Calculation of playground according to the table:

$$1225 \times 0.33 = 404.25$$

$$404.25 \times 6.5 = 2600 \text{ M}^2 \text{ approximately}$$

Indoor space calculation:

It was prepared by considering 25-40-age group women (1370 people) Ministry of National Education Directive (2014).

$$400 \times 0.33 = 130 \text{ people approximately}$$

Indoor space hosts classrooms, library, study, staff room and the area providing the required infrastructure. It was calculated to be around 750 M² in total.

Playground parcel to host a building with a total floor area of 750 M² must be around 3600-4000 M². When rated to the population of 5000 people, Mother-Child Home facility standard was calculated to be 0.8M²/person (neighborhood population) or 3.25M²/child (0-14-age group). 0.8 M²/person here shall be excluded from the green area Standard in the development legislation.

Its indoor space can be stated to be building area ratio of 0.20, min. 750 M², and in total floor area coefficient to be 0.40, min. 1500 M², building road approach distances to be min. 10 M, in development plan terminology.

In another way of saying, the parcel in the "Mother-Child Home" legend within the development plan covers an area of 3600-4000 M². Public children's playground located in the outdoor part of the parcel can be used at any

time of the day. The ground floor of min. 750 M2 is the indoor playground designed for different age groups. These are controlled spaces that pre-school children can use with their parents and children of higher age with registration. As also stated before, in addition to the seminar, course, short-term child care and use of the space by school age children shall be subject to registration and the fee financed by the public. The other functions than the playground shall be in the upper floor.

CONCLUSION AND EVALUATION

This study was conducted for the purpose of defining the Mother-Child Home facility that is not clearly defined in the current legislation. Women constitute the half of the population. In the years following giving birth to a baby, ability of movement is restricted both for the baby and mother. Raising healthy, skillful, productive individuals is in direct proportion with the providing the mother with the environment for self-development and sufficient socialization. 10. This facility was developed based on the following statements of the Growth Plan (2013-2018): "... maximizing participation of everyone and every region in the process of growth" (Article 129), raising productive and happy individuals that have a developed skill of thinking, perception and problem solving, ... are prone to science and technology use and production and are equipped with the fundamental knowledge and skills required by the information society (Article 142), ensuring raising the citizen's quality and period of life as well as their participation in the economic, social and cultural life consciously, actively and healthily (Article 172), strengthening the women's role in social, cultural and economic life (Article 249), increasing the opportunities and facilities to support children's wellbeing by observing their best interests, to develop and realize their potential and increasing access to basic public services, particularly in the fields of education, health, justice and social services (Article 263)." The facility developed is of the sufficient quality for pre-school children, parents, group of children whose parents work and who need support after school and the other individuals who pursue self-development can carry out all activities together.

It must be evaluated together with the primary school facility designed for the neighborhood center. This way, functional integrity with the primary school and ease of physical access shall be provided.

In this study, standard of the Mother-Child Home facility was tried to be calculated. For trial purpose, only the neighborhood population of 5000 people and population group rates for 2016 in Kadıköy Municipality, Istanbul were used. Demographic structure of the sub-zones and detailed description of tendencies and expectations through questionnaire and observation shall be included in another study. Furthermore, discussing the Mother-Child Home facility and evaluation of its definition, content and justifications by different disciplines shall bring new dimensions to the research.

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In-Service Science Teacher Education in Portugal: An Analysis of The Short Courses Available

Luís DOURADO

ldourado@ie.uminho.pt

Research Centre in Education, Institute of Education

University of Minho

Portugal

Laurinda LEITE

lleite@ie.uminho.pt

Research Centre in Education, Institute of Education

University of Minho

Portugal

Sofia MORGADO

sofiamorgado@ie.uminho.pt

Research Centre in Education, Institute of Education

University of Minho

Portugal

ABSTRACT

Although teaching-related relevant competences development starts during pre-service teacher education programmes, teachers' professional knowledge has to be further developed through in-service training. In-service training should lead teachers to develop and update the knowledge base acquired during initial teacher education and to fulfil their professional needs. In Portugal, in-service training courses are organized by diverse institutions, being the most common higher education institutions and school network training centres. This raises questions about the consistency between science teachers' needs and the in-service training courses offered to them, as well as between the in-service courses and the recent science education research agenda. Courses organized by higher education institutions and school networks from the north of Portugal, accredited by the national agency and available from its webpage, were analysed. Results indicate that in-service training courses focus on diverse teacher education components but they tend to concentrate on general issues. However, it may be hard for science teachers to find in-service training in some subjects and/or issues. These results may motivate a follow up investigation on whether or not those in-service courses fit science teachers' educational needs so that teacher educators can find ways to better make their actions fit teachers' own training needs.

INTRODUCTION

The demands of the teaching profession

Teaching is a complex and demanding task (Dillon & Maguire, 2007; Berry & Loughran, 2012; Wallace & Loughran, 2012; Lederman & Lederman, 2015; Schneider, 2015) as teachers have to play many different roles in school and especially in the classroom (Schneider, 2015). As a matter of fact, Harrison and Killion (2007) argued that a teacher has to be: resource provider; instructional specialist; curriculum specialist; classroom supporter; learning facilitator; mentor; school leader; data coach; catalyst for change; and learner. On one hand, a teacher that is able to play this huge variety of roles is a teacher that acts as a full member of an institution, fosters students' scientifically accurate and methodologically appropriate learning, and promotes his/her own training. The latter is needed for the teacher to keep acquainted with the scientific and technological developments and to fulfil his/her perceived pedagogical practice needs (Ponte, 2006; OECD, 2014a). It is also a teacher that creates learning situations that enables students to develop competences to learn how to learn and to act as informed, responsible and active citizens (Snoek & Zogla, 2009; OECD, 2014a). Besides, it is a teacher that possesses a large body of multidisciplinary knowledge and skills (Ponte, 2006; Snoek & Zogla, 2009; OECD, 2014a) and that feels motivation and enjoyment towards the profession (Blonder, Benny, & Jones, 2014; Kazempour & Sadler, 2015). As Hargreaves (1998) has stated:

“Good teaching is charged with positive emotion. It is not just a matter of knowing one’s subject, being efficient, having the correct competencies, or learning all the right techniques. Good teachers are passionate beings who connect with their students and fill their work and their classes with pleasure, creativity and joy.” (p.835).

This is one of the reasons why novice teachers must be supported to develop an awareness of the ways in which emotions influence and shape their work as science teachers (Saka, Southerland, Kittleson, & Hutner, 2013) so that throughout their careers they can fight for their pedagogical goals specially in conflicting settings that are very common within nowadays accountability driven contexts. Hence, opposite to what some people may think, initial teacher education (ITE) cannot concentrate on subject matter knowledge only (Leite, 2005; Frost, 2010; Eurydice, 2011). Rather, it should lead teachers to acquire multidisciplinary knowledge and to develop competences useful for them to deal with a variety of problem-situation that they may face in their future career (Frost, 2010; Schneider, 2015). Day and Sachs (2004) reinforce this idea when they state that

“[...] higher quality teaching demands teachers who are well qualified, highly motivated, knowledgeable and skilful, not only at the point of entry into teaching but also throughout their careers.” (p.3&4).

If it is acknowledged that “Teachers learn as students learn and students learn as teachers learn” (Wallace & Loughran, 2012, p.295), then the way ITE is carried out becomes a key element for educational success (Rebmann, Schloemer, Berding, Luttenberger, & Paechter 2015). This may be the reason why several researchers have advocated that teacher education should take place in constructivist and diversified environments (Leite, 2005; Wallace & Loughran, 2012), promote teachers’ reflection on his/her own learning (Snoeck & Sogla, 2009; NRC, 2010; Rebmann, Schloemer, Berding, Luttenberger, & Paechter, 2015), make them able to critically analyse curriculum innovations and methodologies (Bell, 2005; Leite, 2005; Rebmann, Schloemer, Berding, Luttenberger, & Paechter, 2015) and to resist to the possible mismatches between knowledge conveyed to them during ITE programs and their school counterparts’ attitudes and beliefs (Saka, Southerland, Kittleson, & Hutner, 2013).

The newly formed teachers are asked to transfer their initial knowledge base to their new work context, often without any support. Successful knowledge transfer would be possible only if ITE was able to reduce the gap between the theoretical and the practical components of teacher training, to make it easier for novice teachers to cope with the diverse demands that they have to face at once. Otherwise, as Stenberg, Karlsson, Pitkaniemi, and Maaranen (2014) found out, they will concentrate on the didactical issues and neglect the contextual (about school and society, and matters related to content, such as the curriculum) ones.

Anyway, ITE should not be expected to be enough for the newly formed teachers to be able to appropriately deal with the diversity of ever changing problem-situations along their lifespan (Ponte, 2006). In fact, continuous training will be needed (Marcelo, 2009). To be successful, in-service training should be guided by experts or critical colleagues whose mission would be to help teachers to continuously develop as persons, as members of society and as professionals (Bell, 2005) and improve their ways of teaching, interacting with students and engaging into the educational community (Zeichner, 2010; Hénard & Roseveare, 2012).

Science teachers’ knowledge and skills

At a first glance, teaching science may seem similar to the teaching of any other subject and the science teachers’ knowledge base may be seen as to differ from the knowledge base of other teachers on the subject content knowledge only (Sickel, Banilower, Carlson, & van Driel, 2015). However, teaching science has to take into account the nature of the discipline and the characteristics of the content to be taught (Wallace, 2014) which prospective teachers may not be aware of due to their experiences as learners with science teaching practices that “often carry ‘a heavy reliance on didactic teaching styles’ and a ‘cookbook’ approach to investigative work” (Berry & Loughran, 2012, p.401). Besides, as teachers’ ideas about science interfere not only with what they teach about science but also with the way they teach it (Wallace, 2014; Anderson, 2015; Henze & van Driel, 2015), Bianchini (2012) argues that science teacher education should convey to the newly formed teachers appropriate ideas about science and scientists’ work so that they may convey an updated image of science to their students as well.

In addition, teachers’ beliefs about the best ways of teaching science, and their experiences as science learners may inform the ways they teach science (Mansour, 2009; OECD, 2014a). Therefore, in-service teacher education should provide an opportunity for teachers to think about what they do and the way they do it and to find out about the best ways to proceed in order to foster students’ learning.

Research has shown that teachers trained under an inquiry learning model may be more likely to adopt more constructivist, student centred forms of learning than if they were trained under a teacher centred approach (OECD, 2014b). These results are consistent with and reinforce the idea that successful teaching depends on the quality of the interaction between teachers and students (Wallace, 2014) and may inform methodological choices in the in-service training context. Besides, different students have different preferred learning styles (Pritchard, 2009; Mestre, 2012; Yassin & Almasri, 2015) and these may depend on the subject content area. This means that in-service teacher education should convey teachers a range of teaching approaches and skills so that at each occasion they can choose the one that best fits their teaching style, and their students' preferred learning styles, conveys an appropriate image of science and facilitates students' science learning.

According to Frost (2010), science teachers need to hold a variety of types of knowledge (including content knowledge, epistemological knowledge, knowledge of teaching and assessment strategies, curriculum knowledge and knowledge about students' learning in science) and to develop a range of attitudes (including attitudes towards science and towards teacher's own professional development) in order to put into practice a science teaching that is consistent with the commonly agreed values and aims of education and the specific goals of science education. Gil-Pérez (1991) also has acknowledged the relevance of these types of knowledge and attitudes but he emphasized the role of research and innovation, placing them at the centre of all the types of knowledge and competences that science teachers should hold. He also emphasized teachers' critical awareness towards teachers' spontaneous thinking and towards the usual teaching approaches. In fact, research is the basis for informed pedagogical innovation (Davies, 1999) and the latter requires critical analysis of traditional ways of thinking and doing, so that teaching can be both more effective and motivating, and that learning can be less painful and more meaningful for the learners.

On their analysis of teachers' required types of knowledge, Frost (2010) and Gil-Pérez (1991) focused mainly on the classroom, and did not make it explicit knowledge or abilities required to deal with students that differ from the mainstream. Bianchini (2012) has added that science teachers need to both become aware of the requirements of a curriculum for students with special educational needs and to find the best ways to help these students to make sense of the world.

To help in-service teachers to develop approaches to science teaching that effectively challenge taken-for-granted models and beliefs is a big challenge for teacher educators. As Berry and Loughran (2012) have put it, "developing a pedagogy of science teacher education requires educators to be awake to, and aware of, the complex and problematic nature of science and of teaching, as well as having a preparedness to create and engage in experiences that enable genuine learning to take place for all participants in the learning to teach process." (p.413).

Each single teacher should be expected neither to hold all this variety of types of knowledge and skills nor to be able to cope with all the challenging situations a school can offer to teachers. Rather, he/she should be expected to have a basis for professional and personal growth which Hargreaves (1998) conceptualizes as being tied up with the quality, range and flexibility of teachers' classroom work. Therefore, in-service teacher education institutions should do their best in order to promote in-service science teacher education. To achieve this goal, "they must recruit and support teacher educators who have a broad mandate, an expansive world-view, a collaborative approach, and the skills to enact a rich curriculum." (Goodwin & Kosnik, 2013, p.343). The point is that teacher educators become so without taking any training program (Bayrakci, 2009). In addition, there is a variety of profiles of teacher educators (OECD, 2013), ranging from university qualified staff on science education, science or general education to school teachers with a variety of expertise and teaching experience.

Thus, at least four related questions can be raised. First of all, how should in-service teacher educators be prepared and supported to play their role and to do it well? Goodwin and Kosnik (2013) stated that this question cannot yet be answered because the profession has not yet agreed on that teacher educators need formal preparation. Secondly, is there a profile of in-service teacher educator? Traditionally, teacher training has used to be done at higher education institutions (OECD, 2013), which have specialized staff in several areas from content knowledge to general education passing by pedagogical content knowledge and teaching practice. However, some teachers were used to argue that teacher educators from higher education institutions are away from school real life and cannot provide useful in-service training. They would try to fulfil the needs they perception in teachers that act in a school imagined context instead of fulfilling teachers' own (felt) needs in a real context. Hence, recently, there has been an increasing tendency for advocating school-based teacher

education done by peers. The argument draws on the idea that peer-tutors can provide school contextualized teacher education that may focus on teachers real (felt) contextual needs and that fit the school real conditions (Hénard & Roseveare, 2012). However, a third question can be asked: as peer tutors are teachers that belong to the same school and are not systematically engaged in research, how can they be aware of new issues that emerge from scientific and educational research and promote educational change? As no one feel the need of what he/she does not know, this would point towards training be done by school-based teacher educators and also by higher education institutions staff. Still, a final question should be raised: is the profile of a teacher educator independent of the subject he/she trains teacher for? It can be argued that even though some dimensions that teachers need to develop are subject independent, other and probably the most important, depend on the subject that is on the content knowledge that they teach. In fact, some of the types of teachers' professional knowledge are specific of a science teacher and would not apply to a language or even a maths teacher.

Teachers' professionalization and professional development: the case of Portugal

As any other professional, a teacher should have an organized body of knowledge that is specific of the teaching profession and of the subject he/she teaches. The specific features of this body of knowledge are what separate teachers from other professionals. To acquire the necessary and varied knowledge-base and to develop the relevant competences to teach in educational changing contexts, those that intend to become teachers need a formal period of preparation to enter the profession, even though they should engage into continuous growth and development actions afterwards (Eurydice, 2015; Ogunniyi & Rollnick, 2015; Schneider, 2015; Treagust, Won, Petersen, & Wynne, 2015). It can be argued that to do ITE is far more than to provide a teaching qualification; it is about forming teaching professionals (Snoek & Zogla, 2009; Lederman & Lederman, 2015), able to not only play a diversity of roles, but also play them well with students holding a wide range of needs and abilities, in a variety of work contexts (Ogunniyi & Rollnick, 2015; Schneider, 2015). However, in contemporary changing societies, societal expectations on teachers are ever changing, and so are the demands on the teaching profession. Therefore, teachers need to be not only professionals but also “proactive in order to respond adequately to the ambiguity, uncertainty and increasing complexity which characterize the educational settings in which they are expected to operate.” (Hilton, Flores, & Niklasson, 2013, p.434).

Thus, educating professional teachers is much more than conveying knowledge to prospective teachers; it is about helping teachers to find the best fit among factors that, according to Murray (2014) interact to influence teachers' professionalism: their individual biography, their institutional setting, and the national context. Based on Korthagen's (2010) ideas for ITE, it can be argued for an in-service teacher education model that blends together theory and practice and that acknowledges teachers' previous experiences so that professional learning becomes a bottom-up process taking place in the individual teacher and building from his/her experiences in order to lead to fruitful knowledge development about teaching.

European countries as well as countries in other continents face a common challenge: train effective teachers for the 21st century students' needs (Musset, 2010; Eurydice, 2011; OECD, 2014a). Within the scope of the Bologna process, European member states agreed on a common credit transfer system as well as on a cycles-based structure of higher education. However, they seem to have failed to reach a common framework for ITE (Snoek & Zogla, 2009; Castro, 2015; Lederman & Lederman, 2015) and to agree on a minimum level of qualification (Eurydice, 2015), even though they seem to be aware of the common challenges that teacher education has to face and overcome. Nevertheless, they also failed to design a teacher general profile as well as a subject teacher specific profile. The point is that Member States are different in terms of political orientation and teacher education is very sensitive to politics (Goodwin & Kosnik, 2013) as most governments dictate the kind of teachers they want.

Thus, even though teaching is a universal profession, the teacher profile is heavily influenced by differences on the roles played by the government, the universities, the teachers, and the schools in the educational systems around the world (OECD, 2013). The work context dependency of teacher identity (Flores & Day, 2006; Luehmann, 2007), that is the way teachers see themselves as teachers, may make it hard for teacher education to overcome what Snoek and Zogla (2009) took as one of the most relevant challenges of teacher education - how to promote teachers' identities - as these exerts a meaningful effect on teachers' actions and engagement.

Arguments for in-service teacher education are often associated with curriculum reforms and they are based on the need to make teachers up to date with the newly advocated contents and methods. However, “in modern circumstances, an initial professional training is altogether inadequate for a career which can extend for forty

years” (Coolahan, 2002, p26). This is especially true for teachers who seek to equip and motivate their pupils to be lifelong learners. This may explain why professional development for teachers is compulsory at every level in about three-quarters of OECD and partner countries and in some countries it required for promotion or salary increase (OECD, 2014a). In Portugal, the content of in-service training is specified collectively by the central education authorities, teachers’ professional organisations, teachers’ unions, universities and schools (OECD, 2014b). However, teachers can choose what in-service courses they will engage in given that they can gain a few general credits but that they should gain credits on specific area they teach.

There are several ways of organizing in-service teacher training and the Portuguese law acknowledges a variety of them. Findings from the 2013 teaching and learning international survey (TALIS) suggest that courses are the type of training in which teachers engage more often and that it is followed by conferences or seminars and by participation in teacher networks (OECD, 2014a).

The duration of in-service courses varies from long duration degree leading courses to short-term (being most of them of 25 hours long) or summer courses, or seminar/conference like courses (Coolahan, 2002; OECD, 2014a) and taking in-service courses is part of teachers’ contractual obligations (OECD, 2014b), namely in Portugal (Law 22/2014, November 11). Whatever the way it is organized, in most countries, including Portugal, the design of in-service courses has been decentralized and therefore it can be done by the different types of training institution (OECD, 2014b) even though some of them offer more courses than others. However, educational authorities settled accreditation and evaluation systems in order to guaranty quality of the in-service training provided (Eurydice, 2011). Portugal has got both an accreditation system that analyses and eventually accredits the training courses and an evaluation system that audits samples of the training courses that are run. It is called the In-service Scientific and Pedagogic Council (Law 4635/2014, March 31).

Accreditation and evaluation of in-service training courses is guided by the Portuguese law which was first approved in 1992 and that has evolved since then in order to make it clearer the aims focus and types of in-service training courses to be provided to teachers (law 22/2014, November 11). This law states that in-service training should: fulfil the teachers training needs so that they can contribute to the development and improvement of the school educational and curricular project; to the improvement of teaching quality and learning results; teachers’ professionals development so that they can give a contribution to the school results; to knowledge dissemination and capacity building so that school and school networks management and autonomy can be reinforced; share knowledge and skills towards teacher professional development. As far as the focus of the training courses is concerned, the Portuguese law states that they should concentrate on areas that coincide with the main teacher education components: content knowledge, pedagogic content knowledge; general education; teaching practice, cultural, social, and ethics knowledge.

In fact, research (Eurydice, 2015; Zhang, Parker, Koehler, & Eberhardt, 2015) has shown that teachers need development and training in some science topics as well as in multiple areas of pedagogical content knowledge. In-service teacher educators have a crucial role to play in meeting the professional learning needs of teachers of the future (OECD, 2013). Their role is very complex because, as O’Dwyer and Atlı (2015) concluded, they have to be more than simply effective teachers of teachers; they have to cater for affective needs, coach a broad range of clients, interpret contextual variables and provide appropriate feedback.

OBJECTIVES

In Portugal, courses specially designed for in-service teacher education purposes are organized by diverse institutions, being the most common higher education institutions (HEI) and school network training centres (SNTC). Most of the times, these institutions organize the courses, publicize them and teachers register in selected courses according to their interest or self-perceived needs. This raises questions about the consistency between teachers’ needs and the in-service training courses offered to them, as well as between the in-service courses and the recent science education research agenda. Hence, this paper analysis in-service training courses targeted to science teachers or to teachers who teach science components in order to find out how they respond to these questions and to find out if the answers are the same for both training institutions.

THE STUDY

The open access website <http://www.ccpfc.uminho.pt/> shows the in-service training courses accredited by the Portuguese in-service Scientific and Pedagogic Council, in the diverse subject areas and school levels. In March 2015 the website was accessed and the in-service training courses offered by the north of Portugal higher

education institutions and school networks were identified. A total of 3106 courses were identified, being 430 offered by higher education institutions and 2776 offered by school networks. Afterwards, some of those courses were selected. They were courses targeted to:

- science teachers, focusing on science content knowledge themes or on science education themes;
- teachers of the diverse subjects, including science teachers. These courses focus on: general educational issues (e.g.: assessment, special education needs) that are relevant for teaching science; cultural, social and ethics themes; educational research issues; teaching practice issues.

The result of this selection was 1555 training courses offered by HEI (190) and by SNTC (1365). However, they include two types of in-service courses: courses specially designed for the purpose of in-service training; seminars/conferences accredited for in-service training purposes. An analysis of the data provided on the 1555 courses showed that 172 were of seminar/conference type. These courses were excluded as they are not specially designed for in-service training purposes. Therefore, 1383 short courses organized for the purpose of in-service training were selected to be analysed. They were offered by HEI (184) and by SNTC (1199). Table 1 synthesises and relates the number of training courses available with the number of in-service training courses analysed, per type of training institution. It is worth noting that considering the proportion of courses offered by the two types of institutions is similar when the courses available and the courses analysed are considered. This means that the proportion of courses offered to science all teachers by HEI and by SNTC compares to the one of offered to teachers of other subjects.

The title of the in-service course was content analysed in order to identify the teacher education component it focuses on. Afterwards, those focusing on: science content knowledge were content analysed in order to identify the science area they deal with; science education courses were content analysed in order to identify the science education themes they concentrate on; general education courses were content analysed in order to identify the education issues they deal with. The courses focussing on educational research, on cultural, social and ethics and on teaching practice were not further analysed because there were very few courses in each of these categories.

Table 1: In-service courses offered and analysed, by type of training institution

Type of training institution	Training courses on the website (n=3106)		In-service training courses analysed (n=1383)	
	f	%	f	%
Higher education institution	430	13,8	184	13,3
School networks training centre	2676	86,2	1199	86,7

FINDINGS

Table 2 shows that the majority of the in-service training courses analysed focus on general issues that are relevant to science teaching but do not have a science focus and do not include a science component. A comparison of HEI and SNTC with regard to these two types of training courses indicates that the percentage of training courses dealing with specific issues is larger in the former (38,0%) than it is in the latter (23,8%) type of institution. This difference seems to be mainly due to content knowledge courses (that is courses focusing on science themes) that are offered by HEI (14,1%), through science faculties or equivalent, and that can hardly be organized by SNTC. To offer an in-service training course, training institutions need to have accredited trainers, with an academic degree that is higher than the degree of the training teachers and with a specialization on the area they are to become teacher educators. Thus, it is much easier for universities to offer courses on science knowledge as they have got much more qualified staff on the area than SNTC do. In addition, as there must be a minimum number of trainees for a course to be offered, it is much worth for HEI to offer this type of courses (because they can gather training teachers from different schools) than it is for SNTC that tend to gather teachers from the school network only.

Table 2: Focus of the training courses per type of training institution (%)
(N=1383)

Focus of the training courses		HEI (n=184)		SNTC (n=1199)	
		f	%	f	%
Specific issues (n=355)	Content knowledge themes	26	14,1	19	1,6
	Science education themes	44	23,9	266	22,2
General issues (n=1028)	General educational issues	102	55,4	793	66,1
	Cultural, social and ethics themes	7	3,8	74	6,2
	Educational research issues	2	1,1	1	0,1
	Teaching practice issues	3	1,7	46	3,8

As far as general issues courses are concerned, the percentages of courses are high (over 50%) whatever the type of institution even though HEI differ from SNTC as the latter offer a larger percentage of training courses focusing on the general educational issues than the HEI do. As it will be shown latter, general educational issues is a broad category that includes courses on several themes that can be attended by teachers of every school subject. This may mean that it is worth for SNTC to organize courses on general issues because these courses can gather school network teachers of the different school subjects and therefore it is easy to reach the minimum number of trainees.

The training courses focusing on science content knowledge themes are reduced in number (n=45). They include large scope courses (dealing with interdisciplinary science themes or with a set of topics that belong to diverse science areas) or subject focused courses, concentrating on biology, chemistry, geology or physics (table 3).

Comparing the two types of training institutions, the percentages of physics and science courses offered by HEI surpass those of the SNTC while the percentage of biology and geology courses offered by SNTC surpass HEI. This result may be due to the fact that, as students perceive physics as being a difficult subject (Angell, Guttersrud & Henriksen, 2004), science faculties feel like helping teachers to overcome their lack of knowledge by offering in-service training courses focusing on physics issues. The percentages of courses focusing on chemistry are low, in both types of institutions. As it is our belief that teachers' chemistry knowledge base also needs to be updated, these so low percentages were unexpected. A consequence of this is that teachers may find it hard to attend an in-service course on Chemistry knowledge to update their content knowledge base.

Table 3: Science scope of the content knowledge training courses (%)
(N=45)

Science scope	HEI (n=26)	SNTC (n=19)	Examples of training courses themes
Science	30,8	21,1	Contemporary science themes; Earth and life science topics
Biology	11,5	26,3	Ethnobotanics; Mycology & environment
Chemistry	3,9	5,2	Biodiesel production; Chemistry, health and environment
Geology	19,2	26,3	Viana do Castelo geologic Patrimony; Geology and sustainability
Physics	34,6	21,1	Topics and history of astronomy; Sound and light waves

Courses on cultural, social and ethics themes, on educational research issues and on teaching practice issues are very few (table 2) and they were not further analysed. However, it is worth noting that educational research is a teacher education component prescribed in the post-Bologna law and that every teacher should hold knowledge on in order to being able to permanently evaluate and improve his/her own teaching practice. Besides, training on the cultural and social components is relevant not only because it is prescribed in nowadays teacher education law but also because teachers need to be aware of the culture and the society characteristics of the school environment if they are going to adopt a science, technology and society perspective. Finally, the ethics component is relevant not only from a teacher own action point of view but also from a student education point of view. In fact, issues like access to information and easy use of text and image raise questions of copyright and authorship that today students need to be educated for using.

As shown by table 4, the science education training courses focus on a variety of themes, whatever the type of institution, even though there are some differences between the courses they offer. The themes compare to those that Mortimer (2002) and Paixão, Lopes, Guerra, and Cachapuz (2008) have identified as being in the science education agenda.

With regard to practical work courses, the percentage of courses offered by HEI is higher than the percentage of courses offered by SNTC. It should be noted that the Portuguese secondary school syllabuses includes a set of laboratory activities that must be performed with/by the students. As some teachers lack laboratory skills, they may look for training courses that concentrate on those activities and HEI may offer them because they want to help teachers and they have appropriate lab equipment to perform those activities.

Table 4: Focus of the science education training courses (%)
(N=310)

Science education issues	HEI (n=44)	SNTC (n=266)	Examples of training courses themes
ICT in science education	13,6	23,3	ICT in science teaching
Practical work	27,3	17,7	Lab activities in science teaching; The Penha mountain as a Geology teaching resource
Health education	20,5	39,8	Sex education in school context; Health education in school for tobacco prevention.
Environmental education	6,8	8,6	Biodiversity, nature conservation and environmental education
Problem-based learning of science	9,1	0,4	The learning of science and geography through PBL
Science, technology and society	2,3	0,8	Applying STEM in the classroom
History of science	4,5	0,0	History of science in science teaching
Science curricula	6,8	3,0	Teaching and learning Environment/Geography Study and the horizontal and vertical curriculum articulation
Science teaching approaches	9,1	4,5	Sound and light: possibilities in the classroom Physical Sciences: a modern and global approach
Other	0,0	1,9	Science and mathematics inclusive teaching strategies

The percentages of information and communication technology (ICT) in science education and of health education courses offered by SNTC are higher than the percentages of courses offered by HEI. Health education is even the area that got the highest percentage of training courses. This may be due to the fact that since 2005 (law 25994/2005, December 16) the ministry of education has been increasingly valuing health education in schools and settling training requirements for teachers that were appointed to engage into health education projects (law 2506/2007, February 20; law-60/2009, August 6, law 196-A/2010 April 9). As some teachers, namely some science teachers (as it is the case of physics and chemistry teachers), have no undergraduate training in health education, then they may put pressure on their school counterparts so that those teachers that fulfil the formal requirements can organize some training on health education in their school or in their school network. In addition, the analysis of the titles of the health education courses suggests that they concentrate on a variety of different issues like healthy life styles, oral health, sex education, nutrition, etc. which also explains the large number of courses offered in the area.

Problem-based learning of science got a higher percentage in the case of HEI (9,1%) than it did in the case of SNTC (0,4%). This may be due to the fact that Problem-based learning is a new methodology in science teaching (Hung, Jonassen, & Liu, 2008) and, as it should be expected, it has to do with a methodological innovation that comes from educational research carried out by HEI and it takes time before school teachers feel comfortable not only to teach with it but moreover to train their counterparts on it. Some history of science in-service training is offered by HEI only. This may be due to the fact that some HEI have specialists on history of

science which are not to be expected in the schools.

As far as courses within the scope of general education are concerned, they cover the diverse general education teacher training components (table 5) but there are some differences between HEI and SNTC.

Table 5: Focus of the general education training courses (%)
(N=895)

General educational issues	HEI (n=102)	SNTC (n=793)	Examples of training courses themes
Curriculum development	4,9	0,5	Curriculum horizontal and vertical articulation
ICT	20,6	40,5	Exploration of educational software - Movie Maker
Special educational needs	5,9	12,1	Improving educational practices for students with special needs
Learning difficulties	7,8	8,4	Learning difficulties and educational success
Teacher characteristics	0,0	1,8	The importance of voice and corporal posture in the teaching profession
School management	25,5	12,2	School management
Assessment	14,7	11,9	Students' learning assessment; Supervision and assessment of teacher performance; Schools self-assessment and educational project
Students' misbehaviour	0,0	8,7	Misbehaviour in the school
First aid	0,0	1,4	The basics of first aid in the school context
Educational mediation	20,6	2,5	Conflicts mediation in the school community

The highest percentage of courses was got for ICT courses offered by SNTC, which is about the double of the one obtained for HEI. In today's technologically advanced information societies, ICT is a relevant device to teach science and to make science teaching more appealing to students. Teachers' awareness of this may lead them to look for training in order to try to be updated. However, it may be that they feel afraid of taking in-service training at HEI, which they tend to imagine as being more theoretical and/or complex, and to prefer to do it at SNTC, that they may imagine as being more practice focused.

School management and educational mediation are the areas in which the percentages of courses offered by HEI are higher than the percentages of the courses in the same areas, offered by SNTC. This may be due respectively to the specialization and the novelty of these areas.

In some themes the percentages are similar (e.g., assessment) but in other areas (e.g., special educational needs) they are a bit higher for SNTC. The remaining types of courses are quite rare and some of them are offered by SNTC only. Some of them focus on very practical issues like students' misbehaviour and first aid. Some of these results may be explained by the fact that some schools may have a special education teacher and/or a psychologist which may be asked to organize training for their school teachers, namely on students' behaviour and on special education.

CONCLUSIONS AND IMPLICATIONS

The results of this study suggest that a variety of training courses is available to science teachers and that SNTC offer much more courses than HEI. The courses offered cover the diverse teacher education components but they do it differently. In fact, in some areas a lot of courses are offered but in other areas it may be hard for teachers to find an in-service training course. Of course, teachers can ask for a course in a specific area of their own interest but it requires them to find the right training institution, to take some initiative to get in touch with it and to be lucky to have a teacher trainer available to organize the required training. It is worth noting that the analysis reported in this paper focused on the title of the in-service courses only. Of course research is needed not only in order to find out how the course content is a good development of it and how the courses are put into practice which something that depends partly on the teacher educators that are in charge of it and also on the availability of the resources required.

Institutions that offer in-service training to teachers need to be accredited and therefore the training they offer fulfils minimal quality requirements. However, some issues may be raised with regard to in-service training. On

one hand, HEI for their mission should be expected to offer more up to date and innovative courses (Hénard & Roseveare, 2012) in all the teacher education dimensions. Nevertheless, even though there are six HEI (versus 32 SNTC) in the geographic area considered for the purpose of this study, the number of courses they offer and that are targeted to the population of this study is quite low and it could be argued that many teachers may not be able to enter a course offered by a HEI. Teachers can ask HEI to offer a specific training course but teachers may feel afraid of approaching it to ask for training. Therefore, there may be a problem with HEI in-service training offer: HEI may not offer courses because teachers do not look for them; and if HEI do not offer courses, then teacher cannot choose them. Also, HEI formative offer is a top-down one that may be disconnected from teachers' real needs (Hénard & Roseveare, 2012).

On the other hand, most SNTC teacher trainers are experienced teachers (OECD, 2013) which are expected to offer quite practical and contextualized courses. However, they are not professional science education researchers and therefore cannot be expected to be as much specialists on the course issues as HEI teacher trainers should be. Consequently, they may not be enough up dated in terms of recent science education knowledge. However, they may be easier to approach by their colleagues to organise a specific training course. This bottom-up approach gives rise to a sense of empowerment and confidence favours collaborative, interactional (Coolahan, 2002) and context dependent training techniques. In addition, SNTC offer in-service training free of charge and organize it in (or very near) the place where teachers work, while HEI charge teachers for course attendance and may be far away from the school where they teach. Nevertheless, OECD (2013) emphasizes the importance of external assistance to the process of in-service teacher education, such as support from HEI, education centres, and regional or specialist support teams.

However, if in-service training is to have any positive effect on teacher professional development, the in-service training courses that qualify for teachers' progression should be well identified so that teachers do not complete the required credits with courses that give a limited contribution for their professional knowledge base and that have low relevance for improving science teaching in schools.

According to Coolahan (2002), in-service training needs may have two main origins: education system needs, which may be regarded as being prominent; and the personal and individual needs of the teachers. As the former cannot exclude the latter, the challenge is to find ways of combining trainings with the two aims as well as trainings offered by the diverse types of training institutions, namely by HEI and SNTC, and given by qualified teacher educators. As most teacher educators' have no training (Bayrakci, 2010), this may require the definition of general and content dependent teacher educator's profiles as well as the formalization of a teacher educator's development system.

A coherent system of professional development activities for teacher educators should be based on knowledge and research regarding the work and learning of teacher educators (OECD, 2013). In addition, and in order to improve in-service training, teacher educators' accreditation should be stricter and require a specialization on the issues the courses focus on, which may require support in terms of their own educational and professional development.

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