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ANALYZING PRE-SCHOOL STUDENT TEACHERS' AND THEIR COOPERATING TEACHERS' ATTITUDES TOWARDS THE USE OF EDUCATIONAL TECHNOLOGY

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ABSTRACT

Educators have been optimistic that technology would enhance teaching and learning by effective use of educational technology in classroom atmosphere. But, little attention has focused on the attitudes of both preschool pre-service and their cooperating teachers towards using educational technology in the classroom. This study employed an “attitude scale” to provide insights into the prospective pre-school pre-service and their cooperating teachers’ attitudes towards the use of technology in the classroom. A 36 item, 5-point Likert-type scale was administered to all entry level preschool pre-service student teachers (n=160) enrolled in the Faculty of Education of Selçuk University during the 2005–2006 academic year and their preschool cooperating teachers (n=100) working in Konya. Results indicated that significant differences exist between pre-service and their cooperating preschool teachers from their “views on the use of educational technology”, “use of activities in preschool classes” and “use of educational technology in preschool classes”. Implications for pre-service and cooperating teacher education and further research are discussed.

Key words: Preschool teachers, educational technology, pre-service teachers’ attitudes, cooperating teachers, attitude scale.

OKUL ÖNCESİ ÖĞRETMEN ADAYLARI VE ONLARIN UYGULAMA ÖĞRETMENLERİNİN EĞİTİM TEKNOLOJİSİ KULLANIMINA YÖNELİK TUTUMLARININ İNCELENMESİ

ÖZET

Eğitimciler, sınıf içinde eğitim teknolojisinin etkili kullanımının öğrenme ve öğretmeyi geliştirdiği konusunda iyimserdirler. Fakat, şu ana kadar, okul öncesi öğretmen adayları ve onların uygulama öğretmenlerinin sınıfta eğitim teknolojisi kullanımına karşı tutumları üzerine çok az araştırma yapılmıştır. Bu çalışma, bir “tutum ölçeği” aracılığıyla, okul öncesi öğretmen adayları ve onların uygulama öğretmenlerinin sınıfta eğitim teknolojisi kullanımına karşı tutumlarını ortaya koymayı amaçlamaktadır. Bu çalışma, 2005-2006 öğretim yılında Selçuk Üniversitesi Eğitim fakültesi ne kayıt olmuş (160) okul öncesi öğretmen adayları ve halen Konya’da görev yapmakta olan (100) uygulama öğretmenine 36 maddelik 5’li Likert tipi bir ölçeğin uygulanmasını kapsamaktadır. Veri analizi, okul öncesi öğretmen adayları ve onların uygulama öğretmenleri arasında “Eğitim teknolojilerini kullanma davranışları”, “Okul öncesi sınıflarda öğretim etkinliklerini kullanma”, “okul öncesinde eğitim teknolojilerini kullanma” tutumları hakkında önemli farklılıklar bulmuştur. Çalışma, okul öncesi öğretmen adayları ve onların uygulama öğretmenlerinin eğitimi hakkında neler yapılması gerektiği konusunda önerilerde bulunmuştur.

Anahtar sözcükler: Okul öncesi öğretmenleri, eğitim teknolojisi, öğretmen adaylarının tutumları, uygulama öğretmenlerinin tutumları

I. INTRODUCTION

Technology has been the catalyst for change at our school and continues to be along with our increasing understandings about teaching and learning contexts. However, preparing pre-service and their cooperating teachers to use technology appropriately is a complex task for teacher educators (Mergendoller, 1994). In this process, Kersaint and Thompson (2002) noted that it is important to explore the role that beliefs play in technology integration. Waits and Demana (2000) argue that adoption of technology by teachers requires professional development that focuses on both conceptual and pedagogical issues. By ongoing support in terms of "intensive start-up assistance and regular follow-up activities" the teachers should have a desire to change within the profession (p. 53). It is extremely important for teacher education programmers in higher education to ensure that instructional applications of hi-techs are infused within a variety of curricular experiences for pre-service teachers. It is suggested here that teachers must feel comfortable and secure while learning how to use computers and related technologies (Todman & Dick, 1992). Dawes (1999) stated, in one of her studies, that teachers must be educated about computers if they are going to teach technology to children. They also have to follow technological innovations. Teachers must play an important role in using new technology to enhance the learning of their students. In this way, teachers become an important element in the education of children in the use of technology.

Since 1990, there have been several major comprehensive reviews of the literature on pre-service and their cooperating teachers' use of technology (e.g. Mecklenburger, 1990; Dwyer, Ringstaff, & Sandholtz, 1991; Wright et al., 1994; Means & Olson, 1994; Dyrli & Kinnaman, 1994; Branch, 1994; Driscoll, Klein, & Sherman, 1994; Earle, 1994, 1998, 2002; Reiser, 1994; Office of Technology Assessment, 1995; Fisher et al, 1996; Davis & Dickard, 1996; Birman et al, 1997; Kerry & Farrow, 1996; Powell, 1999; Kabadayi, 2001, 2005; Hawthorne, 2002; Bayhan et al, 2002; Han, 2002; Blatchford, & Blatchford, 2002.; Baylor & Ritchie, 2002; Heppell, 2003; Wheatley, 2003). Incorporated into each of these studies/reviews is a component for rethinking the role of the teacher for learning; attitudes and beliefs of pre-service and their cooperating teachers towards the technology use in classroom; encouraging them to use technology in teaching preschoolers; supporting the use of computerized simulations as an innovative supplement to an early childhood pre-service curriculum course; changing the traditionally accepted developmental limits on children's learning via technology; using the computer effectively to enhance children's learning in technology rich environment.

II. RESEARCH OBJECTIVES

The purpose of this study was to analyze the beliefs and attitudes of preschool teachers towards the use of educational technology in teaching / learning process in Turkish context.

To guide this study, the following research questions were investigated:

1. Was there significant difference between pre-school pre-service and their cooperating teachers towards the use of technology with regard to *difficulty*, *usefulness*, *effort*, *support*, *interest*, *effectiveness* and *acceptance* subscales respectively?
2. What were the pre-school teachers' views on the *frequency* of use of educational technology in their classes?
3. What were the pre-school teachers' views on the *frequency* of the *techniques* the pre-school teachers use in their classes?

III. METHODOLOGY

This study aims at analyzing the attitudes and beliefs of prospective pre-school pre-service and their cooperating teachers towards the use of technology in the classroom through "*attitude scale*" from their "*views on the use of educational technology*", "*use of activities in preschool classes*" and "*use of technology in preschool classes*" aspects. The sample of this study comprises 160 preschool pre-service student teachers who were enrolled in the Faculty of Education of Selçuk University and 100 preschool cooperating teachers who are currently working in Konya.

The data was analyzed by the SPSS statistical package, using the frequency distribution and percentage, the mean scores, reliability and factor analysis, and independent group t test procedures. While comparing pre-service and their cooperating teachers' attitudes mean score differences were taken into account.

Instrument

In this study an attitude scale, which was developed by Gömleksiz, (2004) was used to collect and to assess teachers' needs and portray their views towards use of educational technology in preschool settings. The scale was first translated from English into Turkish as it was originally in English. It was rearranged and adapted to the teaching domains of preschool teachers. The study scale consisted of 36 (24 positive and 12 negative) items comprising pre-service and their cooperating preschool teachers' "*views on the use of educational technology*", "*use of activities in preschool classes*" and "*use of technology in preschool classes.*" Having focused on the difficulty, usefulness, effort, support, interest, effectiveness and acceptance toward educational technology the scale included Likert-type items about different aspects of use of educational technology, investigating previous experience and future intentions of the participants.

The attitude scale presented in a 5-point Likert-scale format ranging from (5, strongly agree, 4, through agree, 3, partly agree, and 2, disagree to 1, strongly disagree) asked the teachers to describe their experience and attitudes towards the use of educational technology. As a result of test re-test application of the attitude scale to test the various dimensions of the scale on another teacher group before, correlation was found as $r = 0.75$. Cronbach alpha reliability value of the scale was found as $.77$. In addition to this, Cronbach-alpha of each subscale was found as difficulty $.75$, usefulness $.68$, effort $.66$, support $.74$, interest $.76$, effectiveness $.70$, and acceptance $.65$. It is supported that the reliability coefficient between 0.60 and 0.70 is satisfactory for Likert Styles related to the studies of reliability analysis (Cronbach, 1990).

Assumptions

It is, in this study, assumed that:

1. All subjects answered the surveys honestly.
2. The sample represents pre-service pre-school teachers attending to Selçuk University and their cooperating pre-school teachers working at pre-schools in Konya city, Turkey.
3. The subjects are able to understand the items in the attitude scale.

The study is limited with the followings:

1. The pre-service pre-school teachers attending Selçuk University and their cooperating pre-school teachers working in the preschools in Konya city center respectively under the title of Ministry of National Education.
2. The Attitude Scale
3. Responses of the pre-service and their cooperating preschool teachers to the Attitude Scale
4. 2005- 2006 academic year

IV. RESULTS AND INTERPRETATION

The Table 1 posed that the preschool teachers in both groups think that using educational technology is not easy in teaching children in preschool settings. No statistically significant differences were found between the two groups in all items shown in Table 2. It shows that the teachers are hesitating in using educational technology in preschool as it needs great effort and trial. These results show that teachers are not motivated enough to overcome the difficulties in using technological devices in classroom settings

In the item 21, the study indicated that pre-service preschool teachers scored higher than their cooperating preschool ones in respect of teachers' views on difficulty subscale ($p < 0.05$). The cooperating preschool teachers did not have the same opinion with their colleagues that schools have inadequate budget in providing necessary technological equipments

Table 1: Views on Difficulty the Preschool Teachers Face in Using and Providing Educational Technology

Item No	Item	Pre-service (n: 160)		Cooperating (n: 100)		t	P
		\bar{X}	sd	\bar{X}	sd		
1	It is difficult to learn how to use a new technology in the classroom.	2.70	1.088	2.50	1.136	1.416	0.158
7	It is not easy to use educational technology.	2.80	1.064	2.69	1.083	0.821	0.412
17	I can easily get necessary equipment whenever I need.	2.91	1.021	2.77	1.156	1.020	0.308
21	School's budget is inadequate for buying necessary materials.	3.11	0.794	1.15	1.159	2.156	0.032*
31	A person has to do a difficult training course to understand how to use technology in class.	3.74	1.154	3.59	1.078	1.034	0.302

Negative items were reversed in order to maintain a homogenous score

* $p < 0.05$ df: 258

Table 2: Views on the Usefulness of Educational Technology

Item No	Item	Pre-service (n: 160)		Cooperating (n: 100)		t	P
		\bar{X}	ss	\bar{X}	ss		
2	Students participates actively when I use technological aids	3.99	0.996	4.22	0.821	1.928	0.055
6	In my opinion educational technology enriches learning environment	4.49	0.818	4.60	0.749	1.063	0.289
10	There is a relation between success and use of technology.	4.18	0.901	4.42	0.697	2.249	0.025*
18	Using educational technology makes learning more interesting.	4.28	0.740	4.45	0.656	1.841	0.067*
23	Technology makes learning boring for students.	1.90	1.042	1.80	1.101	0.739	0.461
30	Using educational technology is a waste of time.	1.66	0.965	1.81	2.243	0.719	0.473

Negative items were reversed in order to maintain a homogenous score

* $p < 0.05$ df: 258

The t-test results in Table 2 expose that all participants show positive attitudes towards the use of educational technology in preschool settings. The fact that no statistically significant differences were found between the two groups in all items shown in Table 3 explains that the teachers are in favor of the use of educational technology in preschool classes. Moreover, being aware of the importance of the technology in preschool settings, both pre-service and their cooperating teachers do not perceive using technology in class as waste of time. They believe that using technology facilitates the students' success and enhances their learning.

It is shown that statistically significant differences were found in items 10 and 18 ($p < 0.05$). The cooperating preschool teachers think more positively than the pre-service ones in terms of degree of effects on students' success and learning.

Table 3: Views on the Efforts of Pre-service and Cooperating Teachers to Use Educational Technology

Item No	Item	Pre-service (n: 160)		Cooperating (n: 100)		t	P
		\bar{X}	ss	\bar{X}	ss		
4	I try to bring technological aids into the classroom.	3.76	0.982	4.01	0.836	2.138	0.033*
8	I always try to persuade my colleagues to use new technologies in the classroom.	3.83	0.848	4.01	0.799	1.736	0.084
11	I am very willing to provide technological aids.	4.03	0.863	4.29	0.686	2.549	0.011*
34	A student can learn easily without educational technology.	2.67	1.020	2.54	1.072	1.017	0.310
36	I always try to discover new ways for effective teaching.	3.91	0.987	4.31	0.662	3.578	0.000*

Negative items were reversed in order to maintain a homogenous score

* $p < 0.05$ df: 258

The results of t-test in Table 3 expose that teachers in both groups have positive attitudes toward effort scale in general. Both pre-service and their cooperating teachers are of the opinion that technology aided teaching in preschool settings is sine qua non for preschoolers' education. That significant difference has been found in the items 4, 11 and 36 ($p < 0.05$) means that cooperating teachers have a bit more positive attitudes than pre-service ones towards the items in question above. It is seen that findings in item 34 support the explanation above.

Table 4: Views on the Support the Teachers can Get Educational Technology

Item No	Item	Pre-service (n: 160)		Cooperating (n: 100)		t	P
		\bar{X}	ss	\bar{X}	ss		
3	My school does not support me when I demand new equipment.	3.76	0.982	4.01	0.836	0.401	0.689
9	I share my experiences with my colleagues.	4.11	0.829	4.46	0.609	3.615	0.000*
22	Other teachers at my school always support me to provide necessary equipment.	3.20	0.700	3.11	1.202	0.698	0.486
26	In-service activities have helped me and developed my skills in using educational technology.	3.64	0.812	3.91	0.928	2.406	0.017*
28	Educational technology is available easily at my school.	3.04	0.837	2.75	1.080	2.440	0.015*
32	I can get enough support easily in finding necessary equipment	3.15	0.924	2.84	1.111	2.478	0.014*

Negative items were reversed in order to maintain a homogenous score

* $p < 0.05$ df: 258

The study data given in Table 4 shows how both pre-service and their cooperating teachers evaluate the support they expect from their schools and colleagues. Most of the teachers are of the opinion that neither they are supported by technological equipments by their schools nor the devices can easily be accessed when they are in need of new equipments in the items 28 and 32. In addition to this, cooperating preschool teachers have a bit positive attitudes towards the benefits of in-service education and cooperation with their colleagues in respect of technology support subscale in the items 9 and 26 ($p < 0.05$).

Table 5: Views on the Interest of the Teachers on Educational Technology

Item No	Item	Pre-service (n: 160)		Cooperating (n: 100)		t	P
		\bar{X}	ss	\bar{X}	ss		
5	I would like to learn more about new developments in educational technology	4.46	0.744	4.48	0.756	0.207	0.836
13	I am not interested in using educational technology in the classroom.	2.15	1.240	1.75	1.080	2.693	0.008*
15	I don't have enough knowledge for using technological aids.	2.91	1.163	2.62	1.164	1.988	0.048*
20	Using educational technology in teaching children would be interesting.	3.65	1.055	4.00	0.921	2.780	0.006*
24	Students pay more attention when I use technology in the classroom.	4.17	1.058	4.40	0.737	1.907	0.058
29	I follow new developments in educational technology properly.	3.22	1.024	3.24	1.099	0.157	0.875

Negative items were reversed in order to maintain a homogenous score

*p < 0.05 df: 258

The findings displayed in Table 5 indicate that there are statistically significant differences in having interest and enough knowledge to use technological aids between both pre-service and their cooperating pre-school teachers in the items 13, 15 and 20 (p < 0.05). Pre-service preschool teachers have more positive attitudes from the point of having interest than their cooperating ones while they believe that they are not equipped with enough technologic knowledge to use the devices effectively. Both the pre-service and their cooperating preschool teachers are of the same opinion to follow new developments in educational technology properly.

Table 6: Views on the Benefits of Educational Technology

Item No	Item	Pre-service (n: 160)		Cooperating (n: 100)		t	P
		\bar{X}	ss	\bar{X}	ss		
16	I think using technology in class has little effect on students' learning.	1.83	1.005	1.76	1.040	0.571	0.568
19	My students learn better when I use technology in the classroom.	4.12	0.912	4.27	0.679	1.434	0.153
25	Using educational technology has an important place in learning.	4.25	0.880	4.39	0.664	1.351	0.178
27	Technology has a large influence on students' motivation.	4.06	0.743	4.13	0.872	0.748	0.455

Negative items were reversed in order to maintain a homogenous score

*p < 0.05 df: 258

The findings presented in Table 6 displays that both pre-service and their cooperating preschool teachers agree on the benefits of using technology in their classes since there existed no statistically significant differences between both groups. Both the pre-service and their cooperating preschool teachers admit the important role technology plays and they believe that their students are motivated and learn better via technology in pre-school settings.

Table 7: Views on the Acceptance of Educational Technology

Item No	Item	Pre-service (n: 160)		Cooperating (n: 100)		t	P
		\bar{X}	ss	\bar{X}	ss		
12	I accept the importance of educational technology in teaching children.	4.29	0.846	4.32	1.011	0.268	0.789
14	My students accept the importance of technology in preschool classes.	3.55	0.831	3.86	0.824	2.919	0.004*
33	My colleagues share my opinions on the use of educational technology.	3.46	0.727	3.54	0.974	0.748	0.455
35*	My students find use of technology boring.	1.86	0.827	2.22	1.199	2.861	0.005*

Negative items were reversed in order to maintain a homogenous score

*p < 0.05 df: 258

The study data in Table 7 exposes that both pre-service and their cooperating preschool teachers accept the importance of the technology use and express that they have nearly the same opinion in using it in the classroom. Cooperating preschool teachers have a bit more positive attitudes than their pre-service ones in their students' acceptance the importance of educational technology in item 14. The fact that there exists a significant difference between two groups in the item 35 supports the data 14, which is about the acceptance of the importance of educational technology.

Table 8: Use of Educational Technology in Preschool Classes (n: 260)

Technology used	Never		Rarely		Sometimes		Often		Always	
	f	%	f	%	f	%	f	%	f	%
Overhead Projector	84	18.1	57	12.3	91	19.6	21	4.5	7	1.5
Tape-Recorder	23	5.0	27	5.08	70	15.1	89	19.2	51	11.0
Tv-Video	29	6.3	12	2.6	74	15.9	84	18.1	61	13.1
Slides	84	18.1	52	11.2	74	15.9	40	8.6	10	2.2
Flashcards	49	10.6	41	8.8	65	14.0	64	13.8	41	8.8
Pictures	21	4.5	20	4.3	49	10.6	70	15.1	100	21.6
Computer	71	15.3	39	8.4	75	16.2	41	8.8	34	7.3
Board	40	8.6	30	6.5	81	17.5	48	10.3	61	13.1

The results of the data in Table 8 pose that both pre-service and their cooperating preschool teachers use *pictures, board, TV-video, tape-recorder, flashcards, computer, slides* and *OHP* in the order of importance respectively. The descriptive data show that the participants tend to use mostly traditional teaching devices such as board, pictures, etc., rather than high-techs such as computer, data show etc.

Table 9: Use of Activities in Preschool Classes (n: 260)

Techniques used	Never		Rarely		Sometimes		Often		Always	
	f	%	f	%	f	%	f	%	f	%
Pair work	15	3.2	36	7.8	113	24.4	72	15.5	24	5.2
Games	4	0.9	24	5.2	31	6.7	77	16.5	124	26.7
Problem Solving	10	2.2	29	6.3	83	17.9	82	17.7	56	12.1
Role-playing	15	3.2	27	5.8	90	18.4	86	18.5	42	9.1
Group work	3	0.6	19	4.1	33	7.1	126	27.2	79	17.0
Authentic Texts	17	3.2	40	8.6	71	15.3	85	18.3	47	10.1
Information gap	12	2.6	32	6.9	64	3.8	81	17.5	71	15.3
Simulation	21	4.5	20	4.3	49	10.6	70	15.1	100	21.6
Drama	4	0.9	24	5.2	31	6.7	77	16.5	124	26.7

The findings displayed in Table 9 show that both pre-service and their cooperating preschool teachers have a tendency to use games, group work, drama, simulation, information gap, problem solving, authentic text and pair work activities in the order of importance respectively.

V. DISCUSSION

The results of the study data expose that both pre-service and their cooperating teachers believe that using technology in preschool settings is necessary and important for both themselves and for the children. It is suggested that we, as teachers should promote the effective use of computers in pre-schools (Bayhan et al. 2002). The study also indicates that the teachers are not motivated enough to overcome the difficulties and their phobia in manipulating technologic devices in classroom settings. It is supported that if the teacher does not know how or what to teach, the children will resort to the trial and error approach to learning, which will be much less efficient than if the teacher provided systematic instruction on the use of the computer (Fraser, 1998). Moreover, it is also considered necessary that pre-service teachers feel competent in the use of technology (Davis & Dickard, 1996).

Majority of the teachers believe that they are not supported by technological equipments by their schools when they are in need of new equipments. To overcome these barriers, staff development for technology use tends to be more effective in the presence of a consistent model for supporting collaboration among teachers. Those programs that integrate technology with a clearly identified mentoring program tend to sustain technology use in the classroom, increase teacher satisfaction with technology, and provide motivation to seek out new technologies (Kerry & Farrow, 1996).

The study data poses that both the pre-service and their cooperating preschool teachers agree on the same point that they should follow new developments in educational technology properly. Graddol (1997) supports this by stating that technology now lies at the heart of the globalization process; affecting education, work and culture.

Great majority of the teachers believe that their students are motivated and learn better via technology in pre-school settings. To attain this, Haugland (1995) suggests that four factors are essential for computers to have a significant impact in the early childhood education environment. Three of Haugland's four factors involve the early childhood educator. Specifically, teachers must be open to technology and receptive to the placement of the computers in the classroom. They also must be aware of the potential benefits of computers and that computers can play a positive role in the classroom. To achieve this awareness, they must be trained in early childhood computer integration. Finally, computers must be available in the early childhood setting.

Practically all of the teachers accept the role and importance of technology use in pre-school settings as it is stated that educators are familiar enough with the technology to be able to guide young children's learning because computers can be used to facilitate learning (Powell, 1999; Clements et al., 1993; Haugland, 1992).

VI. CONCLUSION AND IMPLICATIONS

The study data showed that teachers are not motivated enough to overcome the difficulties in manipulating technological devices in classroom settings. Both pre-service and their cooperating teachers do not perceive using technology in class as waste of time since they believe that using technology facilitates the students' success and their learning. In addition to this, cooperating preschool teachers have a bit positive attitudes towards the use of technology in respect of technology *support, effort, usefulness, acceptance* and *benefits* subscales.

The results of the study data also show that the participants tend to use mostly traditional teaching devices rather than high-techs. Moreover, the findings indicate that both pre-service and their cooperating preschool teachers prefer using games, group work, drama, simulation activities in preschool settings most. As a consequence it was implied from the study data that both pre-service and their cooperating teachers be educated and equipped with necessary technological know-how during in-service training.

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APPLICATIONS AND PROBLEMS OF COMPUTER ASSISTED EDUCATION IN TURKEY

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ABSTRACT

This paper focuses on the Computer Assisted Education (CAE) in Turkey; reviews of the related literature; examines the projects, applications and problems on the Computer Assisted Education (CAE) in Turkey compares with the World; exposes the positive and negative aspects of the projects; a number of the suggestion presents on the effective use of CAE in Turkey.

Key Words : computer assisted education; Turkey; world.

TÜRKİYE'DE BİLGİSAYAR DESTEKLİ EĞİTİM UYGULAMALARI VE SORUNLARI

ÖZET

Bu çalışmada Türkiye'de bilgisayar destekli eğitim konusu ele alınmıştır. Çalışmada ilgili literatür incelemesi yapıldıktan sonra, Türkiye'de bilgisayar destekli eğitim konusunda gerçekleştirmiş olan projeler, uygulamalar ve karşılaşılan sorunlar, Dünyada bu konuda gelişmiş ülkeler ile karşılaştırmalı olarak ele alınarak incelenmiştir. Projelerin olumlu ve olumsuz yönleri belirlendikten sonra, Türkiye'de bilgisayar destekli eğitimin etkili olarak kullanımına yönelik olarak geliştirilmiş birtakım öneriler sunulmuştur.

Anahtar Sözcükler. bilgisayar destekli eğitim; Türkiye; Dünya; sorunlar

1. INTRODUCTION

Computer-assisted instruction (CAI) is a narrower term and most often refers to drill-and-practice, tutorial, or simulation activities offered either by themselves or as supplements to traditional, teacher-directed instruction (Grimes, 1997; Batey, 1986). The term, Computer-Assisted Instruction (CAI) refers to the interaction of a learner with a computer in a direct instructional role. CAI addresses course content in a variety of formats, with or without the direction of a teacher (Lockard, et al, 1997). CAI applications are utilized across many different computer platforms and operating systems.

The general research areas on the computer assisted instruction in the World are the following:

- *Microcomputer use and student achievement
- *CAI and retention of learning
- *The effects of CAI on student attitudes
- *CAI and different student populations
- *Other beneficial effects of CAI such as locus of control, attendance, motivation/time-on-task CAI and different curricular areas
- *Why students like CAI?
- *Cost-effectiveness of CAI (Cotton, 2002).

The aim of this study is to examine the projects, applications and problems on the CAE, in Turkey, compare with the World, and present a number of suggestions on the effective use of CAE in Turkey.

Computer Assisted Instruction in the World

Some studies have found CAI to generate positive findings related to student achievement in reading (McCreary & Maginnis, 1989), business education (Din, 1996), and opinions of teachers to CAI (Berry, 1994). Stennett (1985) found favorable results in the literature when reviewing CAI in education. A related meta analysis of 199 comparative studies involving instruction in high schools, institutions of higher learning, and adult education settings found that CAI increased test scores by .31 standard deviations (Kulik & Kulik, 1985). Although described research supports the use of CAI as a supplement to course instructor-provided information, the effectiveness of CAI as an independent instructional tool to learning gains is not conclusive. A number of studies have found no favorable results when comparing CAI to traditional instructional methods (LaBonty, 1989; Morrell, 1992; Ruef & Layne, 1990; Wiksten, et al, 1998).

The findings of researches on the CAI in the World indicate that:

- The use of CAI is associated with other beneficial outcomes, including greater internal locus of control, school attendance, motivation/time-on-task, and student-student cooperation and collaboration than the use of conventional instruction alone.
- CAI is more beneficial for younger students than older ones.
- CAI is more beneficial with lower-achieving students than with higher-achieving ones.
- Economically disadvantaged students benefit more from CAI than students from higher socioeconomic backgrounds.
- CAI is more effective for teaching lower-cognitive material than higher-cognitive material.
- Most handicapped students, including learning disabled, mentally retarded, hearing impaired, emotionally disturbed, and language disordered, achieve at higher levels with CAI than with conventional instruction alone.
- There are no significant differences in the effectiveness of CAI with male and female students.
- Students' fondness for CAI activities centers around the immediate, objective, and positive feedback provided by these activities.
- CAI activities appear to be at least as cost-effective as--and sometimes more cost-effective than other instructional methods, such as teacher-directed instruction and tutoring.
- The use of CAI as a supplement to conventional instruction produces higher achievement than the use of conventional instruction alone.
- Research is inconclusive regarding the comparative effectiveness of conventional instruction alone and CAI alone.
- Computer-based education (CAI and other computer applications) produce higher achievement than conventional instruction alone.
- Student use of word processors to develop writing skills leads to higher-quality written work than other writing methods (paper and pencil, conventional typewriters).
- Students learn material faster with CAI than with conventional instruction alone.
- Students retain what they have learned better with CAI than with conventional instruction alone.
- The use of CAI leads to more positive attitudes toward computers, course content, quality of instruction, school in general, and self-as-learner than the use of conventional instruction alone (Cotton, 2002).

II. REVIEW OF THE LITERATURE

When we review the related literature concerned in the computer assisted education and instruction in Turkey, we see that these studies has been generally prepared as master or doctoral thesis. Some of these studies (Samur, 1989; Numanoğlu, 1992) explores the CAI softwares of Ministry of National Education and some of them (Aksoy, 1989; Gökdaş, 1996; Dursun, 1988) are concerned in the teacher training and competencies of teachers for the computer assisted instruction. On the other hand, the aim of some studies (Keser, 1988; Akkoyunlu, 1991; Taşcı, 1993; Yaşar, 1997) is to propose a CAI model for Turkish National Education System.

The aim of some studies (Yedekçioğlu, 1996; Odabaşı, 2000) is to examine the use of computers and technological resources at high schools in Turkey. Yedekçioğlu (1996) describes initiatives taken by the Turkish Ministry of Education to promote computer literacy and the use of computers in schools, from 1984 through 1994. Evaluation indicates that in Turkey's high schools, computer education is still in the early stages of development. Major problem areas are lack of financial resources, lack of appropriate planning, and lack of adequate software.

Usun (2000) indicates in his book entitled “Dünya’da ve Türkiye’de Bilgisayar Destekli Öğretim” (Computer Assisted Instruction in the World and Turkey) that the applications on computer assisted education and instruction in Turkey are not sufficient and unfortunately they are still in infancy period. Odabaşı (2000) examined faculty use of technology resources in Turkey. Results from a questionnaire showed that the faculty knows and used traditional technologies more often and lacked familiarity and use in computerized technologies. Faculty mostly used computers as word processors. The most effective factors for use were availability of the technologies, increase in student interest and improvement on student learning.

The findings of some studies (Bayraktar, 1988) indicated that computer assisted instruction was more effective than traditional instruction in Turkish National Education System. Compared to traditional classrooms, CAI was perceived as more interesting, better understood, and more motivating.

Some studies (Balcı, 1998; Evren, 1999; Akkoyunlu & Orhan, 2002) are concerned in The World Bank Supported Project, called the “Project for Globalization in Education 2000”. Balcı (1998) and Evren (1999) reports that this project was not successful from the point of the first desired aims and it only contained the

provinces and administrative districts of Turkey. Akkoyunlu and Orhan (2001) explained that this project was a very important step for Turkish Educational System. Schware and Jaramillo (1998) explored that the CES project was first formulated and undoubtedly more would be achieved in coming years. Yedekçioğlu (1996) pointed out that the CES project was useful for true introduction of CAI in higher education.

III. THE PROJECTS, APPLICATIONS AND PROBLEMS ON THE COMPUTER ASSISTED EDUCATION IN TURKEY

During the 1980s, as Turkey started laying the foundations for an Information-Based Economy, the problem of having a work force not sufficiently computer-literate became much more apparent. Thus, the Ministry of Education (MOE) embarked on an ambitious computer aided education (CAE) project in 1984. The main components of the project were identified as:

- Preparing and integrating curricula;
- Software design and development;
- Training of teachers;
- Acquiring hardware;
- Incentives to produce hardware and components locally

In the academic year 1985-86, as part of the CAE project, 1,111 computers were bought for 101 high schools -- 10 for pupils and one for the teachers in each school. Two teachers from each school were trained for five weeks. Plus, 130 PCs were bought for 101 tourism and hotel-operation high schools. Starting in the 1987-88 academic year, these schools introduced a computer-literacy course as an elective with a hands-on component. In the next academic year, 805 PCs were purchased to train pupils in vocational high schools, with some emphasis on hardware maintenance.

The positive and negative aspects of the developments in CAE Project for the 1984-88 periods may be summarized as follows:

Positive Aspects

- CAE has had a positive influence in increasing pupils' motivation to learn.
- Involving private firms helped advance the popularity of the CAE concept.
- Training of teachers and administrators in computing gave rise to a core of cadres.
- The awareness of adults about computing was raised considerably

Negative Aspects

- Software was not developed with compatibility to the curriculum in mind.
- Successfully involving teachers in CAE did not occur.
- Selected teachers were not trained in an adequate fashion.
- Private firms did not provide appropriate hardware and software.
- Private firms' involvement was below expectations (Yedekçioğlu, 1996).

In 1989, the MOE invited private firms to take part in the CAE Project. A total of 28 firms (17 local and 11 foreign) joined in 50 selected schools. The MOE also invited some universities to take part by training teachers in programming and computer literacy. By the middle of 1995, a draft of specifications including hardware, software, courseware, staffing needs and training outlines was complete, the software evaluation consultant was in place, and the fellowship trainees were at a university in the United States. By the end of the year, firms which were to provide hardware and software to the schools had been selected and the CES project was on the way (Schware & Jaramillo, 1998).

The National Council of Education, which convened in May 1996, focused its work on the following five issues in order to reconstruct the education system in conformity with the anticipated social, scientific, and technological developments of the 21st century:

1. Primary education and its orientation,
2. Reconstruction of the secondary education system,
3. Re-arrangement of the ways of transition to higher education,
4. Meeting the educational needs of society, and
5. Financing of education (Akkoyunlu & Orhan, 2001, 29-31).

As the project was due for completion in June 1997, a review was planned late enough in the implementation phase to isolate the lessons from the experiment, but in time for any corrective measures to be initiated. With

Turkey's open commitment to information technology in schools, the review assumed the continuance of the project and concentrated on areas of challenge and, improvement.

The World Bank supported project, called the "Project for Globalization in Education 2000" began a very important step for the Turkish Educational System. The aim of this project was to use instructional technology in each level of the education system to be able to create a society with adapted information and technology standards. Through this project, new computer labs were established in 2,451 primary and secondary schools in 80 cities and 921 towns in Turkey. In each of these schools the technology class rooms were equipped with: Computers, Printers, Scanners, Office program, Courseware for Computer literacy, Courseware for different subjects, Educataiment (education + entertainment) courseware, Electronic references, Video, overhead projectors, TV, educational videocassettes, and transparencies (Akkoyunlu & Orhan, 2001, 29-31; Usun, 2000, 228).

The computer companies sponsoring this project provided one year of free Internet access to project' schools. The people living near the schools had a chance to use the Internet during the weekends. The second phase of this project will continue with 3000 schools. In this project some basic principles were accepted for Turkey to move into the 21st century. These are:

- To support formal education through distance education
- To install computer labs in primary education institutions and provide access for all students to Computer Assisted Education
- To make students and teachers computer literate
- To equip the schools with modern technological materials

IV. CONCLUSION

The findings of the researches on the CAI in the World generally, indicate that CAI applications are effectively utilized across many different computer platforms and operating system and school degrees.

In spite of initiatives taken by the Turkish Ministry of Education to promote computer literacy and the use of computer assisted education in schools, from 1984 through 2002, unfortunately, computer education and CAE is still in the early stages of development. The main components of the first project on CAE in 1984, couldn't be realized yet. Although the first project of The Turkish Ministry of Education was called a "CAE Project", it has only been appeared to use computers in education and schools. In the other projects in 1993 supported by the World Bank called "The Computer Experimental Schools" and "Project for Globalization in Education 2000" the main components and aims haven't been realized yet, too. But these projects seem to be a new future and very important steps for the Turkish Educational System.

In Turkey on the CAE, the major problem areas are the following:

- the effective planning,
- the administration of the CAE projects,
- lack of enough financial resources,
- lack of adequate software and hardware,
- teacher training for CAE,
- the projects and experimental studies on the computer education and computer assisted education.

Through the determined efforts on Ministry of National Education, more than one third of the existing 5.851 schools have at least one computer lab. It is clear that the number of computers in schools in Turkey will continue to increase. But, compared with other developed countries, from the point of the CAE projects, applications and studies, Turkey is still at very early stages. As above mentioned, the main components and aims of the first project in 1984, couldn't be realized yet. But the second project named the "Computer Experimental Schools", although is no longer at an experimental stage, the implementation is complete, and all deliverables-hardware, software and training-are in place and this project undoubtedly more will be achieved in coming years.

V. SUGGESTIONS

Some suggestions on the successful and effective applications of computer assisted instruction in Turkey are the following:

- A "Computer Assisted Instruction Center" should be established with support of the universities.
- The budgets of the Ministry of National Education and universities should be increased.

- The difficulties that appeared because of the highly bureaucratic and centralized organization of the Ministry of National Education should be overcome and the Ministry, with speed working, should realize The World Bank Supported projects at once.
- It must not be considered that computer assisted education and instruction is only the duty of the Ministry of National Education. The all related institutions such as the universities, Scientific and Technical Research Institutions of Turkey (TUBİTAK), the Ministry of the Education and the private institutions must be cooperation on the software, hardware, teacher training, project, publication, research, and other related subjects.

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ARE THE RURAL SCHOOLS OF THE DEMOCRATIC REPUBLIC OF CONGO READY FOR THE \$100 LAPTOP?

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ABSTRACT

The situation of schools in the Democratic Republic of Congo in matters concerning new information and communication technologies remains alarming. Given the primary role of these technologies in teaching and learning, as well as the concern of giving Congolese rural schools access to these tools, considering the problems of lack of electricity, telephones, ventilation, the cost of computer equipment, etc. we propose the following strategies which may facilitate the introduction, access and effective use of such educational tools.

Addressing these problems and through a commitment to the use of ICT in rural schools, the new \$100 Laptop, proposed by MIT, appears to be the answer to many of the issues. The cost of the laptop seems to be affordable and it can solve the issue of the lack of ICT equipment and overcome the problem of the lack of electricity, but it is not so straightforward. It is true that these laptops can help to solve the ICT problems being faced in the educational sector. However, even at the seemingly affordable cost of \$100, this is still expensive in some local economies. In a country such as Congo, where teachers receive less than \$100 for a monthly salary, it becomes improbable that the people or the Department of Education can afford this financial outlay.

Key words: rural schools, ICT, \$100 laptop, strategies

I. INTRODUCTION

At a time when the situation in certain parts of the world demands an evaluation of the effective use of new technologies, the people of the world are all talking about the \$100 laptop. This \$100 laptop provides high quality ICT for developing countries however; the Democratic Republic of Congo is still not yet in a situation to be able to reach such goals. In fact, the campaigns of ICT and the training of teachers in matters of new information and communication technologies among Congolese society in general and the rural schools in particular, have never truly begun. This exemplifies certain ignorance and even technophobia teachers and students possess towards these new tools. Some teachers living in large centres have the privilege of surfing the internet, as well as having an email account, both of which can be considered a luxury, given the high cost of access to the internet.

At present, the relationship in the Democratic Republic of Congo between new information and communication technologies and its actual application remains the domain of this particular field's researchers, who are becoming conscious of the possible role new technologies have in the learning of students. On the other hand, we are aware of the negative influence the quick expansion of these means of communications have on the progression of certain courses. This was illustrated when one student declared not knowing of a single class in which students did not check their emails at least once during class hours (William Colgin, 2005).

We shall attempt to analyse the present situation of rural schools in the Democratic Republic of Congo, as well as propose certain suitable solutions to ease the introduction of new information and communication technologies in general and the possibilities of the introduction of the \$100 laptop in Congolese rural schools.

With respect to the \$100 laptop, we hope also that Congo can cooperate with such international organisations as UNESCO, MIT media Lab, and the World Bank in the way to solve problems of buying those very high tech tools, to develop the new area of new technologies in rural schools. However, Congo should take on the responsibility to organise the construction of school buildings and equip them with desk, stools, doors, windows, etc. In our opinion, once these new technologies in general, and the \$100 laptop in particular, are effectively introduced and used, a great number of problems plaguing Congolese education will be resolved.

II. CONGOLESE RURAL EDUCATION CONDITIONS

-Kindergarten

Kindergarten teaching in the Democratic Republic of Congo is characterised as follows: the difficulty of controlling this sector following the rapid development of kindergartens in large rural centres; the fate of the national languages in kindergartens in the face of the preference of parents for French language; the lack of impression and influence given to the national teaching program at kindergarten; the persistence of traditional teaching methods due to the absence of seminaries devoted to training teachers in teaching methods; the perseverance of theoretical teaching due to a lack of didactic materials and the training of teachers in the fabrication of didactic materials using local products; and the non-existence of formal structures for the initial training of teachers, from which stems the perpetual lack of qualifications, the insufficiency of trained inspectors all of which prevents the control of the education sector.

-Elementary and Secondary schools

The elementary and secondary education sectors in the Democratic Republic Congo are characterised as follows: the continued disintegration of infrastructures and insufficient financial support given to the education sector, and a diminishment of the capacity to welcome change. These problems have consequently led to a progressive decrease in the number of students attending schools. The inefficiency of the educational system can be observed through the low retention rate, which is below 35% at the end of primary school and a decrease in the quality of education. Many children do not gain basic skills. At the primary level, 50% of students can neither read nor write. There is an obvious lack of books, didactic materials and pedagogical support. There is also an inability of schools to monitor the teaching qualifications of teachers. There is often no connection between the bachelor qualifications of those teaching and the area they are teaching in at the primary level. Along side this problem remains the non-qualification of teachers, especially in rural areas where the content is not providing job-related training within the curriculum for students. The small numbers of inspectors in the educational sector are often unmotivated and lack working tools, as well as the insufficiency of government finance to this sector.

The section of the spending budget devoted to education is continuously decreasing. It decreased from 16.85% in 1980 to 3.7% in 1989 and then it increased a little to finally reach less than 10% by 1997.

It is worth mentioning that the current budget devoted to elementary and secondary education is almost entirely consumed by the payment of wages (95%). Only 5% of the total amount is left for the operational costs of schools.

The economic realities for the Democratic Republic of Congo have not favoured educational investments, and this has resulted in the further disintegration of many schools as well as the shortage of construction of new schools.

III. CURRENT SITUATION OF INFRASTRUCTURES OF ICT AND EQUIPMENT

The present situation in the domain of infrastructures and connection of ICT in rural schools of the Democratic Republic of Congo is much worse than originally believed. Infrastructures are obsolete or nonexistent, with a low rate of connection. In general, aside from coverage and infrastructures at the level of high media that necessitate reinforcement, the majority of telecommunication infrastructures is held and managed by public enterprises in the Democratic Republic of Congo.

In rural areas, there is lack of favourable conditions for the development of ICT in order to encourage the commitment of the rural educational sector; there is lack of strategies for the use of ICT and lack of training program of teachers and students. There is also ignorance that the ICT domain is also a creator of new jobs and new professions.

There are many barriers to the use of new technologies in rural areas of Congo, such as: scarce infrastructure (telecommunication networks), lack of electricity, lack of telecommunication, and high cost of ICT, outdated systems, use, maintenance, repair and management.

For sure, many teachers working in the rural areas of Congo, still never have chance to touch with their fingers and see a computer. Without exaggeration, it is unbelievable for many people around developed countries that in Congo, some traditional technologies as Television never has been seen by some people living in the rural areas. So, from those problems facing the rural schools of Congo, how can we success to intruduce new technologies and the \$100 laptop?

IV PROBLEMS

Due to wars and political conflicts, the Democratic Republic of Congo is classified among the poorest countries in the world and certain indicators consider it, among the poorest of the African continent south of the Sahara, with nearly 80% of its population surviving on the limit of human dignity, with under US\$ 0.20 per person, per day (Democratic Republic of Congo, 2005).

The physical structures of rural school in Democratic Republic of Congo are made of natural, local materials and hence are not highly durable. The thatched roofing is both quick to deteriorate and also unsafe, it ignites easily with any open flame. Many schools lack doors and windows that close. Many students are forced to learn sitting on the floor because of a lack of chairs and desks. With the proposed \$100 laptops being offered by MIT such lack of protection and harsh conditions can lead to quick deterioration of the computers make the running difficult. They are constantly exposed to high levels of dust and consequently may require frequent service and repairs. Hence an obvious recommendation would be that the government of Congo do more to meet the safety standards and protection standards necessary for housing computers. However, facing the dire economic situation of Democratic Republic of Congo, it is impossible to find such financing. Governments just do not have the required money to buy and provide adequate circumstances for the viable use of these laptop computers.

Also, schools built to hold a certain number of students are now largely overpopulated. This situation is justified by a high demand for education and the preference of one school over other schools in certain places. This creates the problem of a high rate of occupancy of classrooms in public schools, especially when compared to private ones. Infrastructures have remained the same for decades despite the higher rate of attendance.

As well as this problem we can also add the lack of electricity, telephones, ventilation, computer equipment, etc. The new \$100 Laptop, proposed by MIT, appears to solve many of these issues. The cost of the laptop seems to be affordable and it can solve the issue of the lack of ICT equipment and overcome the problem of the lack of electricity, but it is not so straightforward.

It is true that these laptops can help to solve the ICT problems being faced in the rural educational sector. However, even at the seemingly affordable cost of US\$100, this is still expensive in some local economies. In a country such as Democratic Republic of Congo, where teachers receive less than \$100 for a monthly salary, it becomes improbable that the people or the Department of Education can afford this financial outlay.

The Democratic Republic of Congo is incapable of solving the issue of low salaries presently and hence if it used the required money to purchase the compulsory multiple \$100 laptops then there may be negative social consequences for the population, as money would be drawn away from other areas.

Hence it is necessary to find a way to overcome the problem of rural communities in developing nations accessing this \$100 laptop. It is suggested that rural schools and NGOs with a strong educational focus can access the laptops at even further discounted prices. If each rural school could purchase only a small number of laptops then the students and staff would have some exposure to such technology.

V. STRATEGIES

- School Equipment Plan and Community involvement

For the past several decades, the entire Congolese society has actively participated in the different reforms taking place in the education sector. Civil society, parent committees, provincial representatives as well as church representatives have been asked to help.

At present, students' parents have taken responsibility for nearly 80% of the educational domain. The contribution of parents and other partners in the education sector plays a prime role, as such departmental decision No EPS/BCE/001/0202/78 dated 26/09/1978 and No DEPS/CEE/001/0153/83 dated 18/08/1988 show, thus respectively instituting parent committees and administrative councils in schools.

In line with this topic we propose that the heads of schools must establish education plans for the needs and purchase of equipment for such establishments. This task should be in association with rural communities and pedagogical teams, which would allow an actual evaluation of these locations and permit the start of a multi-dimensional equipment program within Congolese rural schools.

However, it is important to note that the social realities in rural areas of the Democratic Republic of Congo create obstacles to the financing of such projects. Rural schools in Congo lack every imaginable tool, from the most basic equipment of chairs and desks.

In such circumstances, special support would be indispensable and the establishment of an active and sincere partnership between various businesses, international organisations, MIT Media lab, international schools, the National Education Bureau and rural schools might help to overcome some of the difficulties. Support in areas such as in the use of new technologies, the lack of electricity and of computerized material, the problem of teacher training, the construction of appropriate classrooms, etc. It is within this train of thought that in 1994 one author said that no one person can escape..., the construction of the Community demands a lot from us all. It demands, for example, that the heads of schools, teachers and students take care of one another, learn together and share together.

- Training of teachers

The persistence of traditional education in the Democratic Republic of Congo due to the absence of professional training leads us to the conclusion that it is necessary to train Congolese teachers about new technologies, so that the infrastructures to be put into place and the contents to be produced can be used.

Use of new technologies does not only necessitate theoretical knowledge, but also practical skills. On this point we will have to fine tune a stance on three levels: training actions, assistance actions and daily motivational actions.

This evidence necessitated analysis in order to better comprehend the failures of school computerization plans in certain parts of the world in the 1980s, despite massive training.

In Democratic Republic of Congo, schools are scattered all around the country, even in regions inaccessible by road, rail or water. For a better campaign and training of teachers concerning new technologies, we believe it is essential to establish pools of training, in such a way that a core of teachers are trained in larger centres and then they return to their respective regions and they themselves become the trainers.

This model is supported by Kleimann G.M's idea (2004, p.14) that the key that determines our success is not based on the number of computers or of cables installed, but rather on how we define the educational objectives and how we prepare and support teachers...

-Several strategies

The following offers several strategies allowing the successful introduction and use of new technologies in general and \$100 laptop in the Democratic Republic of Congo's rural schools:

- make the training of teachers and supporting staff a priority (the development of continued training of teachers),
- equip schools (equipment and connections between schools),
- ensure a coherent and balanced development (educational plans are issued by the heads of schools),
- plans to ensure that schools have access to new technologies in general and \$100 laptop,
- develop an active and sincere partnership with local, national and international organisations, MIT, and industrial businesses (a plan to encourage the investment by local communities, agreements with enterprises to facilitate the provision of equipment to establishments),
- support the multimedia-based educational industry and encourage individual production.

VI CONCLUSION

Such article is in the process of turning a new page in the history of new technologies in the Democratic Republic of Congo's rural schools. There certainly remain many obstacles but the participation of all and the sincere collaboration between the education sector, society and the industrial sector seems to be the way to surmount this social and educational problem in this country.

A strong campaign and training of teachers is undoubtedly one of the means to solve technophobia and the problems encountered in the usage of technology. In addition, the Congolese State has the obligation of adopting a law that would keep incorporate the new technologies into schools, consequently including these technologies into the national program and the national budget.

With respect to the \$100 laptop, we hope also that Congo can cooperate with such international organisations as UNESCO, MIT media Lab, and the World Bank in the way to solve problems of buying those very high tech tools, to develop the new area of new technologies in rural schools. However, Congo should take on the responsibility to organise the construction of school buildings and equip them with desk, stools, doors, windows, etc.

In our opinion, once these new technologies in general, and the \$100 laptop in particular, are effectively introduced and used, a great number of problems plaguing Congolese rural education will be resolved.

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CRITICAL THINKING DISPOSITIONS OF THE TURKISH TEACHER CANDIDATES

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ABSTRACT

Critical thinking can be explained as an effective, organized and functional cognitive process to understand our own thoughts and other people's opinions and to improve our dispositions to express ourselves. Critical thinking is a process and also dispositions about deciding what to do or believe logically. In addition it provides the possibility of using of their knowledge and talent. The aim of this study is to determine critical thinking dispositions of Turkish teacher candidates who are in the faculty of Education. When the findings regarding students' critical thinking dispositions are considered, critical thinking dimensions of Open-mindedness and Analyticity are the highest two. Low critical thinking dimensions are Inquisitiveness and Systematicity.

Keywords: critical thinking; thinking disposition; teacher candidates

TÜRK ÖĞRETMEN ADAYLARININ ELEŞTİREL DÜŞÜNME EĞİLİMLERİ

ÖZET

Eleştirel düşünme, kendi düşüncelerimizi ve başkalarının fikirlerini anlayabilmek ve düşünceleri açıklayabilmek becerimizi geliştirmek için etkin, örgütlü ve işlevsel bir bilişsel süreç olarak tanımlanabilir. Eleştirel düşünme bir süreçtir ve neyi yapma ya da neye inanmaya mantıklı bir biçimde karar verme ile ilgili becerilerdir. Ayrıca, zekayı, bilgiyi ve yetenekleri aktif bir biçimde kullanma imkanı sağlamaktadır. Bu çalışmada; Eğitim Fakültesi programlarında öğrenim gören öğretmen adaylarının eleştirel düşünme eğilimine sahip olma düzeylerinin belirlenmesi amaçlanmıştır. Açık fikirlilik ve Analitiklik eleştirel düşünme boyutları yüksek orandadır. Düşük oranda yer alan düşünme boyutları, Meraklılık ve Sistematiçliklerdir.

Anahtar Sözcükler: eleştirel düşünme, düşünme eğilimi, öğretmen adayı

I. INTRODUCTION

The thinking process may be defined as transferring the objects and events of the outer world into symbols. According to this, the brain fulfills a lot of functions such as inferring meaning from symbols, establishing hypothesis, calculating and producing the upcoming symbols. Later, it transfers these symbols into objects and events of the outer world. Thus, it can successfully manage the existing "real" situation. Thinking is the term for the organized cognitive process, which is target oriented and actively done to understand the current situation. Nickerson (1987), states that thinking covers problem solving, decision-making, critical thinking, logical judgment and creative thinking. He lists the characteristics of thinking as follows: the masterly and objective use of information; stating the organized thoughts in a brief, to the point and objective manner; the disposition to differentiate logically valid and invalid results; the disposition to understand the belief degrees of thought; the disposition to see vague and unclear similarities and difference; the disposition to understand the difference of being right and winning a discussion; accepting that problems have different ways that lead to the solution, each of which has an internally valid justification; understanding the difference between hypothesis, assumptions and results; being sensitive towards the difference between the accuracy and strength of a belief; the ability to show distinctively different aspects without exaggerating, categorizing or changing. (Ellis and Hunt, 1993).

Thinking is the process of how information is presented cognitively. This presentation can be a word, a visual design, a sound or any other idea. If the aim is to guide towards a target, to answer a question or to solve a problem, the thinking activity is the transfer of a new and different way of information organization. The nature of thinking is contested and they acknowledge that the notion of "far" transfer, for instance, from one discipline domain to another, is problematic. Thinking is a disposition, can be taught directly, and it should be taught. A person's thinking dispositions and their efficiency can certainly be improved by using good thinking tools. The future of nations depends on their educating individuals who are creative, have a strong sense of judgment and can think. With regards to this, the aim of education should not only cover the transfer of knowledge but also the organization of high-disposition thinking strategies and their improvement. The common point in all of these definitions is that thinking is an aim-focused cognitive process that makes an individual understand events, solve problems and make decisions by using acquired information.

This tendency highlights the concept of “critical thinking”, which is one of the important thinking types. Thinking is the way to perceive world. It is to think about thinking in order to be able to think critically, explain and develop thinking. If the individual can understand the cognitive processing system behind aim-focused working, decision-making and analyzing thoughts, then that individual will be able to think more effectively under those conditions.

Critical Thinking

Since the 1980s scholars claim that critical thinking contributes to the development of rational deliberation relevant to a democratic society (Lipman, 1991; [Weinstein, 1991](#)). From a philosophical point of view, critical thinking is primarily approached as the norm of good thinking, the rational aspect of human thought, and as the intellectual virtues needed to approach the world in a reasonable, fair-minded way ([Gibson, 1995](#)). Psychologists conceptualize critical thinking first and foremost as higher-order thinking dispositions and focus attention on the appropriate learning and instruction processes ([Halpern, 1998](#); [Kuhn, 1999](#)). Lastly, the concept of critical thinking functions in ‘critical pedagogy’. Critical thinking refers here to the capacity to recognize and overcome social injustice ([McLaren, 1994](#)).

One of the most famous contributors to the development of the critical thinking tradition is Robert Ennis; his definition, which has gained wide currency in the field, is: critical thinking as ‘reasonable reflective thinking that is focused on deciding what to believe or do’. Critical thinking includes such acts as ‘formulating hypotheses, alternative ways of viewing a problem, questions, possible solutions, and plans for investigating something’. In his definition, Ennis distinguishes between dispositions (analyzing arguments, judging credibility of sources, identifying the focus of the issue, and answering and asking clarifying and/or challenging questions) and attitudes, the so-called dispositions (be prepared to determine and maintain focus on the conclusion or question, willing to take the whole situation into account, prepared to seek and offer reasons, amenable to being well informed, willing to look for alternatives, and withholding judgement when evidence and reasons are insufficient) ([Ennis, 1987](#); [Ennis, 1991](#); [Kennedy, Fisher and Ennis, 1991](#)). The dispositions are an essential part of critical thinking: without being open-minded and considerate of other people and perspectives, critical thinking does not exceed ‘egocentric and sociocentric thinking’ (Paul, 1992).

Although most authors agree that critical thinking involves both dispositions and dispositions, in empirical, often psychological, research attention is primarily paid to the thinking dispositions. For example, [Pascarella and Terenzini \(1991\)](#), note that critical thinking has been defined and measured in a number of ways ‘but typically involves the individual’s ability to do some or all of the following: identify central issues and assumptions in an argument, recognize important relationships, make correct inferences from data, deduce conclusions from information or data provided, interpret whether conclusions are warranted on the basis of the data given, and evaluate evidence or authority’ ([Furedy and Furedy, 1985](#)).

The most cited definition is provided by the American Philosophical Association. Critical thinking “is the purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation and inference as well as explanation of the evidential conceptual, methodological, criteriological or contextual considerations upon which that judgement was based. Critical thinking is essential as a tool of inquiry. Critical thinking is a pervasive and self-rectifying human phenomenon” (American Philosophical Association, 1990). The “ideal critical thinker is habitually inquisitive, well-informed, honest in facing personal biases, prudent in making judgements, willing to consider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in selection of criteria, focused in inquiry and persistent in seeking results which are precise as the subject and circumstances of inquiry permit” ([Facione, 1990](#)). [Simpson and Courtney \(2002\)](#), in their review of the literature on critical thinking identified the characteristics that a critical thinker may possess, these include: Open mindedness, having the ability to appreciate alternative perspectives and different opinions; being inquisitive, having a desire to investigate new things to gain knowledge and understanding; truth seeking, sufficiently inquiring to gain new insights; analytical in one’s approach to critiquing evidence and the inferences that can be drawn from the evidence; uses an organised and meticulous approach to problem solving; self-confident with self awareness of own individual ability to utilize and critique available scientific evidence to inform decisions ([Simpson and Courtney, 2002](#)). [Halpern \(1998\)](#), comes to the following taxonomy of critical-thinking dispositions: verbal-reasoning dispositions; argument-analysis dispositions; thinking dispositions such as hypothesis testing; thinking in terms of likelihood and uncertainty; decision-making and problem-solving dispositions.

A problem that is connected with the characterization of critical thinking as a higher-order thinking disposition is the unclear distinction between critical thinking on the one hand, and other kinds of higher-order thinking on the other. This holds true, in particular, for problem-solving and creative thinking. [Hartman and Sternberg \(1993\)](#) for

example, draw the line as follows: critical thinking is an application of the cognitive system people use to select between environments, whereas creative thinking is used to shape the environment. Others reserve the term ‘critical’ for a specific quality of higher-order cognitive dispositions or strategies as we solve a problem, we can do it more or less critically. Several authors emphasize the reflective, self-evaluative nature of critical thinking, and point out that the metacognitive dispositions needed for this should be addressed in instruction ([Halpern, 1998](#)). [Paul \(1992\)](#), even calls critical thinking spurious when students are not being taught standards and criteria for assessing their own thinking. For [Kuhn \(1999\)](#), both metacognitive dispositions, metacognitive knowledge and epistemological beliefs are crucial for critical thinking. The latter is considered to be the most important part because it influences the other components.

Scriven and Paul (1985), defined critical thinking as critical thinking is the intellectually disciplined process of actively and dispositionfully conceptualizing, applying, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning or communication, as a guide to belief and action (Paul and Elder, 2001). It also defined as “self-directed, self-disciplined, self-monitored and self-corrective thinking” or “the process of analysing, evaluating and synthesising information in order to increase our understanding and knowledge of reality”. Dewey (1909), called it “reflective thinking” and defined it as: active, persistent and careful consideration of a belief or supposed form of knowledge in the light of the grounds which support it and further conclusions to which it tends (Fisher, 2001).

Glaser (1941), defined critical thinking as: an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one’s experience; knowledge of the methods of logical enquiry and reasoning ; and some disposition in applying those methods. Critical thinking calls for a persistent effort to examine any belief or supposed form of knowledge in the light of the evidence that supports it and the further conclusions to which it tends. Almost everyone who has worked in the critical thinking tradition has produced a list of thinking dispositions which they see as basic to critical thinking. Glaser (1941), listed the abilities: to recognise problems; to find workable means for meeting those problems; to gather and marshal pertinent information; to recognise unstated assumptions and values; to comprehend and use language with accuracy, clarity and discrimination; to interpret data; to appraise evidence and evaluate statements; to recognise the existence of logical relationships between propositions; to draw warranted conclusions and generalisations; to put to test the generalisations; to put to test the generalisations and conclusions at which one arrives; to reconstruct one’s patterns of beliefs on the basis of wider experience; and to render accurate judgements about specific things and qualities in everyday life (Fisher, 2001).

Thinking process are associated with making sense of large, complex and often contradictory knowledge sources. While critical thinking in all disciplines considers values and dispositions such as a commitment to reason and open discourse, thinking does not occur in a vacuum; it is thinking about something. It has been argued that critical thinking is domain specific and the content of a various subjects and/or problems determines the appropriate process of reasoning. Therefore thinking is best taught as an integral aspect of a course of studies and acquiring a deep understanding of specific content. That is, teaching of thinking must occur in concert with the teaching of content.

What can critical thinking be? Critical thinking is a well-developed, powerful way of thinking. In objective evaluation, everything is taken into consideration. We need to show valid reasons when we claim something to be real or compatible to reality. If the reason is in accordance with the view in question or more powerful than the view in question, than it is correct. Critical thinking involves discovering truth and getting rid of all views contradicting truth, personal beliefs and prejudices, thus it involves progress. This is a constant process of questioning and examining. Yet, this situation leads to new ways of information and understanding. Almost everyone agrees that one of the main goals of education, at whatever disposition, is to help develop general thinking dispositions particularly critical thinking dispositions. Almost everyone also agrees that students do not acquire these dispositions as much as they could and should. The difficult part is knowing what to do about it. Apparently, we need to generally improve our teaching and our education systems. But in what ways? What enhancements would best promote the development of critical thinking dispositions? One sensible strategy is to look to science for some guidance. The relevant science in this case is cognitive science, the interdisciplinary science of thinking: what it is, how it works, and how it develops.

Critical thinking starts as soon as individuals establish a connection between their individual experience and social conditions. There is a direct relationship between individuals’ ability to establish this connection and the education they have on this issue. The most important place to offer this education are schools and teachers trained in critical thinking. A qualified teacher is the one “who has the necessary information and dispositions required by his study area, is equipped with knowledge regarding the teaching profession, one who thinks, asks,

criticizes, is open to development and innovations.” Consequently, importance should be given to the training of qualified individuals needed in today’s information societies, the consideration of these in teacher training and the training of teacher candidates in accordance with these qualifications.

The dimension characteristics of the critical thinking disposition are explained as follows:

Analyticity: Analyticity expresses the tendency to be cautious towards situations that might lead to potential problems and the ability to use logic and objective evidence even under difficult problems. High scores indicate that this tendency is strong.

Open-mindedness: Open-mindedness expresses an individuals’ tolerance to different approaches and the sensitivity towards own faults. The main mentality behind open-mindedness is that the individual does not only consider his own thoughts but also the thoughts and views of others while making decisions. High scores indicate that the individual is good in terms of this tendency.

Inquisitiveness: Inquisitiveness or intellectual inquisitiveness expresses the individuals’ tendency to acquire and learn new things without any expectations regarding benefits. High scores mean that this tendency is also high in the individual.

Self-confidence: Self-confidence, as its name suggests, expresses the person’s confidence in himself regarding his own process of thinking. High scores on this tendency reflect that the individual has high self-confidence.

Truth-seeking: This dimension measures the individual’s ability to evaluate different alternatives and thoughts. A high score in this dimension shows that the individual has the skills of researching, asking questions, and being objective despite data opposing his ideas.

Systematicity: Systematicity is the tendency to make systematic, organized, planned and cautious research. It is the tendency to use strategic decision-making skills based on information and a specific procedure. (Kökdemir, 2003).

Kökdemir (2003), examined the problem solving and decision making strategies of Turkish university students under uncertainty in his study. Examining the quality and quantity of the relationship between critical thinking and decision making is another purpose of the present thesis. Finally, in this study, the effects of critical thinking training on the students’ critical thinking dispositions are studied. Results showed that not for all but probability related problems, subjects those who were high in critical thinking disposition prefer more rational solutions.

Kaya (1997), aimed to find out the factors that affects the critical thinking power of the university students in his research called “Critical thinking power of university students”. The research was conducted on the students who are attending the institutes. According to the research, there was a statistically significant difference between the branches and the socio economic backgrounds of the students.

Elam (2001), aimed to find out the critical thinking power of the students and their tendencies towards critical thinking amongst the students who are in the first and third grades. The research was conducted amongst the students who are attending a vocational high school. According to the research, there was a statistically significant difference between the critical thinking tendencies and the grades of the students.

In Hayran’s research (2000), named “The Point of Views of the Primary School Teachers about Thinking Skills and Processes”, it was aimed to find out whether teachers possess the critical thinking skills and processes according to different variables, by asking their opinions about them. In the research, it was found that teachers possess the problem solving skills and they use them in their daily lives. The gender variable is a meaningful factor.

Colucciello (1999), aimed to find out the tendencies of the nursing students towards the critical thinking and their thinking styles and test if there is a connection between these two features in the research called “The Relations Between the Critical Thinking Tendencies and Learning Styles”. According to the research, it was found that, students’ levels are low in self confidence, analyticity, systematicity and inquisitiveness dimensions. In Facione, Giancarlo, Facione ve Gainen’s (1995) research called “The Tendency Towards Critical Thinking”, it was aimed to find out students’ tendencies of critical thinking. The research was conducted on the students in two different universities. “CCTDI” was used as an inventory. In the research, it was concluded that, first grade students were found strong in open mindedness and inquisitiveness, and they were found insufficient in systematicity and truth seeking.

Kürüm (2002), aimed to determine the levels of critical thinking power of teacher candidates and the thinking skills that forms this power, and also the factors that affects critical thinking. According to the findings of this research, critical thinking power levels of the teacher candidates and the thinking skills that form this power are in the middle level. In addition, age, the high school they graduated, university exam entrance point type, the

programmes they are attending, income level and social activities are influential on candidates' thinking power and their thinking skills as different variables.

In a research that was conducted by Çıkrıkçı (1996) on university students, it was aimed to compare the female and male students' points which they got from Watson-Glaser Critical Thinking Appraisal Scale who are attending their last years in Science and Social Sciences departments. According to the findings of this research, there was not a significant difference between the students' grades on the basis of their gender and the programmes they are attending.

The aim of this study is to determine the disposition of critical thinking dispositions of the teacher candidates who are in the faculty of Education at Eskişehir Osmangazi University. For this purpose, the study aims to answer the following research questions: 1.How is the frequency distribution of teacher candidates' critical thinking dispositions? 2.Do the frequency distribution of teacher candidates' critical thinking dispositions show differences according to critical thinking dimensions? 3.Do the critical thinking dispositions of teacher candidates show differences according to the variables below? a.their gender, b.their branch, c.their grade disposition, d.type of secondary school branch.

II. METHOD

This research was designed by using descriptive research and the casual-comparative research model. The data about the critical thinking tendency disposition of the subject group which consists of the teacher candidates enrolled in 4 different programmes of various education dispositions and areas at faculty of education is based on the results of the data collection instrument (The California Critical Thinking Disposition Inventory).The study was done with 400 students enrolled at the faculty of education's Primary Education and Computer and Instructional Technologies in education programmes. Information on the subject group is demonstrated in Table 1.

The data collection instrument consists of two parts. The first part is about the subjects' personal information; the second part is the Critical Thinking Disposition Inventory, which elicits critical thinking tendencies. "Critical Thinking Disposition Inventory" was adapted to Turkish by Kökdemir (2003). The original version is "The California Critical Thinking Disposition Inventory (CCTDI)". This inventory was developed in the Delphi Project run by The American Philosophy Association in 1990. The version, which was adapted into Turkish, consists of 51 items, covering 6 dimensions. For the statements in the "Critical Thinking Disposition Inventory" a Likert-type of equal-range and six sections was used. The statements in the inventory have been labelled as; "Completely Agree (6)", "Agree (5)", "Partly Agree (4)", "Partly Disagree (3)", "Disagree (2)", "Completely Disagree (1)". In order to test the reliability of the "Critical Thinking Disposition Inventory", both as a whole and each of the six dimensions, the Cronbach Alpha Coefficients were calculated. As a whole the "Critical Thinking Disposition Inventory" has a high degree of reliability (" α .89").

Table1. Information on The Subject Group

Variables	N	%
Gender		
Female	254	63.5
Male	146	36.5
Total	400	100.0
Programme		
Primary School Class Education	106	26.5
Primary School Mathematics Education	164	41.0
Primary School Science Education	104	26.0
Computer and Instructional Technologies in Education	26	6.5
Total	400	100.0
Class		
1	70	17.5
2	94	23.5
3	112	28.0
4	124	31.0
Total	400	100.0
Graduated Programme Type		
General High School	119	29.8
Science High School	11	2.8
Super High School	91	22.8
Teacher Training High School	54	13.5
Vocational High School	18	4.5
Anatolian High School	96	24.0
Private High School	06	1.5
Others	05	1.3
Total	400	100.0

Table 2. The Cronbach Alpha Coefficients of The Critical Thinking Disposition Inventory

Critical Thinking Disposition Inventory And the items	Alpha
Analyticity (10,11,12,13,14,15,16,17,18,19)	.649
Open-mindedness (20,21,22,23,24,25,26,27,28,29,30,31)	.853
Inquisitiveness (1,2,3,4,5,6,7,8,9)	.780
Self-confidence (32,33,34,35,36,37,38)	.982
Truth-seeking (39,40,41,42,43,44,45)	.835
Systematicity (46,47,48,49,50,51)	.448
Total (51)	.891

Table 2, shows that when Alpha coefficient evaluation value criteria are considered, “Critical Thinking Disposition Inventory” has a high degree of reliability as a whole. In group comparisons, reliability values between .60 and .80 are acceptable. When decisions about individuals are concerned, the reliability value of the instrument needs to be above .80 (Özçelik, 1989).

In the analysis of the data, besides descriptive statistical techniques such as arithmetical average and standard deviation, parametric statistical techniques such as “t-test for Independent Two-group, equal variance” for the comparisons of the two groups, and ‘One-way Variance Analysis (ANOVA) for more than two group comparisons were used. In cases where “F-test” results at the end of variance analysis were statistically meaningful, “Tukey HSD” test was done to determine the source for difference. In all statistical analysis, the significance disposition was taken as .05.

III. FINDINGS

The Distribution of Teacher Candidates’ Critical Thinking Dispositions

The first question to be answered requires determining the critical thinking dispositions of the students. Firstly, the styles’ arithmetical averages and standard deviations were calculated in order to get an idea of the sample group’s critical thinking dispositions. The results are shown in Table 3.

Table 3. Arithmetical Averages and Standard Deviations in Terms of Critical Thinking Dispositions

Critical Thinking Dimensions	N	Average	Standard Deviation	Variance
Analyticity	400	4,59	,529	0,11
Open-mindedness	400	5,09	,552	0,08
Inquisitiveness	400	2,75	,615	0,77
Self-confidence	400	4,17	,703	0,07
Truth-seeking	400	3,33	,806	0,18
Systematicity	400	3,28	,775	0,74

When these findings are analyzed, it can be seen that individuals exhibit differences in terms of their critical thinking dimensions. When the average values in Table 3 are considered, it is easy to see that the individuals have higher scores on the Open-mindedness and Analyticity critical thinking dimensions. Thus, it can be said that these individuals assert that they think they exhibit more behaviors associated with these critical thinking dimensions. The thinking dimensions with the lowest averages are the Inquisitiveness and Systematicity critical thinking dimensions. This finding is consistent with the finding of Facione, Giancarlo, Facione ve Gainen’s (1995) research called “The Tendency Towards Critical Thinking”, that concluded students were found strong in open mindedness and inquisitiveness.

The Difference of Teacher Candidates' Critical Thinking Dispositions Related to Critical Thinking Dimensions

The second research question was about the critical thinking tendency differences of teacher candidates, and whether there are differences in terms of critical thinking dimensions.

In order to understand whether there is a significant difference among students’ scores on critical thinking dimensions, a variance analysis was done. The results of the variance analysis on critical thinking dimensions are demonstrated in Table 4.

Table 4. Variance Analysis on Critical Thinking Dispositions Averages

Variance Source	Degree of Freedom	Sum of Squares	Mean Square	F	p
Between Groups	5	1702,457	340,491	753,664	,000*
Within Groups	2394	1081,564	,452		
Total	2399	2784,021			

(*)The mean difference is significant at the .05 disposition.

As can be seen in Table 4, the result of the variance analysis on students’ critical thinking dispositions was found to be $F=753.664$ ($p<0.05$). This refers to a significant difference among the critical thinking dimensions. According to these findings, in order to determine meaningful differences in which among averages of critical thinking dimensions were taken advantage of Tukey HSD. The results are demonstrated in Table 5.

Table 5. The Results Related to Comparison Among Critical Thinking Dimensions

Critical Thinking Dimensions	Comparing Critical Thinking Dimensions	Average Different	p
Analyticity	Open-mindedness	4,73	,000*
	Inquisitiveness	1,89	,000*
	Self-confidence	,502	,000*
	Truth-seeking	1,360	,000*
	Systematicity	1,426	,000*
Open-mindedness	Inquisitiveness	2,36	,000*
	Self-confidence	,976	,000*
	Truth-seeking	1,83	,000*
	Systematicity	1,90	,000*
Inquisitiveness	Self-confidence	1,39	,000*
	Truth-seeking	,535	,000*
	Systematicity	,468	,000*
Self-confidence	Truth-seeking	,857	,000*
	Systematicity	,924	,000*
Truth-seeking	Systematicity	,066	,726*

(*)The mean difference is significant at the .05 disposition.

The dispersion of the differences amongst the dimensions of critical thinking, the critical thinking tendency possession-level of the teacher candidates shows significant differences. This finding is possible because, every dimension is restricted with the features of its own.

The Difference of Teacher Candidates' Critical Thinking Dispositions According to Different Variables

In this study, gender was taken as a variable. For each critical thinking dimension, there are individual differences in terms of exhibiting the related behaviours. Each individual feels the need for the different critical thinking dimensions depending on his/her own conditions. Table 6 shows the teacher candidates' differences of critical thinking types based on gender. Table 6. demonstrates the critical thinking disposition differences of the sample group according to their gender.

Table 6. Students' Critical Thinking Dispositions According to Their Gender

Critical Thinking Dimensions	Gender	N	Average	Standard Deviation	t	p
Analyticity	Female	254	4,61	,518	1,24	,214
	Male	146	4,54	,546		
Open-mindedness	Female	254	5,11	,579	2,19	,029*
	Male	146	4,98	,492		
Inquisitiveness	Female	254	2,63	,535	2,52	,012*
	Male	146	2,79	,723		
Self-confidence	Female	254	4,10	,693	,675	,500
	Male	146	4,05	,723		
Truth-seeking	Female	254	3,17	,747	2,00	,046*
	Male	146	3,33	,893		
Systematicity	Female	254	3,15	,847	,260	,795
	Male	146	3,17	,633		

(*)The mean difference is significant at the .05 disposition.

When averages regarding individuals' critical thinking levels according to their gender are taken into account, gender be considered as a factor. When the results in Table 6 are examined, it can be seen that gender plays an important role (at the significance level of 0.05) in the critical thinking dimensions of Open-mindedness, Inquisitiveness and Truth-seeking.

In the researches that were conducted by Kaya (1997) and Çıkrıkçı (1993) on university students by using Watson-Glaser Critical Thinking Appraisal Scale to determine the critical thinking power of the students, it was aimed to find out the factors that affects the critical thinking power. According to the findings of these researches, there was not a significant difference between the points of the students according to their gender.

In another research that was conducted by Simon and Ward (1974) on a group of university students by using Watson-Glaser Critical Thinking Appraisal Scale, when they compared students' points with some of their personality features, it was found that there is a significant difference in the benefit of female students according to inference and evaluation of opposite opinions sub tests.

In this study, branch was taken as a second variable. Table 7 demonstrates the results regarding the distribution of critical thinking dimensions based on the branch factor.

Table 7. Students' Critical Thinking Dispositions According to Their Branch

Critical Thinking Dimensions	Branch	N	Average	Standard Deviation	Variance
Analyticity	Primary	106	4,67	,491	0,78
	Mathematics	164	4,49	,474	0,28
	Science	104	4,69	,576	0,28
	Technology	26	4,49	,685	2,00

Open-mindedness	Primary	106	5,10	,724	0,23
	Mathematics	164	5,05	,467	0,46
	Science	104	5,10	,449	0,49
	Technology	26	4,80	,570	0,67
Inquisitiveness	Primary	106	2,63	,514	0,81
	Mathematics	164	2,64	,555	0,82
	Science	104	2,67	,574	2,08
	Technology	26	3,41	,986	1,88
Self-confidence	Primary	106	4,09	,717	1,57
	Mathematics	164	3,99	,628	0,83
	Science	104	4,16	,795	0,29
	Technology	26	4,36	,631	0,00
Truth-seeking	Primary	106	3,22	,778	2,48
	Mathematics	164	3,21	,813	0,81
	Science	104	3,11	,763	1,62
	Technology	26	3,84	,822	2,57
Systematicity	Primary	106	3,10	,590	2,67
	Mathematics	164	3,12	,591	0,97
	Science	104	3,08	,513	4,57
	Technology	26	3,95	2,01	1,37

Table 8. Variance Analysis on Critical Thinking Dispositions Averages According to Their Branches

Critical Thinking Dimensions	Variance Source	Sum of Squares	df	Mean Square	F	p
Analyticity	Between Groups	3,70	3	1,23	4,53	,004*
	Within Groups	108,00	396	,273		
	Total	111,71	399			
Open-mindedness	Between Groups	2,06	3	,688	2,27	,079
	Within Groups	119,66	396	,302		
	Total	121,72	399			
Inquisitiveness	Between Groups	14,52	3	4,84	14,05	,000*
	Within Groups	136,41	396	,344		
	Total	150,93	399			
Self-confidence	Between Groups	4,07	3	1,35	2,78	,041*
	Within Groups	193,64	396	,489		
	Total	197,71	399			
Truth-seeking	Between Groups	11,37	3	3,79	6,04	,000*
	Within Groups	248,32	396	,627		
	Total	259,69	399			
Systematicity	Between Groups	17,46	3	,582	10,37	,000*
	Within Groups	222,30	396	,561		
	Total	239,77	399			

(*)The mean difference is significant at the .05 disposition.

Table 8. demonstrates variance analysis on critical thinking dispositions averages according to their branch. According to their branches, when we examine Table 8, we can see that the sample group is affected by branch at the 0.05 values in terms of the Analyticity, Inquisitiveness, Self-confidence, Truth-seeking and Systematicity critical thinking dimensions.

Inquisitiveness expresses the individuals' tendency to acquire and learn new things. Here, it is normal that there are differences amongst the groups because; technology department is highly related to researches and project facilities. As a result, it can be said that, students gained these thinking habits and they display them.

Analyticity is about the tendency of using logic and objective evidence. Objectively, it was expected that students who are in Science departments have higher scores.

Open-mindedness expresses an individual's tolerance to different approaches and the sensitivity towards own faults. The main mentality in open mindedness is that, the individual does not only consider his own thoughts but

also the thoughts and views of others while making decisions. It was expected that primary school teacher candidates have this feature more than the others. This situation could be the source of difference.

Self-confidence, expresses individual's confidence in his/her own thinking processes. It is thought that, the candidates who are in the departments which include more research and project facility, show more self confidence.

Truth seeking shows that individual's tendency to look for the truth, question asking skills and objectivity despite the data opposing his/her ideas are relatively high. This thinking dimension is again seen more amongst the candidates who are in the departments which include more research and project facility.

Systematicity is the tendency of making organized, planned and careful researches. It can be said that the branches which requires the need for logical thinking, research and project facilities caused the difference amongst the groups.

A third variable was the class in which the teacher-candidates were enrolled in. In Table 9, we can see the distribution of critical thinking dimensions regarding class.

Table 9. Students' Critical Thinking Dispositions According to Their Classes

Critical Thinking Dimensions	Class	N	Average	Standard Deviation	Variance
Analyticity	1	70	4,00	0,87	0,75
	2	94	5,11	0,93	0,86
	3	112	4,44	1,33	1,78
	4	124	4,67	1,00	1,00
Open-mindedness	1	70	5,80	0,63	0,40
	2	94	5,30	1,06	1,12
	3	112	5,70	0,48	0,23
	4	124	4,20	1,40	1,96
Inquisitiveness	1	70	3,50	1,93	3,73
	2	94	2,33	1,56	2,42
	3	112	3,92	1,73	2,99
	4	124	2,58	2,07	4,27
Self-confidence	1	70	4,29	1,60	2,57
	2	94	5,71	0,49	0,24
	3	112	5,29	0,76	0,57
	4	124	2,86	0,69	0,48
Truth-seeking	1	70	3,43	1,13	1,29
	2	94	2,29	1,25	1,57
	3	112	3,43	2,37	5,62
	4	124	3,29	1,89	3,57
Systematicity	1	70	3,00	2,10	4,40
	2	94	2,83	1,94	3,77
	3	112	2,83	2,04	4,17
	4	124	3,50	2,26	5,10

Table 9 demonstrates variance analysis on critical thinking dispositions averages according to their classes. According to their classes, when we examine Table 10, we can see that the sample group is affected by branch at the 0.05 values in terms of the Self-confidence and Truth-seeking critical thinking dimensions. In these two critical thinking dimensions, there is a significant difference between classes.

In Elam's research (2001), which was aimed to determine the critical thinking power and the tendencies towards critical thinking amongst the students who are in the first and third grades, it was found that there was a statistically significant difference between the critical thinking tendencies and the grades of the students.

Table 10. Variance Analysis on Critical Thinking Dispositions Averages According to Their Classes

Critical Thinking Dimensions	Variance Source	Sum of Squares	df	Mean Square	F	p
Analyticity	Between Groups	1,949	3	,650	2,34	,073
	Within Groups	109,76	396	,277		
	Total	111,71	399			
Open-mindedness	Between Groups	,415	3	,138	,451	,717
	Within Groups	121,31	396	,306		
	Total	121,72	399			
Inquisitiveness	Between Groups	2,191	3	,730	1,94	,122
	Within Groups	148,74	396	,376		
	Total	150,93	399			
Self-confidence	Between Groups	41,97	3	13,99	26,16	,000*
	Within Groups	211,79	396	,535		
	Total	253,77	399			
Truth-seeking	Between Groups	8,46	3	2,82	4,83	,003*
	Within Groups	230,87	396	,583		
	Total	239,33	399			
Systematicity	Between Groups	1,95	3	,651	1,05	,335
	Within Groups	237,82	396	,601		
	Total	239,77	399			

(*)The mean difference is significant at the .05 disposition.

The programme type from which the teacher-candidates graduated was another variable in this study. In Table 11, we can see the distribution of critical thinking dimensions regarding the programme type.

Table 11. Students' Critical Thinking Dispositions According to Their Type of Graduation Programme

Critical Thinking Dimensions	Class	N	Average	Standard Deviation	Between Component Variance
Analyticity	General H. School	119	4,70	,525	,006
	Science H. School	11	4,37	,613	
	Super H. School	91	4,59	,533	
	Teacher H. School	54	4,56	,542	
	Vocational H. School	18	4,40	,702	
	Anatolian H.School	96	4,52	,465	
	Private H. School	6	4,31	,413	
	Others	5	4,80	,298	
	Total	400	4,59	,529	
Open-mindedness	General H. School	119	5,11	,717	-,000
	Science H. School	11	4,92	,498	
	Super H. School	91	5,02	,455	
	Teacher H. School	54	5,01	,515	
	Vocational H. School	18	4,86	,545	
	Anatolian H.School	96	5,10	,436	
	Private H. School	6	5,26	,320	
	Others	5	5,16	,151	
	Total	400	5,06	,552	
Inquisitiveness	General H. School	119	2,75	,687	,016
	Science H. School	11	3,03	,483	
	Super H. School	91	2,59	,557	
	Teacher H. School	54	2,69	,525	
	Vocational H. School	18	3,18	,818	
	Anatolian H.School	96	2,60	,553	
	Private H. School	6	2,55	,408	
	Others	5	2,60	,505	
	Total	400	2,69	,615	

Self-confidence	General H. School	119	4,11	,775	
	Science H. School	11	4,22	,555	
	Super H. School	91	4,06	,728	
	Teacher H. School	54	4,00	,682	
	Vocational H. School	18	4,27	,869	
	Anatolian H.School	96	4,046	,563	
	Private H. School	6	3,85	,372	
	Others	5	4,94	,721	
	Total	400	4,08	,703	
Truth-seeking	General H. School	119	3,18	,806	
	Science H. School	11	3,92	1,01	
	Super H. School	91	3,02	,716	
	Teacher H. School	54	3,35	,818	
	Vocational H. School	18	3,99	,726	
	Anatolian H.School	96	3,21	,775	
	Private H. School	6	3,14	,518	
	Others	5	3,03	,736	
	Total	400	3,23	,806	
Systematicity	General H. School	119	3,29	1,12	
	Science H. School	11	2,87	,401	
	Super H. School	91	3,03	,524	
	Teacher H. School	54	3,18	,621	
	Vocational H. School	18	3,37	,668	
	Anatolian H.School	96	3,14	,531	
	Private H. School	6	2,91	,502	
	Others	5	3,03	,447	
	Total	400	3,16	,775	

The results related to the distribution of critical thinking dimensions and the school type the subjects graduated from is shown in Table 12. According to their type of graduation programme, when we examine Table.12, we can see that the sample group is affected by type of graduation programme at the 0.05 values in terms of the Analyticity, Inquisitiveness and Truth-seeking critical thinking dimensions. In these three critical thinking dimensions, there is a significant difference between types of graduation programme groups.

Table 12. Variance Analysis on Critical Thinking Dispositions Averages According to the Programmes They Graduated

Critical Thinking Dimensions	Variance Source	Sum of Squares	df	Mean Square	F	p
Analyticity	Between Groups	3,931	7	,562	2,043	,049*
	Within Groups	107,779	392	,275		
	Total	111,710	399			
Open-mindedness	Between Groups	1,968	7	,281	,920	,491
	Within Groups	119,759	392	,306		
	Total	121,727	399			
Inquisitiveness	Between Groups	7,804	7	1,115	3,053	,004*
	Within Groups	143,134	392	,365		
	Total	150,937	399			
Self-confidence	Between Groups	5,421	7	,774	1,579	,140
	Within Groups	192,298	392	,491		
	Total	197,719	399			
Truth-seeking	Between Groups	21,183	7	3,026	4,974	,000*
	Within Groups	238,513	392	,608		
	Total	259,696	399			
Systematicity	Between Groups	5,795	7	,828	1,387	,209
	Within Groups	233,981	392	,597		
	Total	239,776	399			

(*)The mean difference is significant at the .05 disposition.

Kürüm (2002), aimed to determine the levels of critical thinking power of teacher candidates and the thinking skills that forms this power, and also the factors that affects critical thinking. According to the findings of this

research, critical thinking power levels of the teacher candidates and the thinking skills that form this power are in the middle level. In addition, age, the high school they graduated, university exam entrance point type, the programmes they are attending, income level and social activities are influential on candidates' thinking power and their thinking skills as different variables.

IV. DISCUSSION AND CONCLUSIONS

When the findings regarding students' critical thinking disposition distributions are considered, average scores show that the critical thinking dimensions of Open-mindedness and Analyticity are the highest two. Low critical thinking dispositions are Inquisitiveness and Systematicity. According to these findings, it can be said that the subjects in the study have the tendencies of being cautious towards situations that lead to potential problems, using logic and objective evidence in problematic situations (Analyticity), and also have the tendencies of being open-minded, tolerant to different approaches and sensitive towards own faults (Open-mindedness). The fact that Inquisitiveness and Systematicity dimensions were found low in terms of exhibiting the required behaviours, it can be said that teacher-candidates are reluctant to show intellectual inquisitiveness behaviours such as acquiring and learning new things without expectations regarding benefits, and behaviours related to systematic, organized, planned and cautious researching.

Teacher-candidates' critical thinking disposition distributions are different from each other. There is a significant difference among critical thinking dimensions. When we look at the average scores regarding critical thinking dimensions, only Truth-seeking and Systematicity do not show a significant difference. In other words, there is no relationship between a person's possessing the qualities for the critical thinking dimension of truth-seeking and the qualities for the dimension of systematicity. The critical thinking dimension of truth-seeking focuses on evaluating alternatives and different thoughts. In this dimension, the possibility of an individual to seek truth, ask questions, act objectively despite data opposing his views is very high. In the dimension of systematicity, the individual is in the tendency of using strategic decision-making dispositions based on information and a given procedure. She/he focuses on organized thinking, planning, being cautious and researching. Based on these findings, it is possible to claim that having principles, thinking in an organized way, being organized and always acting objectively are complementary criteria.

In the study, another research question was about the disposition of teacher-candidates' critical thinking tendencies with respect to gender, branch, class and the school type they graduated from. When average scores related to gender variable are considered, Open-mindedness, Inquisitiveness and Truth-seeking are found to be a factor at a significance disposition of 0.05.

According to their branches, there is a significant difference between branch groups. In the Analyticity, Inquisitiveness, Self-confidence, Truth-seeking and Systematicity critical thinking dimensions, there is a significant difference between branch groups. In these five critical thinking dimensions, there is a significant difference between branch groups. It can be claimed that having a different education and qualifications unique to the study area has made students develop different behaviors within different critical thinking dimensions.

In the other critical thinking dimension, it can be seen that having an education and master's in one specific area is not a factor. One of the characteristics of critical thinking dimensions is that it is possible to talk about a profile of critical thinking dimensions for individuals, rather than extremes and absolute values. Thinking dimensions are thought of as combinations of individual preferences.

According to their classes, in the Self-confidence and Truth-seeking critical thinking dimensions, there is a significant difference between grade disposition groups. Self-confidence, as its name suggests, is the person's confidence in himself regarding his own process of logical thinking. It can be expected that the higher the class grade, the higher the disposition of self-confidence. Likewise, developing objective behaviours can be expected to increase together with class disposition. In terms of type of graduation programme, in the Analyticity, Inquisitiveness and Truth-seeking critical thinking dimensions, there is a significant difference between types of graduation programme groups. This finding leads to such an explanation. The type of high school that the students graduated from affects both their individual and social development. The education they received would shape the behaviours they exhibit.

To increase the critical thinking levels of the teacher candidates and making them gain these skills, the followings are suggested: (1) To progress the critical thinking skills of the teacher candidates, in all of the courses, there should be activities that will make the students gain these skills. In addition, all the instructors should be supported to improve themselves to be able to do this. (2) There should be socio-cultural activities

devoted to improve the teacher candidates' critical thinking skills and the candidates should be encouraged to attend them.

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FACULTY ADOPTION OF ONLINE TECHNOLOGY IN HIGHER EDUCATION

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ABSTRACT

As technology becomes ubiquitous in classrooms, faculty will be asked to utilize new technologies in their instruction. Some will accept new ways to teach with technology while others resist. This paper aims to explore the factors that influence faculty to adopt online technology and faculty's concern about the adoption. The focus is on adoption and diffusion of online technology related to faculty development efforts that may help them effectively integrate online technology in their instruction.

Keywords: adoption, online technology, faculty development, higher education

ÜNİVERSİTE ÖĞRETİM ÜYELERİNİN ÇEVİRİMİÇİ TEKNOLOJİYE UYUMU

ÖZET

Teknoloji tüm sınıflara girdikçe, öğretim üyeleri de bu yeni teknolojileri eğitimleri sırasında kullanmaları yönünde yönlendirilmektedir. Bazı öğretim üyeleri bu yeni öğretim yöntemlerini kabul ederken bazıları hala direnmektedir. Bu çalışma, öğretim üyelerinin çevrimiçi teknolojilere uyumunu etkileyen faktörleri ve öğretim üyelerinin uyum süreci hakkındaki kaygılarını ortaya çıkarmayı amaçlamaktadır. Çalışmada ayrıca çevrimiçi teknolojilerin yayılımı ve etkili bir şekilde eğitime entegrasyonu için planlanacak eğitim unsurları üzerinde durulmaktadır.

Anahtar Sözcükler: uyum, çevrimiçi teknoloji, eğitimcilerin eğitimi, yüksek öğretim

1. INTRODUCTION

Increased competition, decreased enrollments, greater numbers of non-traditional students and decreased government funding are the most obvious problems of higher education faces in the twenty-first century (Levine, 2001). Many higher education institutions view technology as a cost-effective and innovative solution to many problems (Hooper & Rieber, 1998). The faculty members are being pressured to integrate technology into their instructional activities. The pressure faced by the faculty is coming from administrators trying to keep up with new technological advances, from students who are becoming increasingly insistent that technology be integrated in their courses, and colleagues who are considered "innovators" (Rogers, 1995) of instructional technology and always willing to spread its advantages to "laggards." Faculty members adopt online technology either into face-to-face (Sun 2004), hybrid (Sands 2002), blended (Saunders 2003), or mixed delivery courses (McFadden 2004).

Despite the fact that 80% of public 4-year colleges make course management tools available to their faculties, professors actually use them in only 20% of their courses (Lynch, 2002). According to a recent study by the Higher Education Research Institute at UCLA, many faculty members are hesitant to embrace technology because it is perceived as a source of stress (Lynch, 2002). According to 1998/1999 HERI Faculty Survey, 67% of college and university faculty find keeping up with information technology to be stressful. Information technology is the 4th most frequently cited among women 74%, and 5th most frequently cited among men 64%.

Educational change begins with what teachers do and think (Fullan, 1982). Rogers (1995) defines diffusion as the "process by which an innovation is communicated through certain channels over time among the members of a social system" (p. 5). Rogers (1995) defines an innovation as "an idea, practice, or object that is perceived as new by an individual or other unit on adoption" (p. 11). Johnson (2001) suggests that adoption and implementation of an innovation may be characterized as having three relevant stages: technology, pedagogy, and presentation style. In this research, technology is the use or inclusion of online technology within course instruction. Pedagogy concerns the instructional design and strategy that an educator would use to deliver their course content. Presentation Style refers to the medium used to present the course material. As an individual contemplates adopting online technology for their course instruction, three important factors influence their decision: (1) the adoption of the technology, (2) the adoption of a new or modified pedagogy, and (3) the adoption of a new or modified presentation style.

II. LITERATURE REVIEW

Online Technology

William Massy and Robert Zemsky (1995), in an analysis of the economics of higher education, conclude that higher education cannot become more productive or hold costs down unless colleges and universities embrace technological tools for teaching and learning. The growth of computer technology has caused the development and use of online technology in teaching and learning. The classification of educational technologies by structural characteristics (Bates, 2003) is depicted in Table 1. Online technology associated with this research includes the World Wide Web, course management software, and one-way and two-way digital multimedia.

Table 1. Bates (2003, pp. 55): A Classification of Educational Technologies by Structural Characteristics.

Technologies				
	Broadcast (one-way) Applications		Communication (two-way) Applications	
Media	Synchronous	Asynchronous	Synchronous	Asynchronous
Face-to-face	Lectures	Lecture notes	Seminars	
Text		Books		Mail
Audio	Radio	Audio cassettes	Telephone tutoring Audio conferencing	
Video	Broadcast TV Cable TV Satellite TV	Video cassettes	Video conferencing	
Digital multimedia	Webcasting Audio streaming Video streaming	Web sites CD-ROMs DVDs Learning objects Multimedia clips	Chat MUDs Web conferencing	E-mail Discussion forums

Adoption/Diffusion Theories

In general, when someone is confronted with a new technology, he/she goes through an adoption decision process in which he/she gathers information, tests the technology, and then considers whether it offers a sufficient improvement to warrant the investment of time and energy that is required to add it to his/her repertoire of skills (Rogers, 1995). The faculty being urged to integrate technology in their courses faces a similar situation.

Since early in this century, various new educational technologies have been adopted and integrated into the curriculum with varying degrees of success. Their adoption and diffusion process generally followed a "top-down" process (Carman, 2003) in which administrators introduced the technology and administrative perceptions, decisions and strategies drove adoption and diffusion. This process can be beneficial by speeding up decisions that might otherwise be difficult to make, but such a process can also become a barrier to successful adoption and dissemination because of some of the intangible benefits associated with the adoption of technology. Today's educational generation, sees personal computers, the Internet and the World Wide Web as technology's new wave. The impetus for the innovation frequently grows from individual users of the technology and moves through the institutional administration to commit to adoption of the technology. This supports more of a "bottom-up" approach (Carman, 2003) whereby individuals are involved in the decision to adopt and in the actual implementation process. It would thus appear that a mixture of both top-down and bottom-up decision-making processes would best ensure the successful adoption of technology. Rogers (1995) presented four additional adoption/diffusion theories (Fig. 1).

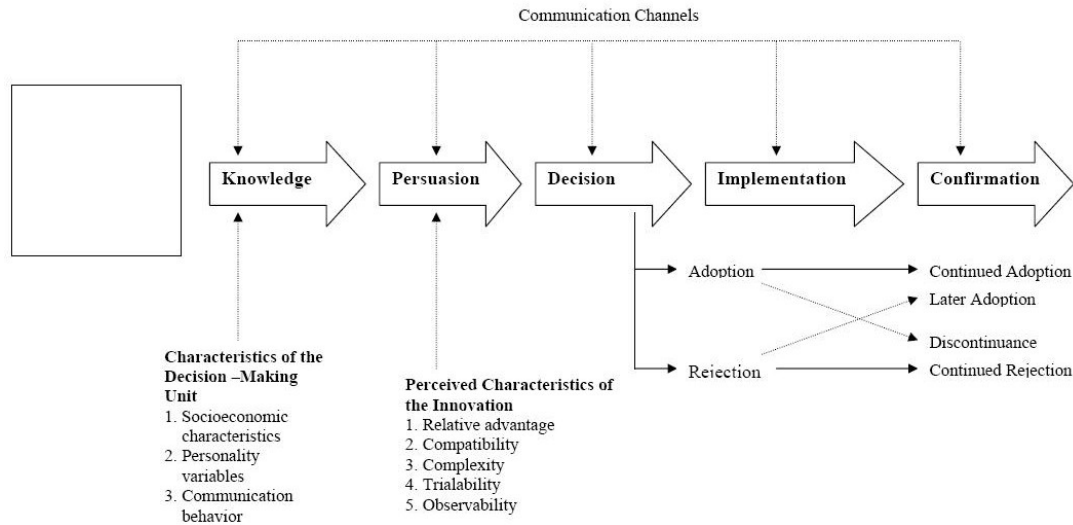


Figure 1. Rogers & Shoemaker (1973): A Model of Stages in the Innovation Decision Process

Innovation Decision Process theory. Potential adopters of a technology progress over time through five stages in the diffusion process. First, they must learn about the innovation (knowledge); second, they must be persuaded of the value of the innovation (persuasion); they then must decide to adopt it (decision); the innovation must then be implemented (implementation); and finally, the decision must be reaffirmed or rejected (confirmation). The focus is on the user or adopter.

Individual Innovativeness theory. Individuals who are risk takers or otherwise innovative will adopt an innovation earlier in the continuum of adoption/diffusion.

Rate of Adoption theory. Diffusion takes place over time with innovations going through a slow, gradual growth period, followed by dramatic and rapid growth, and then a gradual stabilization and finally a decline.

Perceived Attributes theory. There are five attributes upon which an innovation is judged: that it can be tried out (trialability), that results can be observed (observability), that it has an advantage over other innovations or the present circumstance (relative advantage), that it is not overly complex to learn or use (complexity), that it fits in or is compatible with the circumstances into which it will be adopted (compatibility).

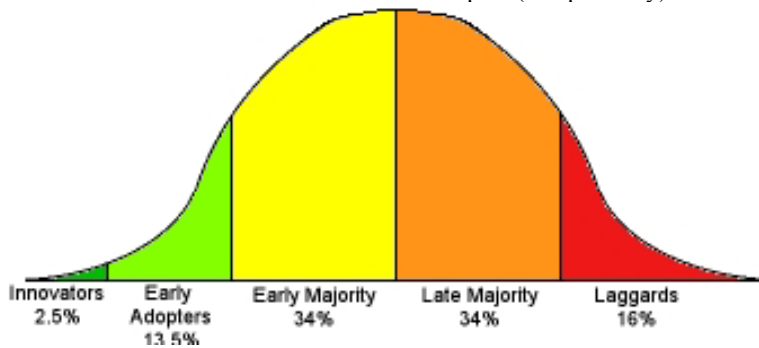


Figure 2. Roger’s five categories of technological innovation

Rogers' diffusion of technological innovation model suggests that large numbers of faculty are quite slow in adopting technological innovation in their teaching. Rogers' model identifies five categories of technological innovation adopters (Fig. 2). Applying his model to faculty, we can expect that on any given campus approximately 2.5% will be venturesome “innovators” of instructional technology. We can expect that another 13.5% will be respectable “early adopters” who wisely adopt instructional technology and become that group to whom the rest of the faculty consult with for information and advice in this arena. Of the remaining faculty, the model predicts that 34% will adopt the technology only after a period of deliberation in which they examine the early adopters' results, and 34 will adopt it, but with a great deal of skepticism and only if pressured by necessity. Ronkowski (2000) refers to these two groups as “mainstream” faculty. Assuming eventual 100% adoption of

technology, the remaining 16% are “laggards” who highly suspicious of the innovation, prefer traditional approaches, and will adopt only if they can be certain it will not fail.

Massy and Zemsky’s e-learning innovation curve follows the Roger’s curve (Fig. 3). They claim that “Adoption processes usually start slowly because of the need for experimentation. They accelerate once the dominant design emerges, and then eventually reach saturation.”

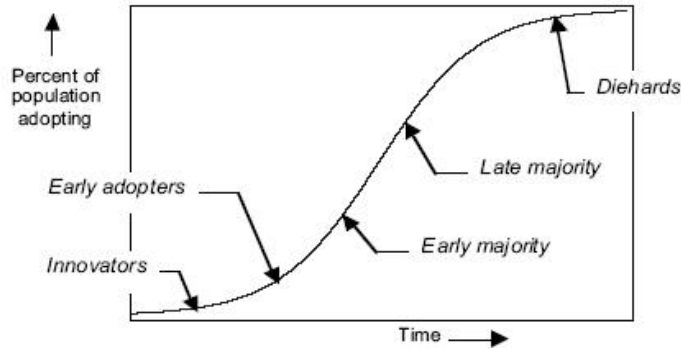


Figure 3. Massy and Zemsky (2003): The Stages of Technology adoption

Massy and Zemsky propose that the adoption of online technology occurs in different levels and sometimes those levels overlaps. It makes it more difficult to analyze the S-curve. Massy and Zemsky’s e-learning’s adoption cycles (Fig. 4) is designed specifically for online technology.

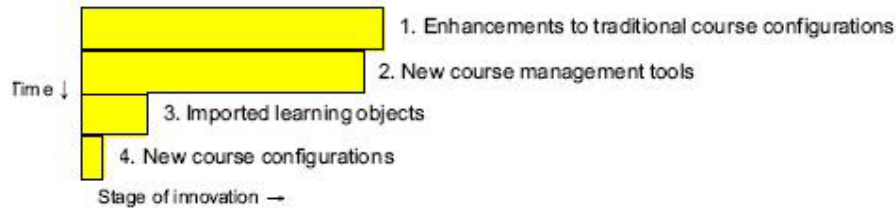


Figure 4. Massy and Zemsky (2003): E-learning’s Adoption Cycles

Ronkowski (2000) from the University of California at Santa Barbara, proposes a three-step technology adoption model: 1. *Making the Strange Familiar*: Faculty gets accustomed to new technology. This stage does not involve any change in content or instructional methods. 2. *Making the Familiar Strange*: As faculty gets more familiar with the new technology, he begins changing the teaching method with the innovative content. 3. *Synergistic Innovation*: Faculty is familiar enough to go beyond the existing and make the transform into across the content areas.

Concern Models and Faculty Development

Frances Fuller (1969) studied the developing concerns of small groups of prospective teachers and reexamined the findings of other investigators in the hope of discovering what teachers are concerned about and whether their concerns can be conceptualized in some useful way. She suggested three phases of concern: a pre-teaching phase (non-concern), an early teaching phase (concern with self), and a late teaching phase (concern with students).

Hall and Loucks' (1979) Concerns-Based Adoption Model is useful in explaining the lack of teacher investment in innovations, and describes the seven levels of concern that teachers experience as they adopt a new practice:

- Awareness - Teachers have little concern or involvement with the innovation.
- Informational- Teachers have a general interest in the innovation and would like to know more about it.
- Personal- Teachers want to learn about the personal ramifications of the innovation. They question how the innovation will affect them.
- Management- Teachers learn the processes and tasks of the innovation. They focus on information and resources.

- Consequence- Teachers focus on the innovation's impact on students.
- Collaboration- Teachers cooperate with other teachers in implementing the innovation.
- Refocusing- Teachers consider the benefits of the innovation and think of additional alternatives that might work even better.

Wedman and Strathe (1985) administered Hall's Stages of Concern (SoC) Questionnaire to five groups of teachers in a two credit in service educational computing course, and found that teachers had most intense awareness and informational concerns.

Martin (1989) identified user Stages of Concern on technology use as contextual, information, personal, management, consequence (self), consequence (other), collaboration, and refocusing.

Bly (1993) used Martin's Stages of Concern about Computer Questionnaire and studied if there were a difference between groups of teachers with regards to their SoC and what they described to be effective staff development and support activities. She found that teachers at lower stages of concern rated structured introductory workshops, with much time given to hands-on activities, as being more effective than teachers at higher stages of concern. When groups of teachers are planning to adopt a technological innovation staff development is often the first strategy they suggest (Bradshaw, 2002). Joyce and Showers (1995) identified four types of staff development activities: a) presentation of theory, b) theory and modeling or demonstration, c) theory, demonstration, and opportunities to practice with low-risk feedback, and d) theory, demonstration, practice, and follow-up through coaching, study groups, or peer visits.

Adoption of Technological Innovations

While these above models explain the adoption and diffusion of innovations in general, there are also some specific models describing teachers and the adoption of technological innovations. Rogers (1986) noted the ways in which adoption of ICT differs from other types of innovations.

1. A critical mass of adopters is needed to convince the majority of other teachers of the utility of the technology.
2. To ensure the success of the adoption and diffusion, regular and repeated use is necessary.
3. Information and communication technologies can be used in a variety of ways, and adoption is part of a process that involves significant evolution on the part of the adopters.

Research conducted by Apple Computer in the Apple Classroom of Tomorrow (ACOT) project led to the development of a five stage model of technology implementation when computers are placed in school classrooms (Dwyer, Ringstaff, & Sandholtz, 1991)

1. Entry - teachers struggle to cope with and establish order in the transformed classroom.
2. Adoption - the beginning of adoption into the traditional classroom
3. Adaptation - while traditional teaching methods still predominate, but now supported with technology
4. Appropriation - with increasing confidence teachers become confident and pedagogically innovative
5. Invention - creativity including active experimentation by teachers and students

Table 2 provides three ways of viewing technology adoption, each relying on a fundamentally different metaphor of learning, behaviorism, cognitive learning theory, and cultural studies (adapted from Wilson et al, 2000).

Table 2. Three views of technology adoption, based on behaviorism, cognitive learning theory, and cultural studies.

Technology adoption as...	Based on...	Outcome stressed...	Common research method...
Consumer behavior	Behaviorism Market research Economic theory	Purchase and installation behaviors	National and regional demographic surveys
Information diffusion and rational choice	Information and organizational theories Cognitive psychology	Information leading to decision to adopt	User surveys within an organization or department

Assimilation of cultural tools and practices	Anthropology Cultural studies Activity theory	Interactions and practices within a local community	Ethnographies or case studies
Consumer behavior	Behaviorism Market research Economic theory	Purchase and installation behaviors	National and regional demographic surveys

Table 3 describes eight conditions that facilitate the implementation of educational technology innovations (adapted from Ely, 1999).

Table 3. Eight conditions that facilitate the implementation of educational technology innovations

Condition	Description	Linked to...
Consumer behavior	Behaviorism Market research Economic theory	Purchase and installation behaviors
Dissatisfaction with the status quo	Feeling a need to change.	Leadership
Expertise	Access to the knowledge and skills required by the user.	Resources, rewards & incentives, leadership, and commitment
Resources	Things needed to make it work—funding, hardware, software, tech support, infrastructure, etc.	Commitment, leadership, and rewards & incentives
Time	Prioritised allocation of time to make it work.	Participation, commitment, leadership, and rewards & incentives (table continues)
Condition	Description	Linked to...
Rewards or incentives	Internal and external motivators proceeding and following adoption.	Participation, resources, time, and dissatisfaction w/status quo
Participation	Shared decision-making; full communication; good representation of interests.	Time, expertise, rewards & incentives
Commitment	Firm and visible evidence of continuing endorsement and support.	Leadership, time, resources, and rewards & incentives

III. CONCLUSION

Hall and Hord (1987) suggest three to five year implementation times for innovation. Fullan (1990) describes change as development in use and tells us to assume that effective change takes time. Staff development is an important consideration when implementing any innovation. Visioning, planning, and financing are necessary steps in the implementation of technology initiatives. For an effective technology adoption, faculty’s different stages of concern should be acknowledged and appropriate support should be provided. Rogers (1995) describes adoption periods taking from a few months to several years. Future research should answer “What are the concerns of higher education faculty defining each band of the Rogers’ categories of technology innovation and how do these concerns relate to faculty development efforts that may help them effectively integrate online technology in their instruction.”

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GENDER DIFFERENCE IN AN ONLINE ASYNCHRONOUS DISCUSSION PERFORMANCE

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ABSTRACT

The study examined the gender difference in an online asynchronous discussion which was an integral part of a face-to-face undergraduate course. It was carried out with 30 fourth grade math pre-service teachers in the faculty of education at a university. The content analysis of the online discussion was performed according to Henri's model (1992). The messages in this online discussion were assessed by a grading rubric developed by the researcher with the inspiration from the rubric of Topcu and Ubuz (2004), and Henri's model of cognition and interactivity. The interrater reliabilities for objectivity on content analysis in the dimension of cognitive skills, interactivity and message composition were .76, .87 and .91, respectively, which can be taken to represent excellent agreement beyond chance. The findings indicated that there was no significant gender difference in the online asynchronous discussion performance when pre-service teachers' prior success and, their computer and web experience were controlled. The study suggests that an instructor should use facilitative questions to deepen interaction and develop feeling of confidence rather than to clarify the content of the course in the asynchronous online discussion.

Key Words: Gender, Online Discussion, Content Analysis

ÇEVİRİMİÇİ ASENKRON TARTIŞMA PERFORMANSINDA CİNSİYET FARKI

ÖZET

Çalışma, yüzyüze lisans dersinin tümleyen bir parçası olan çevrimiçi asenkron tartışmada cinsiyet farkını araştırmıştır. Bir üniversitenin eğitim fakültesindeki 30 dördüncü sınıf öğretmen adayı öğrencisiyle çalışma yürütülmüştür. Çevrimiçi tartışmaların içerik analizi Henri (1992) modeliyle yapılmıştır. Topçu ve Ubuz'un (2004) ölçeği ve Henri'nin bilişsel ve etkileşim modelinden esinlenerek geliştirilmiş olan ölçek ile çevrimiçi tartışmalardaki mesajlar değerlendirilmiştir. İçerik analizinde nesneliği sağlamak için hesaplanan kodlayıcılar arası tutarlık; bilişsel boyutta .76, etkileşim boyutunda .87 ve mesaj kompozisyonu boyutunda ise .91'dir. Bu değerler iyi olarak kabul edilebilir. Öğretmen adayı öğrencilerin önceki ders başarıları ile bilgisayar ve web deneyimlerini kontrol altında tutan analizde, çevrimiçi asenkron tartışma performansında cinsiyet farkı bulunmamıştır. Çalışma; öğretmenlerin, çevrimiçi asenkron tartışmalarda ders içeriğiyle ilgili açıklamalar yapmaktan çok, etkileşimi derinleştirecek ve güven hissini geliştirecek yönlendirici sorular kullanmasını önermektedir.

Anahtar Sözcükler: Cinsiyet, Çevrimiçi Tartışma, İçerik Analizi

1. INTRODUCTION

Online discussion is considered to be a learning environment in which students can achieve higher conceptual knowledge through interaction of knowledge and experience among all students (Harasim, 1993). In this sense, most online learning systems try to put online discussion forum for providing online learning community (Im & Lee, 2004). Online discussion has increasingly become an integral part of fully-online or face-to-face teaching in universities, because it increases participation and collaborative thinking through providing of asynchronous, nonhierarchical and reciprocal communication environment (Garrison & Anderson, 2003). Altun (2005) reported that the most current use of online learning environment is asynchronous and students prefer asynchronous online discussion because of its convenience. However, online learning environment which is challenging traditional education is evolving its own pedagogy (McDonald, 2002).

Communication, rather than individual acquisition, has recently been emphasized as a means of increasing quality of instruction. Online discussion as a tool for promoting "conversational modes" of learning can lead to enhanced learning outcomes for students such as engagement in learning task, deeper levels of understanding, increased metacognition, increased motivation and divergent thinking. However, the common misconception of the online discussion forum is that it is virtual learning environment in which students are likely to learn as much from one another as from course materials or lectures (Thomas, 2002). In fact, what they learn can be seen not so much as a product, but as a creative cognitive process of offering up ideas, having them criticized or experienced on, and being able to synthesize ideas in the light of peer discussion (Garrison, Anderson, & Archer, 2001). Similarly, Bates (1995) noted that students engage in higher order processing of information by reflecting on

peers' contribution in online discussions. So articulating their own understanding lead them to construct personal meaning which is not individualized, but rather a product of peers' interaction.

As instructors move toward increasing use of information and communication technologies, as a means of supporting learning, it is necessary to evaluate the learning outcomes by considering the potential confounding factors such as gender, class, socially constructed categories etc. (Thomas, 2002). In studies of computing and online discussions, gender is often used to mark discussions of women and their relationships to technology, and their role in computer culture itself (Yates, 1997). Much of the discourse is concerned with the inequalities of access, use and role faced by women. Herring's (2001) review of the research on gender differences in online discussions reported that men and women have recognizably different styles in electronic posting and that they also have different ethical standards for what are appropriate and desirable postings. Herring reported that men's postings tended to be lengthy and frequent, characterized by strong assertions, assertiveness, distancing, self-promoting. In contrast, the postings of women are mainly personal and include queries and information. Moreover women, however, were found to be contributing more interactive messages than men (Barett & Lally, 1999). Guzetti and Fey's (2001) examinations of 10 empirical studies of gender and electronic text revealed three major themes (1) online discussion only sometimes empower females to develop voice (2) preventing gender bias in online discussion was problematic (3) groups and partners could either help foster or deter gender equity in electronic discussion. The lack of face-to-face cues in online discussion is seen as equating online discussion to some kind of dial speech situation, but it does not mean that women participated in the discussion more than men (Yates, 1997; Herring, 2001) though online discussion places emphasizes on what is said and removes seemingly extraneous aspects of face-to-face communication (Sproull & Keisler, 1991).

Participation, critical/creative thinking and engagement in the learning task which are provided in the online discussion forum yield effective learning and high students' achievement (Jonassen, 2000; Tam, 2000). However, while online discussion appears to be good for learning and achievement, it must be recognized that it is highly mediated. While some of recent research has taken this mediation to be beneficial for learning outcomes, it is possible that gender and the nature of online discussion may interact with each other in the dimension of students' cognitive levels and consequently male and female may have various performances in the online discussion forum.

Having established these facts, the study presented in this paper was designed to provide an analysis of students' online discussion performance (DP) in order to understand better the gender effect. The students' Grand Point Average (GPA) (previous course successes) and, Computer and Internet (WWW) Experience (CIE) were considered as confounding factors that can affect the discussion performance. The following research question was formulated in this study:

Is there a significant gender difference in the asynchronous online discussion performance when students' GPA and online learning environment experience are controlled?

II. METHOD

Participants

The study was carried out in a university in which medium of instruction is English during the fall semester of 2005 in the course titled as "Computer-assisted Math Instruction". The sample consisted of 30 pre-service teachers enrolled at fourth year level. There were 17 females and 13 males in the sample with all of the students between the ages 21 and 23. All of them took an "Introduction to Computer" course at the first year level and have been using computer regularly. Of these students, 76 % of the females and 54 % of the males took the "Instructional Technology and Materials Development" course. It is stated that most students (90 %) either frequently surf the Web or perceive the Web as central of their studies / works. Only seven female and three male pre-service teachers took a fully online course previously.

Software

The online discussion forum was created with "PhpBB" software and placed on the central university server and was accessible over the Internet by using a computer with an Internet connection and web-browsing software. Every tools and functions are in English. Students are able to access to the online discussion forum with a username and password given to them. PhpBB had also the capacity to provide synchronous communication. The web-interface presenting students' contributions is in the following structure:

Discussion Thread
 Main Topic
 Response
 Response

Forum administrator is able to open more than one thread and more than one topic under each thread. Forum administrator can create groups, assign a moderator to the group, regulate time span in the discussion, specify group members, put limitations to a member in terms of IP number or e-mail address or any other ID information and keep any statistics related to the content of messages in terms of words, member name, time etc.

Students are able to access to the online discussion at any time during the specified period either from a computer at home or from the public computer laboratories in the universities. They can send messages with containing emoticons and multimedia materials (picture, sound, videos).

Procedure

The study was conducted by the researcher as instructor at the fall semester of the 2005-2006 academic years. The online discussion was integrated into the existing three-credit undergraduate course “Computer-Assisted Mathematics Teaching” which is instructed in four periods (two in class, two in lab) weekly. This online discussion forum was specifically designed to provide virtual learning space in which pre-service teachers could engage in a conversational mode of learning toward higher order learning outcomes. Five discussion threads which were units of the course were run through the semester for a period of one week each except the first one. These threads are Semantic Network, Drill and Practice, Hypermedia, Asynchronous Communications and Evaluation of the Educational Software. The applications of these threads were in the third, fourth, tenth, 12th and 13th week of the semester, respectively. The first one lasted two weeks because student needed to overcome inexperience in the discussion forum and its software. These discussion threads and their main topics were selected so that they would facilitate learning and increase understanding of the content in the traditional classroom. Therefore, the instructor did not attempt to elicit specific “correct” responses from students but rather outlined major issues pre-service teachers were expected to promote discussions on. Most importantly, main topics were worded to promote students’ critical reflection on issues central to the course. As examples for the main topics;

“What are the learning activities with drill and practice? (*Question that ask for more evidence*)
How should we use drill and practice in the web based learning environment? (*Question that ask for clarification*)

The online discussion was explicitly embedded within the course web site. Three times participations in terms of messages in the online discussion was compulsory for all pre-service teachers in a one week period (from Monday 5 p.m. to Sunday 5 p.m.) and contributed 20 % of their overall grade for the course. On enrollment in the course, pre-service teachers were given detailed instruction on the operations of the online discussion forum, including information on logging-in, navigation within the forum and step-by-step how to post a new message. Some of the rules for the messages were as follows: (1) Messages should not contain more than 150 words, (2) Messages must be written in English, (3) Messages should be written in formal Writing structure, (4) Each message should have a topic and (5) Students should reflect on their friends’ ideas in the messages, criticize them or make inferences about their ideas. At the beginning of each main topic instructor acted as facilitator of the discussion, encouraging pre-service teachers and “seeding” the discussion with initial input. After these, instructor’s interaction was kept to a minimum level except for the about purposes.

III. DATA ANALYSIS

A number of models for the evaluation of the quality of learning are available in the literature. The focus of these frameworks varies, depending on the purposes of the evaluation and the interest of the researchers. For example, Henri’s (1992) model focused on the level of participation and interaction in the discussion group, as well as analyzing the content of the messages according to a cognitive view of learning. Later, Newman, Webb and Cochrane (1995) applied Henri’s model and Garrison’s (1992) critical thinking approach to develop strategies to measure critical thinking in face-to-face and computer-supported group learning while Gunawardena, Lowe and Anderson (1997) developed method for analysis of an online debate and look for evidence for the social construction of knowledge. Frankly, the model developed by Henri (1992) has been influential in the content analysis research in the last decade. In this model, the transcripts are analyzed according to five broad dimensions; these are participative, interactive, social, cognitive, and metacognitive. The present study used the cognitive and interactive dimensions of the model to develop a grading rubric for the discussion performance and to provide insight for learning process through an analysis of the message content. Henri’s model for the cognitive skills and interactivity are outlined in the Table 1 and 2.

An objective determination of the unit of meaning in content analysis is difficult to make. The researcher selected the safe way for the content analysis by following Henri’s (1992) idea and message was used as the unit

of analysis. Message texts in the discussion forum were first copied to a Microsoft Word file, organized according to the “threads” of the online discussion and their chronological order. A sample of the coding organization matrix is demonstrated in Table 3. As seen in the table, transcripts do not contain any information of the message sender’s identity (gender, name, etc.). The coding was done on a hard copy of the transcript. Coding of the message was conducted by the researcher and an Information Sciences doctoral student with 13 years of teaching experience. The coders’ decisions were compared for reliability. The primary test of objectivity in content analysis is interrater reliability. Cohen’s kappa statistic was used to determine it which is a chance corrected measure and assumes two raters, in cases and mutually exclusive and exhaustive nominal categories (Cappozoli, McSweeney, Sinha, 1999). The Cohen’s kappa for their coding is .76 for cognitive skills, .87 for interactivity and .91 for message composition analysis, which can be taken to represent excellent agreement beyond chance.

Table 1: Cognitive Skills Model

Reasoning Skills	Codes	Definitions	Indicators
Elementary Clarification	EC	Observing or studying problem and observing their linkages in order to acquire a basic understanding.	Identifying relevant elements, Reformulating the problem, Asking relevant question,
In-depth Clarification	IC	Analyzing and understanding a problem to an understanding which sheds light on the values, beliefs, and assumptions.	Defining the terms, Identifying assumptions, establishing referential criteria,
Inference	IN	Induction and deduction, admitting or proposing an idea on the basis of its links with propositions already admitted as true.	Drawing conclusions, making generalizations, formulating propositions.
Judgment	JU	Making decisions, statements, appreciations evaluations, sizing up.	Judging the relevance of solutions, making value judgments, judging inferences.
Strategies	ST	Proposing co-ordinated actions for the application of a solution	Deciding on the action to be taken proposing one or more solutions interacting with those concerned.

Table 2: Interactivity Model

Category	Codes	Definitions	Indicators
Explicit Interaction	EI	Any statements referring explicitly to another message, person, or group	“..in response to Ali’s message 53”
Implicit Interaction	II	Any statement referring implicitly to another message, person, or group	“I think the solution is...”
Independent Statement	IS	Any statement relating to the subject under discussion, but which is neither an answer nor a commentary and which does not lead to any further statements.	“After examining the problem, I think that...”

Researcher developed the grading rubric by inspiring from the grading rubric developed previously by the researchers Topcu and Ubuz (2004) and the grading rubric developed by Debbie King of Sheridan College (Palloff and Pratt, 2003). This rubric given in Table 4 gave clear direction to the pre-service teachers, reduces or eliminates any disagreements about grading at the end of the course and also encourages the interactivity and high level cognitive thinking by announcing its effect on their grades. Mean and standard deviations of the pre-service teachers’ discussion scores were used to have a general understanding for the learning process. Furthermore one way of covariance analysis (ANCOVA) was conducted to explain whether there is a gender

difference in the online discussion performance when pre-service teachers ‘prior success and experience in the web and computer were controlled.

Table 3: Sample discussion forum message coding

Content of the message	Message #	Time	Interactivity	Cognitive Skills
Written message by Pre-service teacher 18 (PT 18)	12	Thu Dec 01, 2005 10:18 am	EI	JU
PT 14 said that “otherwise, computer will be the teachers and students will be passive as they copy knowledge from the net.” I do not agree PT14 in some way. Students can not be passive learners when they are engaged in a web based instruction which contains simulations, drill and practice, and games that are designed to teach concepts, rules properties of something or etc. As a conclusion, whether the students will be active or passive learners depended on what they will use as a learning material. Besides, the teacher’s teaching skill has also a role in making the students active or passive learners. If the teacher does not tell the students the purpose of, for example, playing with simulations related to a topic, then the students will not know what they are expected to do and to learn. So they cannot learn anything on account of not having knowledge about the learning material.				

Table 4: Grading rubric of the message for Discussion Performance

Criteria	Definitions	Scores	Max Scores
Cognitive levels	All discussion on EC	3	
	At least one example of discussion on IC	4	5
	At least one example of discussion on IN or JU or ST	5	
Interactivity	Explicit or implicit interaction	3	
	Independent Statement	1	3
Message Composition	Having title, obeying rules of compositions, clear and correct sentences etc.	2	2

IV. FINDINGS

Table 5 and 6 summarize the descriptive statistics for the cognitive levels and interactivity in the messages with respect to Henri’s model. As seen below, proportion between female and male tends to the female site in the first three levels whereas it tends to the male site in the last two levels. Moreover, males sent EI type messages more than female and females sent II types messages more than males. The mean and standard deviation of their discussion scores and GPA with respect to the gender is demonstrated in Table 7. There is significant mean difference between male and female in the GPA, $t(28) = 3.801, p = .001 < .05$.

Table 5: Distribution of the Cognitive Levels with respect to Gender

Gender (%)	Cognitive Levels ^a (%)				
	EC	IC	IN	JU	ST
Female (57)	67	63	69	47	42
Male (43)	33	37	31	53	58

^a EC = Elementary Clarification; IC = In-depth Clarification; IN = Inference; JU = Judgment; ST = Strategies

Table 6: Distribution of the Interactivity with respect to Gender

Gender (%)	Interactivity Levels ^a (%)		
	EI	II	IS
Female (57)	42	60	55
Male (43)	58	40	45

^a EI = Explicit Interaction; II = Implicit Interaction; IS = Independent Statement.

Table 7: Descriptive Statistics for Discussion Performance

Gender	GPA ^a	GPA	DP ^b	DP Std. Dev.
	Mean	Std. Dev.	Mean	
Female	2.81	.31	7.55	1.49
Male	2.35	.34	7.94	.86

^aGPA = Grand Point Avarage; ^bDP =Discussion Performance;

The hypothesis on asynchronous online discussion performance predicted that there is no significant difference between female and male pre-service teachers when their GPA and CIE are controlled. Prior to conducting ANCOVA two independent variables, GPA and CIE, were predetermined as potential confounding variables to statistically equalize the differences between female and male. The potential covariates were correlated with the dependent variable (Discussion performance). The correlations and their significance appear in Table 8. Both of the confounding variables had significant correlation with the dependent variable. Therefore, they remained in the covariate set for the inferential statistics.

Table 8: Correlations between the variables

Variables	Gender	GPA ^a	CIE ^b	DP ^c
Gender	1			
GPA	-.583**	1		
CIE	-.238	.539**	1	
DP	-.279	.706**	.513**	1

**Correlation is significant at the 0.01 level (2-tailed)

^aGPA = Grand Point Avarage; ^bCIE =Computer and Internet Experience; ^cDP= Discussion Performance

Furthermore, assumption of homogeneity of regression should be satisfied to be able to conduct ANCOVA. It requires that the regression of dependent variable on covariates must be constant over different values of the group membership. To check this assumption, Multivariate Regression and Correlation (MRC) was conducted using enters method for each variable to test the significance of R² change for two interaction terms produced by multiplying the group membership with the covariates, separately. The contribution of interactions is not significant for the DP [F (2, 24) = 2.184, p= .134]. These results indicated that, there were no significant interactions between covariates and the group membership; therefore the interaction set can be discarded, and thus excluded from further inferential statistical analyses. The result of the one-way ANCOVA revealed that there is no significant mean difference on DP between female and male when GPA and CIE are controlled, F (1, 26) = 1.913, p= .178>.05

V. DISCUSSION, IMPLICATIONS AND CONCLUSIONS

Female and male pre-service teachers had similar online discussion performances though prior success of the females was significantly higher than the males. Similar to the discussion performance, cognitive levels in the messages of the females and males were also parallel. These findings add a new variable to the domain of variables on which there is an insignificant gender difference and also support the previous research findings about the insignificant gender difference on WWW for surfing and Internet for learning (Isman, 2002; Herring, 2001). Nevertheless, males sent messages at the cognitive levels “judgment” and strategies” more than females whereas females sent messages at the cognitive levels “elementary clarification” and “inference” more than males. Moreover, females tended to send messages at II level while males tended to send messages at EI level.

Although female pre-service teachers’ GPA was higher than male pre-service teachers’ GPA their online discussion scores were very similar. This could be explained in several ways. The first and the most important one is that females had excessive amount of difficulties in providing messages at the cognitive levels, JU and ST. Since these students were the majority of the class and had sincere relationships with each other, their participation might be imperfect, less clear and insufficient in the online discussions. The second one is the authoritative flaming and leading messages of the males in the forum. They caused females to send more messages in the cognitive levels “elementary clarification” or “inference”. For instance, student 17 (female) wrote in some part of the message to her friend as “you probably have misunderstood and been aggressive to me. In fact, I intended that drill and practice should not be used at the beginning of the lesson when we need to summarize content of the previous lessons”. Thirdly, the number of females was higher than the males and it might have caused males to send more JU messages in order to dominate female-rich medium in which the level of high acquaintance. Above conditions might imply that if online asynchronous discussion is conducted as an integral part of a face-to-face course, instructor should stress on the “virtual places” aspect of the online

discussion and encourage students to express and share all of their ideas as if they would discuss all the matters only in this platform.

The message chain -female message (initiating statement) → male message (response) → female message (response)- “FMF” throughout discussion constitute of the 47% of the total discussion chain. At first glance, the reason seems to be the majority of the females in the group; However, it could also imply that females sent compact messages and they needed clarification. Furthermore, it might mean that females try to persuade males of their ideas. Therefore, males might send more “JU” and “ST” level messages and females might send more EC and IN level messages. It could also explain why females sent more messages at II level more than males. Probably, this case might moderately explain high discussion scores of the males. In fact, high discussion scores of the males were realized even though three males’ interest and motivation were quite lower than other males and they decreased the mean of the males’ discussion scores. These conclusions suggest that instructor should use excessive amount of facilitative questions to deepen interactions and to develop feeling confidence rather than clarifying the content of the course. In other words, facilitative questions should aim primarily to promote “conversation modes” of the discussion rather than to enhance learning outcomes.

Issues of access and gaining sufficient experience for the online environment do not eliminate the problems of female students in the participation, because female students need more social interactions and feeling of goodness; and also the lack of face-to-face aspect of online discussion forums removes the basis for discrimination and exclusion. In other words, it causes misleading feeling of insufficient articulation of their ideas and emotions. On the other hand males were affected less than females from these conditions. This study’s findings support the previous researches’ conclusions (Dündar & Kıyıcı, 2004; Yates, 1997). Moreover, consistent with the results of the study of Im and Lee (2004), females used the EC more, whereas they used the ST and JU less, and they prefer the II more. In fact, this case decreases females’ discussion performances and interactions due to existing self-imposed boring and unreliable environment for the online discussion forum.

Interestingly, the wait time of the females after the message was sent was lower than that of the males. It might have caused a decrease in the cognitive level of the messages even though they could send rich and high level messages, because they did not sufficiently use the favorite characteristic of the “asynchrony” in the online discussion forum. Their reflection remained poor. Therefore, it would be a good idea if, a moderator or an instructor of the course should encourage and motivate students, especially, female ones that they should not be panic and that they should consider their knowledge and investigations about discussion topic in detail while sending messages.

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THE EFFECTS OF COMPUTERS ON KINDERGARTEN CHILDREN'S SOCIAL SKILLS

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ABSTRACT

The purpose of the study was to examine the effects of computer use on children's social skills in kindergarten. Early Childhood Longitudinal Study-Kindergarten Class of 1998-99 (ECLS-K), conducted by National Center for Educational Statistics, was utilized to analyze differential effects of home and school computer use on kindergarten social skills gains. The sample included 12,929 kindergarten children. Results indicated that children who use computers more proficiently demonstrated less problem behaviors and better social skills, rated by their teachers.

THEORETICAL BACKGROUND

With the emergence of information technology, the number of personal computers in the home has increased drastically in the past two decades. According to the U.S. Census Bureau (2001), the number of households in the United States that owned personal computers in the year 2000 is 51%. It is quite an increase from 8.2% in 1984. Various demographic and socioeconomic factors such as income, family size, location of residence, and the presence of a child in the household were associated with home computer ownership. By the year 2000, 65% of children who were 3 through 17 years of age in the United States lived in a household with a computer (National Center for Education Statistics, 2003). A recent survey found that young public school children with access to home computers used them 3 to 4 days a week with the purposes of use varying by children's gender, ethnicity, and family SES.

The numbers are more affirmative when the access to computers at school is scrutinized. By the end of 1990's, the nationwide ratio of students to instructional computers was 6 to 1 and the Internet access in public schools was 95% (Snyder & Hoffman, 2002)

Computer technology offered great amount of possibilities in the early childhood settings as well and the potential value of a personal computer in early child development has been debated consistently among both practitioners and researchers for many years. Building upon the work of educational researchers and practitioners, the National Association for the Education of Young Children (NAEYC) has acknowledged that computers can enhance young children's learning and collaborative experiences with peers and has issued guidelines for selecting software and using computers in the classroom (NAEYC, 1996).

Computers are viewed as having tremendous potential to benefit young children when they are used in a developmentally appropriate way (Haugland, 1999; Haugland & Wright, 1997). Used in appropriate ways, the computer is an invaluable resource that fits children's learning style. It also has a unique potential to provide scaffolding opportunities enabling children to successfully explore and master tasks that would be impossible without a computer (Char, 1990). Furthermore, it also provides teachers a unique opportunity to access information and reach other people to share the knowledge.

Research has gradually addressed the concerns regarding the potential dangers and benefits of computers for young children. Research confirms that it is not computers, but the type of computer experiences provided to young children that determine whether computers enhance or inhibit development (Clements, Nastasi, & Swaminathan, 1993).

Opponents of computer utilization and computer advocates have made very different claims regarding how computers affect the child. Opponents fear computers will replace other early childhood activities, such as children's experiences with blocks, sociodramatic play area or art media (Barnes & Hill, 1983). Computers take children away from the real developmental tests of the young children (Turner, 1992). Exposing children to the power of computers may cause their thinking to be dominated by computers, rather than children developing a better understanding of themselves and the world (Haugland & Wright, 1997).

Opponents have also feared that computers will push children to learn skills they are not ready to learn. Elkind (1985) mentioned that computers pull them away from valuable play experiences as teaching machines used for drill and practice, programmed instruction. Literature today shows that if computers are used in developmentally appropriate ways they meet young children's needs (Haugland & Wright, 1997).

One of the major critics to computers is that they would cause children to have less interaction and lead to a generation of social isolates (Barnes & Hill, 1983). Children who spend time at computers would not build the social skills so important to their overall growth and development.

However, research confirms that there are as many social interactions around the computer as in other activities within the classroom (Clements, Nastasi, & Swaminathan, 1993; Haugland, 2000; Lipinski, et al, 1986). Computer area provides many opportunities to children for interaction with peers and the teacher as discussing what they are doing, asking for help, exploring a program together, etc. Cooperative Learning provides the guidelines of interactive practices on which curriculum makers can build the computer activities (Johnson, Johnson, & Holubec, 1993). Research shows that children also prefer working with a peer to using computer alone. Thus, rather than creating social isolation, it is suggested that computers provide children opportunities to build social skills (Haugland & Wright, 1997). Thus, this research aimed to examine the differential effects of several computer variables, such as owning a home computer, frequency of using computers, and using computers for instructional purposes, on kindergarten’s social skills measured by the Social Skills Rating System (Gresham & Elliott 1990), utilizing the data from ECLS-K.

Data Source

This research utilized data from the Early Childhood Longitudinal Study-Kindergarten Class of 1998-99 (ECLS-K), conducted by National Center for Educational Statistics (NCES). The ECLS-K is a “multi-source, multi-method study that focuses on children’s early school experiences beginning with kindergarten” (US Department of Education, 2000, p, 1-1). The ECLS-K provides data from a nationally representative sample of children from kindergarten through fifth grade. A total of 22,782 children throughout the US are sampled in the study and it assessed children directly or indirectly in 1,277 schools which offered kindergarten programs during the 1998-99 school year. It was expected to better describe and understand the effects of computers on children’s social skills with this data because when used with appropriate sample weights (provided by NCES), results from the ECLS-K data are generalizable to the United States’ population of kindergarten children, teachers, and schools offering kindergarten programs in the 1998-1999 school year. The final sample for this study included 12,929 kindergarten children.

There are several unique advantages of using the ECLS-K that were utilized in this study. First and most, ECLS-K is the first and currently the only available large-scale database which is nationally representative of the status of the young children from kindergarten to the early years of elementary schooling. It provides invaluable nationally representative data on children’s status at entry into school and their progress through fifth grade. Therefore, results of this study can be generalized to the U.S. population of kindergarten and first grade children, teachers, and schools.

RESULTS

The relationship between social skills, measured by the Social Skills Rating System (Gresham & Elliott, 1990), and three main variables of children’s computer use in kindergarten has been scrutinized for this study. Basic descriptive analyses for scales are presented in Tables 1, 2, and 3 regarding the child’s gender, race, and the status of home computer ownership, respectively. Oneway analysis of Variance (ANOVA) results showed significant differences only for the race variable. Asian children consistently gained more on Approaches to Learning (M=0.18, SD=0.52), Self-Control (M=0.11, SD=0.52), and Interpersonal (M=0.23, SD=0.54) skills. They showed the least amount of increase in Externalizing Problem Behavior (M=0.02, SD=0.42), and the only decrease in Internalizing Problem Behavior M= -0.01, SD=0.44) scales.

Table 1: Means and Standard Deviations for SSRS Gain Scores by Gender

Gender		Approach to Learning	Self-control	Interpersonal	Externalizing Problem Behavior	Internalizing Problem Behavior
Male	Mean	.12	.08	.14	.06	.04
	N	6501	6269	6107	6399	6307
	SD	.53	.55	.55	.51	.48
Female	Mean	.13	.09	.15	.05	.03
	N	6428	6165	6142	6330	6268
	SD	.50	.51	.54	.43	.49
Total	Mean	.13	.08	.15	.05	.03
	N	12929	12434	12249	12729	12575
	SD	.52	.53	.55	.47	.48

Table 2: Means and Standard Deviations for SSRS Gain Scores by Race

Child composite race		Approach to Learning	Self-Control	Interpersonal	Externalizing Problem Behavior	Internalizing Problem Behavior
Caucasian	Mean	.12	.08	.13	.03	.02
	N	7748	7507	7418	7646	7601
	SD	.50	.51	.54	.44	.46
African-American	Mean	.09	.03	.11	.10	.08
	N	1710	1650	1626	1688	1640
	SD	.53	.56	.56	.53	.50
Hispanic	Mean	.14	.09	.16	.07	.03
	N	2078	1943	1900	2023	1985
	SD	.54	.54	.56	.49	.52
Asian	Mean	.18	.11	.23	.02	-.01
	N	812	768	747	797	778
	SD	.52	.52	.54	.42	.44
Others	Mean	.12	.07	.12	.05	.06
	N	563	548	540	558	553
	SD	.50	.54	.53	.51	.47

Table 3: Means and Standard Deviations for SSRS Gain Scores by Owning a Home Computer

Have home computer child uses		Approach to Learning	Self-Control	Interpersonal	Externalizing Problem Behavior	Internalizing Problem Behavior
Yes	Mean	.13	.09	.15	.04	.03
	N	7465	7222	7136	7373	7291
	SD	.51	.52	.54	.45	.47
No	Mean	.1169	.0751	.1355	.0732	.0378
	N	5464	5212	5113	5356	5284
	SD	.53	.54	.56	.49	.50

Other two main variables of interest were the frequency of children’s home computer use and children’s level of proficiency in using computers, reported by the teachers. Responses for the frequency of computer use at home ranged between *never* and *every day*, whereas the level of proficiency was reported on a scale of responses between *not yet* to *proficient*. Level of proficiency resulted in significant ANOVA differences between groups for all subscales. As it can be seen in Table 4, children rated as *proficient* by their teachers demonstrated better results in all five scales than the other four groups. Results of the oneway ANOVA, is presented at Table 5.

Table 4: Means and Standard Deviations for SSRS Gain Scores by Computer Proficiency

Uses computer for variety of goals		Approach to Learning	Self-Control	Interpersonal	Externalizing Problem Behavior	Internalizing Problem Behavior
Not yet	Mean	.09	.08	.13	.06	.04
	N	515	466	443	492	488
	SD	.59	.58	.54	.52	.56
Beginning	Mean	.05	.03	.10	.08	.08

	N	1719	1638	1605	1699	1673
	SD	.52	.53	.54	.50	.51
In progress	Mean	.10	.07	.12	.06	.04
	N	3528	3385	3350	3450	3408
	SD	.51	.52	.55	.47	.48
Intermediate	Mean	.13	.07	.1413	.04	.02
	N	3134	3054	3016	3086	3059
	SD	.51	.52	.54	.44	.45
Proficient	Mean	.20	.15	.20	.01	-.01
	N	2002	1965	1946	1988	1972
	SD	.48	.52	.53	.44	.46

Table 5: *Oneway ANOVA Results for Effects of Computer Proficiency on Social Skills Scales*

	<i>df</i>	Mean Square	F	Significance
Approaches to Learning	(4, 10893)	5.67	21.41	.001
Self-Control	(4, 10503)	3.48	12.48	.001
Interpersonal	(4, 10355)	2.90	9.67	.001
Externalizing Problem Behavior	(4, 10710)	1.17	5.33	.001
Internalizing Problem Behavior	(4, 10595)	2.02	8.67	.001

Correlations among the scales are provided in the Table 6. Because of the relatively high correlation among social skills scales and behavior problem scales, two separate Multiple Analysis of Variance (MANOVA) tests applied to the data. Multiple analysis of variance (MANOVA) is used to see the main and interaction effects of computer use in kindergarten on five social skills variables; approaches to learning, self-control, interpersonal skills, externalizing problem behaviors, and internalizing problem behaviors. For the first MANOVA analysis, where Approaches to Learning, Self-Control, and Interpersonal skills were the outcome variables, the multivariate main effects for computer using proficiency, Wilks' lambda = .99, $F(12, 26751) = 4.53$, $p < .001$, was accompanied by significant univariate effects on all three subscales.

Table 6: *Correlations among SSRS Scales*

	Self-Control	Interpersonal	Externalizing Problem Behavior	Internalizing Problem Behavior
Approaches to Learning	.48 (12241)	.54 (12242)	-.29 (12270)	-.23 (12565)
Self-Control		.62 (11948)	-.43 (12288)	-.18 (12151)
Interpersonal			-.35 (12126)	-.23 (12016)
Externalizing Problem Behavior				.22 (12446)

All correlations are significant at the 0.01 level (2-tailed). Numbers within parentheses indicate sample size.

The multivariate main effects for having a home computer, Wilks lambda = 1.00, $F(3, 10111) = .14$, $p > .05$, and the frequency of computer use, Wilks lambda = 1.00, $F(12, 26751) = .16$, $p > .05$, were not significant, supporting the results of univariate effects. Results of the first MANOVA is presented in Table 7. Students who were proficient in using computers, as rated by the teacher, had better scores on each of the five SSRS scale.

Table 7: *Multivariate and Univariate Analyses of Variance for Social Skills*

	Multivariate	Univariate		
	<i>F</i>	Approaches to Learning Gain	Self-Control Gain	Interpersonal Gain
Home Computer	.14 (3, 10111)	0.28	.06	.32
Computer Frequency	.16 (12, 26751)	.11	.18	2.36
Computer Proficiency	.99* (12, 26751)	10.50*	4.52*	5.33*

Note: Multivariate *F* ratios were generated from Wilks' Lambda. * $p < .05$

Table 8: *Multivariate and Univariate Analyses of Variance for Problem Behaviors*

	Multivariate	Univariate	
	<i>F</i>	Externalizing Problem Behavior Gain	Internalizing Problem Behavior Gain
Home Computer	6.65* (2, 10467)	12.48*	.01
Computer Frequency	2.09 (8, 20934)	.15	3.48
Computer Proficiency	2.75* (8, 2932)	4.87	5.20*

Note: Multivariate *F* ratios were generated from Wilks' Lambda. * $p < .05$

Students who had a home computer, more frequently were rated lower on the externalizing problem behavior scale ($M=0.3$ vs. $M=0.7$) by their teachers. Children who used computers at a proficient level were the only group who demonstrated a decrease in internalizing problem behavior scale, whereas children from all other four efficiency groups showed some increase.

Educational Importance

Computers have a big potential for both children and teachers in the field of early childhood education. Furthermore, research confirmed that when computers are located in the classroom, rather than in a computer lab, a child's developmental gains from using appropriate software are significantly greater (Davis & Shade, 1999). However, computers' success mainly depends on how they are used. Particularly, possible negative effects of computers on children's social skills are commonly argued in the field because of the fact that computers are generally used in isolation (Barnes & Hill, 1983) by each child. How the computer is used in the classroom directly affects its ability to support development. Research has shown that children value peer interaction while using computers and that the social effects are "overwhelmingly positive" (Rhee & Bharnagri, 1991; Bergin, Ford, & Hess, 1993; Clements, 1994). Research has also shown that computers provide valuable support to young children's language development (Clements, 1994). Thus, when computer are placed in a central location, they support both social interaction and children's language development.

Results of the present study provided supporting evidence to the proponents of computer use in kindergarten classrooms. Results indicated that positive effects of computers on children's social skills in kindergarten depend on the level of proficiency in using one. Children who used a computer more proficiently demonstrated more positive social skills and less problem behaviors. On the other hand, owning a home computer that is available to the child's daily use did not have any significant effect on positive social skills. The only effect of owning a home computer was observed on the externalizing problem behavior scale where children who had a home computer exhibited less problem behaviors. Computer using frequency had no effects on either the positive social skills or the negative problem behaviors. Children who vary in daily computer using frequency did not differ in the aforementioned skills demonstrated. It is essential to notice that using computers more frequently in kindergarten did not result in any negative social behavior as it was argued in the previous research.

These results provide more insight to the issue of computer use in kindergarten. Opponents of the computer use in kindergarten level supports the notion that young children who use computers heavily will spend less time on other more developmentally rewarding activities. However, this argument and the suggestion by some scholars' that computers foster social isolation in young children do not appear to be true against the empirical findings of this study. Children who use computers more frequently and at a more proficient level demonstrated more social skills gains and less problem behaviors gains in the kindergarten year. Further research to investigate social

effects of computers controlling for family variables such as income, education level, and parenting types is suggested.

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THE ROLE OF COMPUTERS IN WRITING PROCESS

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ABSTRACT

In this paper, the role of computers in writing process was investigated. Last 25 years of journals were searched to find related articles. Articles and books were classified under prewriting, composing, and revising and editing headings. The review results showed that computers can make writers' job easy in the writing process. In addition, literature results revealed that teachers, peers, instructional strategies, and computer software all together have some important roles to develop students' writing ability. Simplifying the revising process is the biggest expectation from computers.

Keywords: Computer, prewriting, composing, revising and editing

YAZMA İŞLEMİNDE BİLGİSAYARLARIN ROLÜ

ÖZET

Bu çalışmada, bilgisayarın yazma işlemindeki rolü incelenmiştir. Son 25 yılda yayınlanan dergiler ilgili makaleleri bulmak için incelenmiştir. Kitaplar ve makaleler yazımöncesi, yazma ve gözden geçirip düzeltme başlıkları altında sınıflandırılmıştır. Tarama sonuçları bilgisayarların yazma işleminde yazıcının işini kolaylaştırdığını göstermiştir. Buna ek olarak, ilgili alanyazın öğretmenlerin, akranların, öğretim stratejilerinin ve bilgisayar yazılımlarının hep birlikte öğrencilerin yazma becerilerini geliştirmede önemli rolleri olduğunu göstermiştir. Bilgisayarlardan olan en önemli beklenti gözden geçirme ve düzeltme işlemine basitleştirmesidir.

Anahtar sözcükler: Bilgisayar, yazımöncesi, yazma, gözden geçirme ve düzeltme

I. INTRODUCTION

Nowadays, computers offer many specialties to use in the writing process. They have prompts to keep writers on the point, highlight possible spelling mistakes, and offer a communication channel for corresponding with friends and colleagues (Daiute, 1985). Regardless of the writing medium, all good writing moves through an authoring cycle that begins with thinking about or discussing the topic and making prewriting notes. After the prewriting, writers can work on writing as an initial draft. When writers revise and edit, they can take their peers', teachers', and editors' ideas about the papers (Strassman & D'Amore, 2002).

In the writing process, computer and computer software can be valuable tool for many students. In addition to this, word processing, speech recognition, speech feedback, word prediction, and other varieties of software packages may help students with learning disabilities to participate in well-developed classroom writing programs (Williams, 2002).

Hartley, Howe, and McKeachie (2001) determined the following possibilities when the word processors were used in the writing process:

- 1- Writing with a word-processor might not involve any changes in processes or in the resulting products.
- 2- Writing with a word processor might involve some changes in processes, but without any obvious effects on the resulting products.
- 3- Writing with a word-processor might involve some changes in processes, leading to some changes (hopefully improvements) in the resulting products (p. 142).

The main purpose of this paper is to examine and investigate the literature to see how computers can be used and are used in the writing process. To determine the possible use of computers in the writing process, last 25 years of journals were searched, and related books were examined. Daiute (1985) classified writing process under the three headings. These are prewriting, composing, and revising and editing. As this classification covers the whole writing process, related research can be examined under these headings.

II. PREWRITING

“Student writers sometimes have trouble getting started because they do not know what to say” (Daiute, 1985, p. 73). Writers may not have a reason to write or they may not know enough about the topics. They use different techniques during the writing process. Some of them do much of their writing, planning, and revising in their heads, and some of them make notes or outlines. Some writers may focus on grammar and phrasing. Some other writers, on the other hand, think on paper, and write freely (Daiute, 1985).

According to Daiute (1985), researchers Janet Emig, Lillian Bridwell, and others have described two composing styles. The first one is Mozartian style. In this kind of plan, writers write clearly, and revise their sentences while they are writing. The second composing style is Beethovenian. When writers follow this plan, they write quickly and freely, but make extensive revision. Many writers use both of these composing styles to complete the writing task.

Generally, writers prefer to plan before writing. “Planning is one of the most important processes in writing; researchers have found that it often accounts for more than half of a writer’s time” (Daiute, 1985, p. 77). Students can use computers effectively to plan their writing. They can prepare a list of words or ideas. Then, they can rearrange these words in related clusters. Students can do same activity with pencil and paper, but computers can offer them more features. For example, they can easily organize their list of words. Teachers can also make some prescribed sections, headings, and even introductory sentences on computers. Because of the flexibility of the word processing programs, students can make changes easily. For instance, *QUILL* program has a planner tool and this tool allows students to organize and share their ideas when they use the program (Bruce & Rubin, 1993). Computers can also be used as an outlining tool. Some programs, such as *ThinkTank*, can be used for outlining. Another program, *Write On! Plus: Middle School Writing Skills*, is an interactive CD-ROM that reinforces the writing process and skills through a collection of whole-language activities. During the prewriting phase, students are encouraged to brainstorm ideas; and list, cluster, and make outlines using such stimuli as excerpts from literature and prompts. During the writing segment, users explore different types of writing and point of views. In addition, they make some practices to improve their word processing and keyboarding skills. Students receive onscreen instruction and peer feedback in the editing phase (Daiute, 1985).

If students use such prewriting activities as concept maps, and outlines, they can break down the larger tasks into smaller ones. Many schools use Inspiration software as a graphic based flow-charting tool. Due to this program, students can organize maps, and define the relationships of the topics. If students use Inspiration software: They can make their outlines easily and use this outline as writing guides; they can work with pictures, video, audio, and voice recordings to get ideas down on paper; they can gain high motivation; and they can work with media and text (Castellani & Jeffs, 2001).

Eib and Cox (2003) investigated an action research about the Inspiration software. According to the authors, a middle level language arts teacher investigated the effects of technology-based prewriting activities on the quality of students' writing. “Her goal was for students to achieve increased proficiency in the organization strand of their writing and in computer use” (p. 54). She also wanted to increase students' participation in the writing process.

Students did several writing assignments using various Inspiration templates that the teacher created as prewriting tools. Twenty of her students' randomly selected writing samples were sent by her district to the Northwest Regional Educational Laboratory (NWREL) for scoring. She recorded each student's regular monthly writing scores and the writing scores for assignments using Inspiration for prewriting. The resulting data showed, “(a) increased proficiency in the organization strand of writing when students used Inspiration for prewriting, (b) ...students consistently scored higher on writing assignments that began with an Inspiration prewriting activity and that they completed work more often” (Eib & Cox, 2003, p.55).

The computer can be used as a prompting instrument. Due to question prompts, writers can receive clarification similar to a conversational experience. “Computer programs typically include comments or prompts for the people who use the programs and special purpose programs can be written to give writers explicit prompts for prewriting” (Daiute, 1985, p. 82). Eliza is accepted as a classic example of a computer prompting program. Eliza asks and answers the questions to create speech like conversation (Daiute, 1985; Turkle, 1997). “Researchers who have used such automatic prompting for prewriting report that prompts stimulate writers' thinking and keep them on track with a topic” (Daiute, 1985, p. 87). MacArthur (1996) stated that a special writing program was developed by Salomon and this program provided guidance before, during, and after writing. MacArthur claimed that the quality of writing produced by students using this prompting program was improved.

Bonk and Reynolds (1992) made prewriting and revision prompts available for students. They found that these prompts did not result in better writing for the middle school students because they did not access the prompts very often. In this research, college students used modified programs. These kinds of programs contain prompts for writers. The authors found that college students who used modified programs produced better essays than the college students who did not use modified programs. This result shows that higher ability writers use prompts more often than the middle school students do, and take advantage of the opportunities given them.

Bahr, Nelson, and Meter (1996) compared the effects of two computer-based writing tools on the story-writing skills of fourth through eighth grade students with language-related learning disabilities. The first tool was *FrEdwriter*. The prompted writing feature of this program allowed students to answer story grammar questions. Then, the users typed stories by using those responses as they planned. The second program was *Once Upon a Time*. This program allowed students to create graphic scenes, and type stories about those scenes. Nine students attended the research for 11 weeks and used each tool for half of the writing sessions. Research results showed that students who had less internal organizational ability benefited from the computer-presented story grammar prompts and wrote less mature stories when using the graphics-based tool. Students with relatively strong organizational skills wrote more mature stories with the graphics-based tool. The researchers also found that many of the students were not familiar with revising strategies and had to be prompted to make specific changes throughout the course of the project. The researchers concluded that software was not the only factor to develop students' story writing skills. Teachers, peers, instructional strategies, and computer-based tools all together have some important roles to help students' story writing. The researchers suggested that writing teachers should develop their management strategies, and make a balance between time spent planning and time generating actual text.

Murray (1980) found that good writers spend about 85% of their on-task effort for prewriting, 2% for drafting, and 13% for revising. Average and lesser writers spend virtually no on-task effort at prewriting, only about 2% for revising, and 98% for drafting.

Davidson-Shivers, Nowlin, and Lanouette (2002) investigated the effects of learning styles and multimedia structure on undergraduate writing performance in a prewriting skills lesson. Forty-two students in an undergraduate composition course at a regional university in the Southeast participated in the study. There were approximately equal numbers of male and females with the majority (74%) of them being freshmen. The multimedia lesson on brainstorming and outlining had two structures, fully prescribed and random.

The researchers administered questionnaires to collect data about demographics, students' attitudes toward computers, and their writing and computer skills. Results showed no significant difference in writing performance between the random and fully prescribed treatment groups. The researchers found that only 3% of the students had no prior experience on prewriting skills. On the other hand, majority of the students had three or more years experience on outlining and brainstorming. The researchers found an interesting result. At the time of the development of the lesson, instructors indicated that students did not use these prewriting skills while they were writing, but the majority of the students reported that they did. The researchers stated that the prewriting lesson might not be necessary for university students. These lessons can be more useful for lower level schooling or inexperienced writers than for advanced writers (Davidson-Shivers, Nowlin, & Lanouette, 2002).

Porcaro and Johnson (2003) wanted students to use graphic organizers during the prewriting phase. Students were also asked to bring the completed webs to the peer editing sessions. Researchers introduced different webs for students to help them organize their thoughts. In spite of this, many of the students had trouble understanding the web as an important part of the writing process. The authors gave students' ideas about the webs in their article. According to Jane, a student, webs did not help her because she did not know why she did the web. The researchers always reminded students to complete the webs first. After several weeks, the researchers made some progress. Some students understood why they were making webs. According to the authors, their biggest challenge was to convince students that the prewriting step of the writing process was critical.

In Strassman and D'Amore's (2002) article, students used electronic dialog to organize their topics. The second author provided students videotape and graphic organizers, and Venn diagram to help them organize their ideas. Also, she wanted students to write about the school uniforms. Students made their prewriting discussion by using electronic dialogue. After the electronic dialog, each student was given a printed copy of the dialogue. Students used these printouts to organize their topics. Each student cut, pasted, colored, and coded the printed dialogues to organize their thoughts. At the end of the activity, the online discussion became part of the writing process as a prewriting exercise.

III. COMPOSING

According to Daiute (1985), the composing process requires flexibility and speed to organize ideas. Word processors give writers more freedom than paper and pencil based writing because writers can compose text sequentially, follow an outline, or insert ideas at any point in a text. Writers can compose quickly on the computer and store the text for later changes. In addition, automatic insertion and editing commands can simplify the writers' task (Daiute, 1985).

Zeni (1990) stated that Joan Thomas, a teacher, began to give her eight graders word processor tutorial and some practice exercises requiring them to manipulate the cursor; do block movements; and add, delete, and replace text. In spite of this tutorial, when she wanted students to write a real paper, students behaved as if they had never touched a keyboard. Most of them decided to compose by hand. In the following year, she scrapped the tutorials and began with short, but original pieces of writing. Joan Thomas stated that there was no substitute for practice with real writing. Zeni (1990) believes that to help students complete meaningful texts even in a brief lab period, teachers should do some planning by hand, so that students can be ready to write in the lab.

Bruce and Peyton (1999) described an electronic communication software on a local area network to converse in writing. It is called *ENFI* (Electronic Networks for Interaction). This software was developed in 1985 by Trent Batson, Joy Kreeft Peyton, and English teachers at Gallaudet University. The software was developed for deaf students, classes for students learning English as a second language, and advanced rhetoric classes.

In *ENFI* classrooms, students and teachers have individual computer terminals and compose messages in a private window at the bottom of the screen. "When they press a key their message is immediately transmitted to all the screens in the class" (Bruce & Peyton, 1999, p. 2). Users' messages scroll up the screen in a continuous dialogue. Other students can see the name of the message sender on their screen. If participants miss the previous message they can scroll back to read them. The computer stores the entire discussion. Participants can print out the discussion and they can use different network channels. Discussion can occur between two participants or among the entire class. Teacher can see the writing of an individual or of a group student on a channel. In addition, when teacher make revisions other students can see this (Bruce & Peyton, 1999). According to the authors, *ENFI* has the following benefits:

1. *ENFI* would create new social dimensions in the writing classroom.
2. Students would write for authentic purposes and for real audiences.
3. Students would be immersed in a writing community.
4. Students would write collaboratively.
5. Students would write across the curriculum. (Bruce & Peyton, 1999, p. 5)

Hartley, Howe, and McKeachie (2001) studied the effects of new technology on writing by assessing whether or not people's writing styles and ways of thinking change when new technologies were introduced. The researchers compared three authors' materials that were written over a thirty-year period. During this time, there were great changes in the ways that they used technology to write. The research results indicated that the writing styles of each author was different. In addition, new technologies changed the authors' way to write. For example, in 1980's the authors used typewriter, but in 2000's they used word processors. In spite of this, new technologies did not change styles of the authors' products.

Hartley, Sotto, and Pennebaker (2003) conducted a similar study and found similar results. They studied the effects of new technology on writing by assessing whether or not an experienced writer's style of writing change when a new technology was introduced. In this research, the authors compared the 14 typed word-processed letters from Sotto (second author) to Hartley (first author) with 14 dictated word-processed letters. Instead of keyboard, Sotto used voice-recognition system to write dictated letters. The researchers could not find any significant differences between the average letter lengths, numbers of paragraphs written, and number of sentences used in each group of letters. Nor were there any significant differences in terms of readability, or typographical and grammatical errors. The results indicated that using the voice-recognition software had only marginal effects upon the written products.

MacCann, Eatsment, and Pickering (2002) investigated 14 to 15 year old students' computer versus pen and paper writing. Computer group, and pen and paper group had 57 and 52 students, respectively. Students answered three essay questions from a 1997 external English test. In the second part of the study, students selected their preferred method of response. Eighty-eight students selected computer, and 53 students selected pen and paper to write. They answered two essays questions from a 1999 external English test. In the first part of

the study, essays were marked holistically. In the second part of the study, they were marked analytically. The authors summarized the results of the study as follows:

- 1- In marking essays, there is a tendency for the handwritten format to be favoured over the word-processed format. The typed version of the response simply appears to be physically shorter.
- 2- When the pen and paper responses were word-processed, markers tended to award higher marks to the handwritten scripts. There were no significant differences in their mean scores for four of the five essays (MacCann, Easment, & Pickering, 2002, p. 186-187).

Mioduser, Lahav, and Nachmias (2000) closely observed the spelling performance of a student with low vision before, during, and after working with the *Pupil Computer System*. The participant was an eighth grader. She was severely visually impaired and relied mainly on the auditory and tactile channels. For reading and writing purposes, she required character enlargement up to 5 cm from a working distance of 13 cm by means of a closed-circuit television (CCTV) in class and at home. She was unable to read from the blackboard, and her work in class was based on auditory information or printed materials that she read with a CCTV. She also did word processing by touch-typing. As her work advanced, she started to replicate the spelling by herself before and during the actual typing of the target word. As a result of the study, her spelling performance was improved. The computer tools had the central role in this improvement. The computer and software had positive impact on her study. She concluded: "The letters and the sounds helped me very much ... I would like to continue my work with the computer." (Mioduser, Lahav, & Nachmias, 2000, p. 23-24).

In MacArthur's (1999) research, students used *Write Outloud* word processor to compose. Three students participated to the study. These students had severe spelling problems. They wrote daily journals in their classroom, alternating among handwriting, word processing, and word prediction with speech synthesis. In the word prediction condition, students wrote by using *Write Outloud* word processor. This word processor has speech synthesis and uses standard Macintosh conventions for editing, saving, and loading text. Student journal entries were scored for total number of words, and proportions of legible and correctly spelled words. The researchers did not find differences among conditions for legibility, and only one student consistently spelled more words correctly in word prediction condition. According to the researcher, the word prediction software was difficult for students to use.

Gupta (1998) investigated how a group of non-proficient writers used the spelling checker while they were composing their essays on the computer. Sixteen ninth-grade students were selected for the study from a Singapore classroom. These students were observed over a period of two months. In the first month, students wrote composition by hand and in the second month, they composed on computers. The researcher found that students used the spelling checker for word-correction, and word-generation. The researcher concluded that the spelling checker was useful for students whose writing ability was poor, and whose writing was blocked by the mechanical aspects of writing.

Stanford and Siders (2001) described an e-mail pen pal correspondence project and its positive effect on the writing skills of students with and without disabilities. This study paired university teacher-education students with public school students for pen pal, e-pal, and control groups as follows: (a) Pen pal learners corresponded by handwritten, hard copy letters to the university students, (b) E-pal learners used e-mail through the Internet to communicate with these same preservice teachers, (c) control group participants wrote to an imaginary correspondent and realized no feedback from their communication. The researchers conducted the study using 80 students, in grades 6-8, who composed friendly letters twice a week for an eight-week period, and they measured 32 writing samples. One of the most important results of this study was the improvement of all students' writing when involving e-mail, as compared to traditional pen pal correspondence. Total words generated for students both with and without learning disabilities increased over the eight-week period for the e-mail groups.

Nichols (1996) compared compositions written by 38 sixth graders using pencil and paper with those written using a word processor. The subjects of this study were two classes of sixth-grade students from a private school in Maryland. Half of the students wrote a story using the traditional pencil-and-paper approach, and the other half used a word processor. One month later, students wrote a second story and changed the writing approach they used earlier. The researcher used *Correct Grammar* program to analyze data. This analysis provided information about number of sentences, number of words, and reading ease. The test results indicated no significant difference between the pencil-and-paper compositions and the word-processed compositions.

However, students using computers wrote compositions with more words and sentences than students who used pencil and paper.

In Rowley and Meyer's (2003) study, the Computer Tutor for Writers (CTW) software was tested and evaluated. CTW writing tasks include identifying a topic, developing a thesis statement, forming coherent sentences, revising the essay, etc. The CTW tested on 471 students. The study results revealed that the CTW improved students' ability to follow a complete writing process. The results also showed that students who used CTW learned more than their peers in traditional writing instruction.

Daniels (2004) investigated the motivational effects of computer technology on writing instruction and performance of 5th graders. Instructors' responses towards the questionnaires showed that students' motivation and writing length is increased when computers integrated into the writing process. The study results showed that computers, teacher participation, extra curricular instruction, and personalized assistance all together affected students' motivation.

In Holdich and Chung's (2003) study, the effects of the computer tutor, which is called HARRY, are analyzed. HARRY is a computer tutor for narrative writing. Three children wrote control and HARRY assisted stories. Children received conversational prompts from HARRY before, during, and after writing their compositions. A control group also wrote stories without receiving assistance. The results of the study showed that children who used HARRY wrote better stories. HARRY also helped children to cope with several writing tasks by presenting different aspects of the writing process when requested.

Bailey, O'Grady-Jones, and McGown (1995) measured the effect of the introduction of computer clip art and graphical presentation software on the writing process. The effect of using these visuals on length and quality of compositions, student motivation, students' ability to organize thoughts into paragraphs, and their reactions to sharing compositions was investigated. Twenty-five second grade students attended to the daily writer's workshops. These workshops included brainstorming, story webbing, drafting, editing, publishing, and presenting. Teacher and student informal interviews, observations, a final group debrief, and analyses of the final papers were the data collection methods. The results revealed that integration of visuals into the process affected the length and quality of compositions positively. In addition, graphical presentation software helped students stay on task, and organize their ideas. According to the authors, this study is an indication that presentation software can be used as an educational tool to support visual and text integration for young children.

Lindblom-Ylanne and Pihlajamaki (2003) investigated whether the computer supported learning environment enhances Law students' shared essay-writing process. Data were collected from 25 Law students. Interview results showed that students were divided into two groups. First group was very enthusiastic and enjoyed sharing their drafts with their peers. Second group, on the other hand, found sharing unfinished drafts too threatening. According to the course teacher, writing a critical essay fostered students' active participation in the learning process. The study results also showed that the active use of computer supported learning environment was related to good essay grades.

IV. REVISING AND EDITING

There is no doubt that computers can simplify the revising process. Delete, insert, and move commands allow writers to rearrange text without recopy it. Due to this easy revising, some writers never consider a paper to be finished. According to Armstrong and Casement (2000), on-screen revising is easier, but the quality of the writing and revision depends on the nature of the changes that are made. They believe that on-screen revision do not improve students' writing in terms of the logic of its structure or clarity of expression.

In the editing process, writers pay attention to details such as spelling and punctuation. Word processing programs, spelling checkers, on-line dictionaries, and on-line style and grammar manuals are useful in this process (Daiute, 1985).

Sadowski (1991) worked as a teacher in West Milwaukee schools, and integrated computers into the writing classroom. In three weeks period, students used different computer software to develop an essay for a literature class. Students typed, saved, and printed their work in the lab. Then, they used *Writer's Helper* and the *Revising Tools* to analyze and improve their essays. Teachers set a minimum of six options to be used from *Writer's Helper*. This program allowed students to outline their document, check for paragraph coherence, and analyze their sentence lengths or word frequencies. In addition, the audience menu allowed students to check their diction level, transitions, prepositions, references, and 'to be' verbs. According to the project results: (a) Revising Tools showed students sentence variation, word choice, transitions, topic sentence coherence, and

unity, (b) This program also showed students how these elements contribute to the overall readability, (c) Most of the students made editing easily on the computer, (d) Students helped each other to solve software related questions.

New (1999) observed the revision strategies of five students of French enrolled in one semester long intensive intermediate college French course. The participants completed a two-part writing task with the aid of the software program, *Systyme-D*. The program recorded the lexical, grammatical, and thematic information that students access while writing. The researcher analyzed the compositions, computer records, and videotapes of writing sessions. In addition to this, students responded a postwriting questionnaire. These questionnaires were analyzed to find how and when students revised their texts. According to the researcher, the surface-level revisions increased when students write on the computer. This study also revealed that both the self-reported good and poorer advanced intermediate writers did not revise substantially or spontaneously for meaning when writing in French.

Thorson (2000) also studied about the first and foreign language. In this study, the participants were students at the University of Arkansas at Little Rock enrolled in German classes at two different levels, an intermediate language course and an upper-level culture course. Students in each course were given four in-class writing assignments, two in English and two in German. They were expected to compose directly on the computer during the class time. When assigning the topics, attention was also given to genre. Two different tasks were assigned that required different genres, a letter to an Austrian pen pal, and a newspaper article dealing with course material. Students were expected to compose directly on the computer using the word processing program *J-Edit*. They were given 30 minutes to write the letters and 40 minutes to write the articles, and were allowed to use of a dictionary and in the case of the German culture course their textbook. The results of this study indicated that, (a) students tended to write less, but revised more when they composed in German, and (b) students tended to revise more in the English article than in the English letter. This result indicated that genre plays an important role in the first language writing, but its effects on foreign language writing remain unclear.

Figueredo and Varnhagen (2006) investigated whether spelling and grammar checkers distract students from making revisions, and whether students manage revision differently when they use checkers and dictionaries. Twenty-five freshman and 20 graduate students revised unfamiliar and erroneous essays, one essay on computer with spelling and grammar checkers and the other essay with a dictionary. The results showed that all students corrected more surface errors with the aid of spelling and grammar checkers than they corrected with the dictionary. The authors stated that because dictionary condition students could not enter the checkers, they had difficulty detecting the surface errors.

V. CONCLUSION

Computers can make writers' job easier in the writing process. In the prewriting phase, students can use computers effectively to plan their writing. If students use prewriting activities such as concept maps, and outlines, they can break down the larger tasks into smaller ones. Many schools use Inspiration software as a prewriting tool. Students prepare outlines and use them as a writing tool. Computers are very attractive for students. Due to this reason, they can spend so much time for prewriting activities. Teachers should develop their management strategies and make a balance between time spent for planning and time generating actual text. In the prewriting phase, the biggest challenge is to convince students about the usefulness of the prewriting step.

In this literature review, some research results showed that higher ability writers (college students) use prompts more often than middle school students use them, and take advantage of the opportunities given by software. The results also indicated that software should not be the only factor to develop students' writing skills. Teachers, peers, instructional strategies, and computer software all together have some important roles to help students.

In the composing phase, word processors can give writers more freedom than paper and pencil based writing because writers can compose text sequentially, follow an outline, or insert ideas at any point in a text. The review results showed that researchers could not find significant difference between the pencil-and-paper and word processed compositions. However, students become more prolific when they use computers in their writing.

Computers can simplify the revising process. Revising on the computer is easy, but quality of the revising depends on the nature of the changes that are made by students. In the editing process, writers pay attention to details such as spelling and punctuation. Word processing programs, spelling checkers, on-line dictionaries, on-line style and grammar manuals are useful for the editing. Students make most appropriate revising when they use online prompting and word processing.

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THE USE OF VIDEO AS AN AUDIO-VISUAL MATERIAL IN FOREIGN LANGUAGE TEACHING CLASSROOM

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ABSTRACT

In recent years, a great tendency towards the use of technology and its integration into the curriculum has gained a great importance. Particularly, the use of video as an audio-visual material in foreign language teaching classrooms has grown rapidly because of the increasing emphasis on communicative techniques, and it is obvious that the use of video is a great help for foreign language teachers in stimulating and facilitating the target language. Keeping all this in mind, the purpose of this article was to provide the required information for foreign language teachers (FLT) so that they can make use of video efficiently in the classroom. Reasons for video implication in FLT classroom and teacher's role in this process have been revealed along with some practical techniques for video implication.

Key Words: Video, activity, teaching foreign language, techniques

YABANCI DİL ÖĞRETİMİNDE GÖRSEL-İŞİTSEL DERS ARACI OLARAK VİDEONUN KULLANILMASI

ÖZET

Son yıllarda teknolojinin her alanda kullanılması ve bunun günlük hayatımızın ayrılmaz bir parçası olması yadsınmaz bir gerçektir. Ders araç ve gereçlerinin kullanımında teknolojiyi gözardı etmek olanaklı değildir. Bu yüzden ki teknolojinin kullanımı ders müfredatlarında yer bulmasına yönelik çalışmalar büyük önem kazanmıştır. Ayrıca, yabancı dil öğretiminde iletişimsel tekniklerin etkisinin artması hedef dili öğretmeyi kolaylaştırıcı ve hızlandırıcı görsel-ışitsel araç olarak videonun katkısı bilinmektedir. Bu makalede yabancı dil öğretmenlerinin videoyu hedef dili etkili bir şekilde öğretebilmesine yönelik öneriler, ve bu süreç içerisinde yabancı dil öğretmenlerinin rolü ve önemli teknikler ve etkinlikler sunulmaktadır.

Anahtar Kelimeler: Video, etkinlik, yabancı dil öğretimi, teknikler

I. INTRODUCTION

Language learning is a complex process: in this process, language teachers can't be far away from the technology, which is the application of scientific knowledge to practical tasks by organisations that involve people and machines. It is a fact that technology cannot be separated from society. Machines have social origins and they emerge from the needs of society. Therefore, teachers need technologies relevant to the teaching-learning situation. If the educationalists want children to be technologically equipped, all the changes and preparations ought to be done within the curriculum, school, architecture, teaching organisation and finance.

It is a well-known fact that audio-visual materials are a great help in stimulating and facilitating the learning of a foreign language. According to Wright (1976:1) many media and many styles of visual presentation are useful to the language learner. That is to say, all audio-visual materials have positive contributions to language learning as long as they are used at the right time, in the right place. In language learning and teaching process, learner use his eyes as well as his ears; but his eyes are basic in learning. River (1981:399) claims that it clearly contributes to the understanding of another culture by providing vicarious contact with speakers of the language, through both audio and visual means.

One of the most appreciated materials applied to language learning and teaching is, of course, video. A recent large-scale survey by Canning-Wilson (2000) reveals that the students like learning language through the use of video, which is often used to mean quite different things in language teaching. For some, it means no more than replaying television programmes on a video recorder for viewing in class or private study. For others, it implies the use of a video camera in class to record and play back to learners their activities and achievements in a foreign language teaching. But our concern here is to present the use of video in language teaching most effectively as a visual aid presenting the target language naturally. It is a fact that most students who have taken English courses formally remain insufficient in the ability to use the language and to understand its use, in normal communication, whether in the spoken or the written mode. The problem arises not from the methodology itself but from the misuse or incomplete use of it. That is to say, teachers still evaluate student performance according to the sentence structure and situational settings. In addition, teachers have to take into

consideration their performances in terms of communicative acts. But this not necessarily mean that teachers should pay full attention to only communicative acts in the preparation and presentation of language teaching materials.

In recent years, the use of video in English classes has grown rapidly as a result of the increasing emphasis on communicative techniques. Being a rich and valuable resource, video is well-liked by both students and teachers (Hemei, 1997:45). Students like it because video presentations are interesting, challenging, and stimulating to watch. Video shows them how people behave in the culture whose language they are learning by bringing into the classroom a wide range of communicative situations. Another important factor for teachers that makes it more interesting and enjoyable is that it helps to promote comprehension. We know that deficiencies in vocabulary can make even a simple task very difficult for our students. Video makes meaning clearer by illustrating relationships in a way that is not possible with words, which proves a well-known saying that a picture is worth thousand words. Two minutes of video can provide an hour of classroom work, or it can be used to introduce a range of activity for five minutes. A ten-minute programme can be useful for more advanced students. Less advanced students may wish something much shorter because their limited command of the language also limits their attention span.

It is obvious that non-native speakers of a language rely more heavily on visual clues to support their understanding and there is no doubt that video is an obvious medium for helping learners to interpret the visual clues effectively. According to a research, language teachers like video because it motivates learners, brings the real world into the classroom, contextualizes language naturally and enables learners to experience authentic language in a controlled environment. Moreover, in this issue Arthur (1999) claims that video can give students realistic models to imitate for role-play; can increase awareness of other cultures by teaching appropriateness and suitability.

II. REASONS FOR VIDEO IMPLICATION IN FLT CLASSROOM.

A great advantage of video is that it provides authentic language input. Movies and TV programmes are made for native speakers, so in that sense video provides authentic language input (Katchen,2002). That is to say, it is obvious that the practical implications of video in the classroom in any classroom environment it can easily be used; teacher can step in the process whenever he wishes; he can stop, start and rewind to repeat it for several times where necessary. Any selected short sequence from the programme can be utilized for intensive study. To pay special attention to a particular point in the programme it is possible to run in slow motion or at half speed or without sound.

Besides, the learner can concentrate on the language in detail and interpret what has been said, repeat it, predict the reply and so on. The learner can also concentrate in detail on visual clues to meaning such as facial expression, dress, gesture, posture and on details of the environment. Even without hearing the language spoken clues to meaning can be picked up from the vision alone. Using visual clues to meaning in order to enhance learning is an important part of video methodology.

The other point that should be focused is that in foreign language to interpret attitude is very difficult owing to the fact that the listener concentrates himself on the verbal message, not the visual clues to meaning. Video gives the students practice in concluding attitudes. The rhythmic hand and arm movements, head nods, head gestures are related to the structure of the message. Moreover, the students have a general idea of the culture of the target language. It may be enjoyable for the learners to have something different for language learning apart from the course books and cassettes for listening.

On the other hand, besides advantages, the disadvantages of video should also be taken into account. The main disadvantages are cost, inconvenience, maintenance and some cases, fear of technology. Additionally, the sound and vision, quality of the copies or home-produced materials may not be ideal. Another important issue in this case is that the teacher should be well-trained on using and exploiting the video. Otherwise, it becomes boring and purposeless for students.

III. TEACHER'S ROLE

Just as in many English teaching situations, the teacher plays a key role in using the video as an aid for language teaching for s/he has the prime responsibility for creating a successful language learning environment. The teacher should get use of the power of video films. At his point, video should never be considered as a medium which rivals or overshadows the teacher, but it is a useful aid for him. That is, it can not replace the teacher because it can only teach things which are recorded on, and this makes the learning foreign language attractive. It is certain that the teacher is as effective as the video film in teaching through video, because he is the only

person who enables the learners to comprehend what they watch and hear by using some of the communicative techniques. The teacher can be a controller, an assessor on organiser, a prompter and a participant as well.

The teacher is a controller because he or she is the only person who controls not only what the learners do but when they speak as well while they are watching the video film. The teacher is also an assessor because he or she assesses the learner’s work in order to see how well they are performing. The teacher should wait until the end of the activity and then he must evaluate the learner’s outputs. Furthermore, the teacher is an organiser because he needs to be so. He should be a good organiser in teaching the foreign language through video, and should know exactly what to lead to success. He should not give useless information or confusing instructions to the learners in order not to waste a lot of time. He should clearly explain what they are going to watch and what their task is.

The other role that the teacher carries is being a prompter because he acts as a prompter. When there is a silence viewing or what the learners are confused about what to do next, he is expected to encourage learners participate. The teacher is a participant because he participates in the activities while teaching a foreign language through video. He knows the materials and all the details about them, which help the learners feel comfort and facilitates learning. Considering these factors in mind, the teacher should prepare to promote active viewing and facilitate successful language learning. This requires being familiar with the video materials before they are used in class. The teacher should develop a plan for each video unit and encourage active viewing. To aid comprehension, he should prepare viewing guides which are easy and related to the language level of the students.

IV. SOME PRACTICAL TECHNIQUES FOR VIDEO IMPLICATION

It is easy for a group of imaginative teachers experienced in using video in ELT to sit down and draw up a list of different ways of using video in the classroom. There are many accounts where interesting video lessons are reported in the literature. Canning-Wilson (2000) suggests that as F/SL educators we must not loose sight of the educational purpose it has in the language classroom although it may be a popular tool to use with students. To get a successful result in language teaching using the video as an aid there are some techniques that should be benefited by both teacher and learner.

Table1. Some practical techniques for video implication in classroom

TECHNIQUE	CLASSROOM IMPLICATION
ACTIVE VIEWING	Active viewing increases the students’ enjoyment and satisfaction and focuses their attention on the main idea of the video presentation. So, it is necessary for students to take an active part in video teaching presentations. Before starting the presentation the teacher writes some key questions on the board about the presentation so that the students get an overview of the content of it. After viewing the questions the students answer the questions orally, or the students may take notes while viewing. For more detailed comprehension students are provided a cue sheet or viewing guides and let them watch and listen for specific details or specific features of language. However, it should be kept in mind that the level of the students should be taken into account and adapt the technique according to their levels.
FREEZE FRAMING AND PREDICTION	Freeze framing means stopping the picture on the screen by pressing the still or pause button. Video gives us an additional dimension of information about the characters’ body language, facial expressions, emotions, reactions, and responses. Teacher freezes the picture when he or she wants to teach words and expressions regarding mood and emotions, to ask questions about a particular scene, or to call students’ attention to some points. By freezing the scene the students can be asked what is going to happen next. So they speculate on what will happen in the next act. Freeze framing is excellent for speculation. This activity also fires the imagination of the students by leading them predicting and deducing further information about the characters.

SILENT VIEWING	As video is an audiovisual medium, the sound and the vision are separate components. Silent viewing arouses student interests, stimulates thought, and develops skills of anticipation. In silent viewing, the video segment is played with the sound off using only the picture. This activity can also be a prediction technique when students are watching video for the first time. One way of doing this is to play the video segment without the sound and tell students to observe the behaviour of the characters and to use their power of deduction. Then press the pause button at intervals to stop the picture on the screen and get students to guess what is happening and what the characters might be saying or ask students what has happened up to that point. Finally, video segment is replayed with the sound on so that learners can compare their impressions with what actually happens in the video.
SOUND ON AND VISION OFF ACTIVITY	This activity can be interesting and useful to play a section of a video unit and remove the visual element from the presentation by obscuring the picture so that students can hear only the dialogue but unable to see the action. Through this activity the students predict or reconstruct what has happened visually depending only what they hear.
REPETITION AND ROLE-PLAY	When there are some difficult language points in the video unit, closely repetition can be a necessary step to communicative production exercises. A scene on video is replayed with certain pauses for repetition either individually or in chorus. When students have a clear understanding of the presentation, they are asked to act out the scene using as much of the original version as they can remember. When students become confident with role playing and are sure of vocabulary and language structures, more creative activity can be introduced in which they are asked to improvise the scene to fit their views of the situation and the characters they are playing. Role-play involves students as active participants. As each student plays the assigned role, s/he becomes more and more involved. This activity also helps students to better understanding their own behaviour and to be more able to respond in a positive way to various human relationships. In other words, role playing is a good communicative activity and true preparation for real-life situations. It gives a chance to students to apply what they are learning.
REPRODUCTION ACTIVITY	After students have seen a section, students are asked to reproduce either what is being said, to describe what is happening, or to write or retell what has happened. This activity encourages students to try out their knowledge. Students will benefit from experimenting in English, even though it is challenging and mistakes are made. As it seems a bit difficult to perform, guidance, help and reassurance may be needed.
DUBBING ACTIVITY	This activity can be done when students have the necessary language competence. In this activity, students are asked to fill in the missing dialogues after watching a sound-off video episode. It is interesting and enjoyable for the students to complete a scene from the video by dubbing.
FOLLOW-UP ACTIVITY	It is important that a video presentation should lead to follow-up activity as the basis for further extended oral practice. Discussion stimulates communication among students, and it helps to achieve communicative practice. With this activity students have an opportunity to develop sharing and co-operative skills.

V. CONCLUSION

Languages are not fixed but constantly changing, so is the media; television, radio and newspaper which are an extraordinarily rich source of language in use. In order to expose foreign language learners to the target language the use of technology need to be exploited in the classroom as much as possible. For that reason a great tendency towards the use of technology and its integration into the curriculum developed by the foreign language teachers has gained a great importance. Particularly the use of video has received increasing attention in recent studies on technology integration into teacher education curricula (Özkan, 2002:1)

It is an undeniable fact that video is one of the best materials that enables students to practice what they have learned through various techniques. As Canning-Wilson (2000) describes video, at the most basic level of instruction, is a form of communication and it can be achieved without the help of language, since we often interact by gesture, eye contact and facial expression to convey meaning. Thus it is clearly true such kind of

materials present complete communicative situations by means of the dynamic, immediate and accessible combination of sound and vision. The students contextualize the language they have learnt. In other words, they can see and hear the speakers in dialogues; their ages, their sex, perhaps their relationship one to another, their way of dressing, social status, what they are doing and perhaps their feelings. Moreover, as previously slightly mentioned, paralinguistic features such as facial expressions or hand gestures provide aural clues of intonation. The learners can also see the setting of the communication on the screen, so they can clarify whether the situation is formal or informal.

Methodologically speaking, watching video films should be different from passive television viewing. So, the teacher should encourage the learners to watch the films actively, by using the supplementary materials, such as worksheets prepared by him or supplied with the films. The learners should participate in the activities, if possible, they themselves set up some projects in the target language, by recording their own activities such as speaking, interviewing, reporting etc. Shortly, the role of the learner is not to be a passive viewer but an active member in the triangle of the video, the teacher and the learner.

To reach successful and effective results with teaching language through video, the learners and the teachers should perform their tasks perfectly. Moreover they should be informed of the new methods and techniques in FLT. To do this, seminars can be organised. A group of teachers and experts should prepare video cassettes, which will enable the schools to obtain them easily. These cassettes should be modern, interesting and in parallel with the syllabus. In a word, it can be concluded that the use of technology is nowadays inevitable in the classroom. When used appropriately, video is quite beneficial for learners and teachers as long as they are considered only as mere entertainment, but carefully chosen films can be a useful and extremely motivational teaching tool for both practicing listening skills and stimulating speaking and writing (Katchen, 2002).

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APPENDIX 1.

Video Materials Designed for Language Teaching

FUNCTION	AIM	VIDEO MATERIALS
Presenting Language	To present examples of language in use in an appropriate context and facilitate learning the target language as a supplementary material.	Follow Me, A Weekend Away, A Week by the Sea, The Story of English, American Tongues, Talking Proper...etc.
Presenting the Country and its Culture	To present examples of culture and way of life of the target language.	Focus on Britain, Welcome to Britain...etc.
Telling Stories	To present language with the help of the specially designed video materials including stories, tales etc, which attract attention and start discussion in the classroom.	Sherlock Holmes, Adventures of Charlie McBride, ...etc.
Using the sources of Non-ELT materials	To present the language without having any teaching purpose using the authentic sources of non-elt materials produced for the native speakers such as cartoons, feature films, documentaries, news, current affairs programmes etc.	Tom and Jerry, Disneyworld Cartoons, World Report, Lary King Live (CNN) ...etc.

BİR ÖĞRETİM MATERYALİ OLARAK TARİHSEL ROMANA YÖNELİK ÖĞRENCİ VE ÖĞRETMEN GÖRÜŞLERİ

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ÖZET

Tarih eğitiminde tarihsel romanların önemli bir rol oynadığı bilinmektedir. Çünkü tarihsel romanlar, orta öğretimde (lise) okuyan ergenlik dönemindeki gençlerin ulusal bir tarih bilinci kazanmaları için etkili birer araçtır. Bu çalışmada, tarihsel romanlara yönelik öğrenci ve öğretmen görüşleri ele alınmıştır. Bunun için survey veri toplama tekniği tercih edilmiştir. Veri toplama araçları olan öğrenci ve öğretmen anketleri, araştırmacı tarafından geliştirilmiştir. Anketlerin hazırlanmasında ilgili literatürden yararlanılmıştır. Anketler, Kırşehir il merkezinde bulunan M. Akif Ersoy, Anadolu Güzel Sanatlar ve İmam Hatip Liseleri 1., 2. ve 3 sınıflardan toplam 223 öğrenciye ve Kırşehir il merkezinde görev yapan toplam 30 tarih öğretmenine uygulanmıştır. Ancak, öğrenci örnekleminde sadece 87 kişinin tarihsel roman okuması, örneklemin değişmesine yol açmıştır. Bu kişilerden alınan verilerin çözümlenmesinde yüzdeler analizi, t testi ve tek yönlü varyans analizi teknikleri kullanılmıştır. Araştırma sonucunda, hem öğrenciler hem de öğretmenler tarihsel romana yönelik olumlu görüş bildirdikleri görülmüştür. Tarihsel romana yönelik bu görüşlerin olumluluk derecesini öğrenciler için tarihsel film izlemeyi sevme iken öğretmenler için tarihle ilgili kitap okuma durumunun arttırdığı bulunmuştur. Ancak, öğretmenlerin tarih derslerinde, öğrencilere tarihsel roman önermeleri noktasında yetersiz oldukları görülmüştür. Bunun nedenleri, hem öğretmenlerin Türkiye’deki tarihsel roman potansiyelinden habersiz olmalarına hem de bir öğretim materyali olarak tarihsel romanlardan nasıl yararlanılması gerektiğini bilmemelerine bağlanabilir. Bunun yanında, bazı öğretmenlerin tarihsel romanların yararları gibi zararlarının da olabileceğini belirttikleri görülmüştür. Bu zararlardan en çok üzerinde durulanları ise “tarafı bilgi sunması” ve “abartılı anlatımı nedeni ile gencin tarihsel gerçeğe olan inancını sarsmasıdır.

Anahtar kelimeler: tarih eğitimi, tarih öğretimi, tarihsel roman, sosyalleşme, özdeşleşme, ulusal bilinç.

STUDENTS’ AND HISTORY TEACHERS’ OPINIONS TOWARDS HISTORICAL NOVEL AS A TEACHING MATERIAL

ABSTRACT

As historical novels have effective meanings to render a united consciousness for the high school students at adolescence period, historical novels have an important role in history teaching. In this study, students’ and teachers’ opinions for historical novels were studied. Students’ and teachers’ questionnaires were developed by the researcher. The questionnaires were administered to a total of 223 students (responses reduced the sample to 86 students) from the 9th, 10th. and 11th grades of three high schools in Kırşehir city center and to 30 history teachers working in Kırşehir city center. Percentage analysis and t test and one-way Anova analysis techniques were conducted. The data revealed that both students and teachers have stated their opinions as positive for historical novels. It was found that these positive opinions of students are affected by watching historical films while it has increased the level of reading history related books for teachers. However, the teachers are inadequate at suggesting historical novels to their students in practice. Its reasons are that both teachers’ unawareness of the potential historical novels in Türkiye and their lack of knowledge of how to benefit from these novels as a teaching material. Besides, the teachers pointed out that historical novels might have disadvantages as well as advantages. The most emphasized disadvantage was “one-sided knowledge presentation” and “to weaken the history belief of the young because of its exaggerated explanation”.

Keywords: education of history, history teaching, historical novel, socialization, identification, united consciousness.

I. GİRİŞ

Tarih eğitiminde okul dışı etkinliklerin önemi bilinmektedir. Safran ve Ata’nın 1998’de yayımladıkları “Okul dışı tarih öğretimi” adlı çalışma bu konuda fikir vericidir. Çalışmada okuldaki tarih eğitimini destekleyici olarak okul dışında gerçekleştirilebilecek tarihsel çevre etkinlikleri ele alınmıştır. Buna göre bu etkinliklerden biri de tarihsel roman okumasıdır. Çünkü tarihsel romanlar; gençlerin ders dışında bazı toplumsal değerleri kazanmalarında, ulusal bir tarih bilincine ulaşmalarında, tarihi eğlenceli bir biçimde öğrenmelerinde önemli bir işleve sahiptir. Bunun yanında, genç okuyucuların macera beklentilerini tatmin etmeleri ve bu gerçek dünyadayken aynı zamanda bir hayal âleminde yaşamalarına imkân tanımaları açısından da değerlidir.

Tarihsel romanların öğretimsel açıdan belki de ilk göze çarpan yararı, “tarih alanını okuyucu açısından merak edilir” kılmasıdır. Çünkü Harris ve Austin’in de (2000; 22) belirttikleri gibi “tarihsel roman okumanın, bütün gençlerin davranışlarını kapsayan bir derecede bilgi sunmaları yerine, tarihin anlaşılmasına yönelik ilgiyi uyanık tutması” beklenir. Ayrıca tarihsel romanlar genç okuyucuya, tarihsel bir problemin bir kısmını sunarak onun merakını uyandırmak suretiyle onu, tarihi daha detaylı okumaya teşvik eder. Tarihsel roman okuyan genç okuyucular “yalnız bir değil birçok tarihin var olduğunu” görürler. Böylelikle tarihsel romanlar, okuyanların tarihi anlamalarında bir yardımcı olarak bazı olayların farklı perspektiften farklı değerleri, bazı anlaşmazlıkların ve gerçeklerin farklı içeriklerinin olabileceğini öğrenmelerini sağlar (Harris ve Austin, 2000; 23). Bunun yanında tarihsel romanlar, öğrencilerin tarih konusunda bazı küçük araştırma yapmaları noktasında da teşvik edici olabilir. Yani, bir tarihsel romanın açıkça değerlendirilmesi, öğrencilerin gerçek (tarihsel) bir problemin çözümü için araştırma yapmalarına ve konuyla ilgili bazı tasvirlerde bulunmalarına ilişkin bir bağlam sunar (Davis ve Hunter, 1990; 603).

Tarihsel romanların tarih derslerinde akademik başarıya katkı sağlamasına ilişkin Amerika’da yapılmış bir araştırma, bu öğretim araçlarının önemini açıkça ortaya koymuştur. “*Edebiyat Aracılığıyla Tarih ve Okuma Eğitimlerini Bütünleştirmeye Yönelik Bir Araştırma*” adını taşıyan, Smith ve diğerleri (1992: 370-375) tarafından yapılan bu çalışmada önce, tarihsel romanların bazı tarihsel kavramları ve okuma becerilerin öğretimini destekleyebileceklerine dair literatür bilgileri sunulmuştur. Daha sonra 1989-1990 öğretim yılında bir eğitim/öğretim yılı kapsayan bu araştırma sonucunda, tarihsel romanların da kullanıldığı deney grubunun, kontrol grubuna göre Amerikan Tarihine ilişkin % 60 oranında daha fazla bilgiye sahip olduğu bulunmuştur.

Tarihsel romanların, özellikle ergenlik dönemini yaşayan gençlerin sosyalleşme süreçlerinde, onlara benimseyebilecekleri bir model sunma noktasında yararlı olabileceği bilinmektedir. Ayrıca tarihsel romanların, hem bu yaş grubu gençlerin ilgilerine uygun temalar sunarken hem de insan yaşamına ilişkin detayları tarih öğretimine aktarmak suretiyle tarih alanını insanileştireceği söylenebilir. Bu bağlamda, konusu, şahısları ve olayın geçtiği dekorun tarihsel olması yönleri ile tarihsel sayılabilecek, önceki bir çalışmada “tematik” olarak adlandırılan (Şimşek, 2005) sanat değeri yüksek olmayan bu romanların, kitlelere ve gençlere tarihi sevdirdiği için tarih öğretimi açısından büyük önem taşıdıklarını burada tekrar vurgulamak mümkündür.

Tarihsel romanların eğitim amaçlı okutulması ve öğretim materyali olarak yararlanılması üzerine İngilizce literatürde zengin bir bibliyografya ile karşılaşılmasına rağmen, Türkiye’de az çalışma olduğu görülür. Bunlardan konuya ilişkin derli toplu bilgi ve düşünce sunması açısından yine Ata’nın 2000 yılında yapmış olduğu “Tarih öğretiminde bir araç olarak tarihî romanlar” adlı çalışması ile Şimşek’in 2006’da yayımlanan “Tarihsel romanın eğitimsel işlevi” adlı çalışmalarıdır.

Türkiye’de çok az çalışma olmasına rağmen, İngilizce literatürde çok çalışma olmasının nedeni, Batı’da sosyal bilim alanlarında edebiyat ürünlerinin birer eğitim aracı olarak uzun zamandır düşünülüyor olmasındandır. Batı’da bu bağlamda bilinen en eski fikir Fransız düşünür Rousseau’nun, Emile (1762) adlı kitabında görülmüştür. Rousseau kitabında, La Fontaine’nin Fabl’ları yerine Robinson Kruze’nun okutulmasını önermektedir. Alman pedagoğ Herbart ise, 19. yüzyılın başında, öğretmenlerin çocuklarda olumlu sosyal tutumlar geliştirmek için tarihle, edebiyatı ilişkilendirmeleri gerektiğini söylemiştir (Ata, 2000: 159; Mc Gowan and Guzzetti, 1991: 36). Konuyla ilgili olarak İnternette ulaşabildiğimiz en eski çalışma ise *Parents’ Review* adlı dergide H.B. kısa ismiyle yayımlanan “History: history and fiction” adını taşımaktadır. Bu çalışmanın 1894’te yayımlanmış olduğu düşünülürse, herhalde İngilizce literatürdeki bu zenginlik de anlaşılabilir. Dünya’da tarihsel romanın ilk örneklerini verdiği kabul edilen Sir Walter Scoot’un İngiliz literatüründe yazmış olmasını da bu zenginliğin nedenlerinden biri olarak saymak mümkündür.

İngilizce literatürde pek çok araştırmacı tarafından, eğitimsel/öğretimsel önemi çok yönlü olarak incelenen tarihsel romanların, tarih eğitimi/öğretiminde bir materyal olarak ele alınmasının, hem öğretici (öğretmen) hem de öğrenici (öğrenci) açısından nasıl bir değer taşıdığına Türkiye örneğinde bakmanın yararlı olacağı düşünülmektedir. Çünkü öğretim etkinliklerinde öğrencilerin ve öğreticilerin konuya yaklaşımları, etkileri ve katkılarının sürecin sonucunu belirlediği bilinmektedir. Bu sebepten bu çalışmada, eğitim öğretim açısından böylesine önemli katkılarının olacağı belirtilen tarihsel romanlara yönelik öğrenci ve öğretmenlerin neler düşündükleri ele alınmıştır.

II. ARAŞTIRMANIN PROBLEMİ

Tarihsel romana yönelik lise öğrencilerinin ve tarih öğretmenlerinin görüşleri nelerdir?

Araştırmanın Alt Problemleri

1. Öğrencilerin tarihsel romana ilişkin görüşleri,
 - a. okul,
 - b. cinsiyet,
 - c. okudukları sınıf seviyesi,
 - d. tarih konulu film izleme durumları,açısından anlamlı bir biçimde farklılaşmakta mıdır?
2. Öğretmenlerin tarihsel romana ilişkin görüşleri,
 - a. cinsiyet,
 - b. mezun olduğu okul,
 - c. hizmet süreleri (kıdem),
 - d. kitap okuma durumları,
 - e. süreli yayın takip etme durumlarıaçısından anlamlı bir biçimde farklılaşmakta mıdır?

III. YÖNTEM

Bu çalışma, öğrenci ve öğretmenlerin bir konuya ilişkin düşüncelerini belirlemeye çalıştığı için alan araştırması niteliğindedir. Bir durum tespiti söz konusu edildiği için betimsel bir yöntem benimsenmiştir. Araştırmanın uygulaması, araştırmacı tarafından literatür taranarak oluşturulmuş anketler ile veri toplanması şeklinde gerçekleştirilmiştir. Anketlerde Likert tipi soruların yanında açık uçlu sorulardan da yararlanılmıştır. Bu yüzden araştırmada, literatürde anıldığı gibi survey veri toplama tekniği ve doküman analizi tekniği kullanılmıştır.

Araştırmanın Evren ve Örneklemi

Bu araştırmada, araştırmacı tarafından ayrı ayrı hazırlanmış olan veri toplama araçları ile hem öğrencilerin hem de öğretmenlerin tarihsel romana yönelik düşünceleri ele alındığı için, araştırmanın öğrencilere ve öğretmenlere yönelik iki farklı evreni ve örneklemi ortaya çıkmıştır. Bunlardan öğrencilerin evreni olarak, Kırşehir merkezinde bulunan Mehmet Akif Ersoy Lisesi, Anadolu Güzel Sanatlar Lisesi ve İmam Hatip Lisesi seçilmiştir. Örneklemi ise, bu liselerin 1. 2. ve 3. sınıflarından rastgele seçilen birer şube öğrenci oluşturmuştur. Öğretmenlerin evrenini, Kırşehir il merkezinde bulunan 30 tarih branşı öğretmeni oluşturmuş ve bu evrenin tamamına ulaşılmıştır.

Öğrenci görüşlerini almak amacıyla 2002-2003 öğretim yılında Mehmet Akif Lisesi'nden, 2003-2004 öğretim yılında ise Kırşehir Anadolu Güzel Sanatlar Lisesi ile Kırşehir İmam Hatip Lisesi öğrencilerine anket uygulanmıştır. Öğrencilerden tarihsel romana ilişkin görüşleri istendiği için öncelikle tarihsel roman okumuş olmaları gerekliliği göz önüne alınarak anketin başlangıcında “Tarihsel roman okuyup-okumadıkları” sorusuna yer verilmiştir. Bu sebepten anket, toplam 223 öğrenciye uygulanmış olmasına rağmen, bunlardan 79'unun “hiç tarihsel roman okumadığı” için uyarıyı dikkate alarak anketin diğer sorularını boş bıraktıkları, 56 tanesinin ise tarihsel roman okumadıklarını belirttikleri halde anketin diğer sorularını cevapladıkları görülmüştür. Bunun üzerine, sadece tarihsel roman okuyanların anketleri dikkate alınmıştır. Böylece, 223 öğrencilik örneklem grubu, 87 öğrenciye inmiştir. Uygulama sırasında kendisine anket verilen öğrenciler ve bunlardan kaçının değerlendirilmeye alındığı Tablo 1.den de takip edilebilir.

Tablo 1. Öğrencilere Yönelik Araştırmanın Örneklemi

Okullar	Boş Verilen Anketler	Değerlendirmeye Alınmayan Anketler	Değerlendirmeye Alınan Anketler	Uygulanmış Toplam Anket
Mehmet Akif Ersoy Lisesi	28	22	50	100
Kırşehir Anadolu Güzel Sanatlar Lisesi	15	8	16	39
Kırşehir İmam Hatip Lisesi	35	28	21	84
Toplam	78	57	87	223

Veri Toplama Araçları ve Çözümleme

Araştırma için veri toplama aracı olarak kullanılan öğrenci ve öğretmen anketi tarafımızca, ilgili literatür taranarak geliştirilmiştir. Öğrenci anketinin geliştirilmesinde Aşılıoğlu'nun (1986) kullandığı anketten, öğretmen anketinin geliştirilmesinde ise Şimşek'in (2003) araştırmasında kullanılan anketten yararlanılmıştır.

Anketler için önce soru havuzları oluşturulmuştur. Ön uygulama öncesi öğrenci anketi 15’i Likert-tipi 5’i açık uçlu toplam 20 sorudan, öğretmen anketi 20’si Likert-tipi, 5’i açık uçlu toplam 25 sorudan oluşmuştur. Ön uygulama sonrası öğrenci anketi toplam 8’i Likert-tipi 3’ü açık uçlu toplam 11 maddeden; öğretmen anketi ise 17’si Likert-tipi, 3’ü açık uçlu toplam 20 maddeden oluşmuştur. Öğrenci anketlerinin 8 soruluk Likert-tipi kısmının Cronbach Alpha Güvenirlilik Katsayısı .72 olarak; öğretmen anketlerinin 17 soruluk Likert-tipi kısmının Cronbach Alpha Güvenirlilik Katsayısı .89 olarak, bulunmuştur.

Öğrenci anketlerinde; öğrencilerin okudukları sınıf, cinsiyet, tarih konulu film izleme ve kitap okuma durumları, öğretmen anketlerinde ise, cinsiyet, mezun olduğu okul, kitap okuma ve süreli yayın takip etme durumları değişkenler olarak belirlenmiştir.

Verilerin çözümlenmesinde, anketlerin Likert-tipi kısımlarında SPSS’te t testi, tek yönlü varyans analizi ve yüzdelik hesaplamalar, açık uçlu sorularda ise doküman incelemesi kullanılmıştır. Doküman incelemesi, araştırılması hedeflenen olgu veya olgular hakkında bilgi içeren yazılı materyallerin çözümlenmesini kapsar (Şimşek ve Yıldırım, 2003: 140). Burada veri olarak elde edilen öğretmenlerin açık uçlu sorulara verdikleri cevapların çözümlenmesi söz konusudur.

IV. BULGULAR VE YORUMLAR

Öğrencilere Yönelik Bulgular

Öğrencilere uygulanmış olan toplam 223 anketten sadece 87 tanesinin değerlendirilmeye alınması, aslında bize, liselerde en az bir defa da olsa tarihsel roman okuma yüzdesini de dolaylı olarak vermiştir. Çünkü, 223 öğrenciden değerlendirilmeye alınmayan 136 öğrenci hiç tarihsel roman okumadıklarını belirtmişlerdir. Bu bağlamda bu üç lise öğrencileri arasında tarihsel roman okuma oranının 87/223, yani yaklaşık olarak %39 (en az bir defa tarihsel roman okuyanlar) olduğu görülmüştür. Bu oranın, tarihsel romanların tarih öğretimi ve okuma becerilerine katkılarını göz önüne alduğunda oldukça yetersiz olduğu söylenebilir.

Aşağıdaki tabloda öğrencilerin tarihsel romanlara yönelik düşüncelerinin yüzdelik dağılımını görmek mümkündür:

Tablo 2. Öğrencilerin Tarihsel Romana İlişkin Görüşlerinin Yüzdelik Dağılımı

		Tamamen Katılıyorum	Katılıyorum	Kararsızım	Katılmıyorum	Hiç Katılmıyorum
1	Tarihsel romanların konuları heyecan vericidir.	40.2	40.2	10.3	5.7	3.4
2	Tarihsel romanların çok uzun olması okuma isteğimi azaltır.	26.4	18.4	18.4	23	13.8
3	Tarihsel romanı okurken kendimi olayın kahramanı gibi hissederim.	33.3	28.7	11.5	18.4	8
4	Tarihsel romanlar çok sıkıcıdır.	4.6	5.7	18.4	37.9	33.3
5	Verdiği bilginin güvenilmez olduğuna inandığım için, tarihsel roman okumayı tercih etmem.	---	5.7	21.8	34.5	37.9
6	Tarihsel roman okumanın hayat tecrübemi arttırdığımı düşünüyorum.	35.6	35.6	11.5	12.6	4.6
7	Tarihsel romanlar ilgimi çekmez.	3.4	6.9	6.9	46	36.8
8	Tarihsel roman okumamın tarih dersinde başarılı olmamda etkisi olduğunu düşünüyorum.	27.6	26.4	17.2	12.6	16.1

Tablo 2 incelendiğinde öğrencilerin, tarihsel romanla ilgili yöneltilen önerilere genelde olumlu değerlendirmede buldukları görülmüştür. Burada en düşük olumlu katılımın iki maddede gerçekleştiği fark edilmiştir. Bunlar; “*tarihsel romanların uzun olmasından dolayı okuma isteğini azalttığı*” önermesine yönelik verilen cevaplar ile “*tarihsel roman okumanın tarih derslerindeki başarılarına katkısına*” inananların görüşleridir. Bunlardan ilkinin görsel medyanın sınırları zorlayıcı sayı ve kalitede sunduğu macera ve hayal dünyasına katılımın sadece izlemeyi gerektirmesine rağmen, sayfa olarak hacimli tarihsel romanların okunmayı gerektirmesine bağlamak mümkündür. Yani, izlemek eylemi okumak eyleminden daha az çaba gerektirmekte ve daha kolay görünmektedir. İkinci öneriye ilişkin durumun sebebinin ise (ileride öğretmen görüşlerinde de görüleceği gibi)

tarih öğretmenlerinin yeterli tarihsel roman literatür bilgisine sahip olmamaları, dolayısıyla öğrencilerine de yeterince tarihsel roman önerememeleri gösterilebilir.

Öğrencilerin tarihsel romana ilişkin görüşlerinin cinsiyet, okul, sınıf düzeyi, kitap okuma durumu, tarihsel film izleme durumuna göre farklılaşıp-farklılaşmadığına bakılmış, farklılaşmanın sadece *tarihsel film izleyenlerin tarihsel romana ilişkin görüşleri*’nde “olumluluk” yönünde ortaya çıktığı görülmüştür. Tarihsel film izleyenlerin izlemeyenlere göre tarihsel romana yönelik düşünce ve görüşlerinde ortaya çıkan farkı Tablo 3.de görmek mümkündür:

Tablo 3. Tarihsel Film İzleyenlerin İzlemeyenlere Göre Tarihsel Romana İlişkin Görüşlerindeki Farklılık

Durum	N	\bar{X}	S	t	p
Tarihsel Film İzlemeyenler	75	30.41	14.15	3.297	.001
Tarihsel Film İzleyenler	12	25.25	13.94		

Tablo 3.deki bu bulgu üzerine, tarihsel film izleme durumu ile tarihsel romana ilişkin görüşlerin arasında bir bağın olup-olmadığına bakılmıştır. Yapılan korelasyon testi ile örnekleme temsil eden 87 öğrencinin, tarihsel film izlemeyi sevmeleri ile tarihsel romana ilişkin görüşleri arasında orta düzeyde pozitif anlamlı bir ilişkinin olduğu görülmüştür ($r = .336$, $P < .01$). Diğer yandan, öğrencilerin tarihsel romana ilişkin görüşlerinde okul, cinsiyet, okudukları sınıf, kitap okuma durumlarına göre anlamlı bir farklılaşmanın bulunmaması bir öğretim materyali açısından oldukça olumlu bir durum olarak değerlendirilebilir. Çünkü, bahsedilen değişkenlerin farklılık yaratmaması, öğrencilere tarihsel roman okumalarını tavsiye etme noktasında bir rahatlık sağlayacağını düşündürmektedir. Bunun da, bir öğretim materyali olarak tarihsel romanın değerine ilişkin olumluluk yarattığı söylenebilir.

Tarihsel romana ilişkin öğrencilerin görüşlerini ele alan anketteki son üç açık uçlu sorunun değerlendirilmesinde ise şu bulgulara ulaşılmıştır:

1. Öğrencilere sorulan “*Şimdiye kadar okuduklarınızdan en çok beğendiğiniz tarihsel roman yazarı ve kitabının adı nedir?*” sorusuna ankete katılanların bir kısmının cevap verdiği görülmüştür. Cevap verenlerin dağılımı (okullara göre), Mehmet Akif Ersoy Lisesi’nden 40, Anadolu Güzel Sanatlar Lisesi 15, İmam hatip Lisesi 24 öğrenci şeklindedir. Bunların toplamı 79’dur ki örneklemin 87 olduğu düşünülürse yeterli olduğu anlaşılabilir. Üç lisenin öğrencilerinin, okudukları tarihsel romanları arasında en çok beğendiklerinin isimleri, beğenilme sırasına göre şu şekildedir:

Eser-Yazar adı olarak belirtilenler:

Küçük Ağa-Tarık Buğra (14), Cezmi-Namık Kemal (6), Figan-Ahmet Günbay Yıldız (6), Ateşten Gömlek-Halide Edip Adıvar (4), Gelibolu-Buket Uzuner (4), İsyân Günlerinde Aşk-Ahmet Altan (3), Yaban-Yakup Kadri Karaosmanoğlu (3), Semerkant-Amin Malof (2), Kılıç Yarısı Gibi-Ahmet Altan (2), Paris’te Son Osmanlılar-Hıfzı Topuz (2), Yollar Dönüşe Gider-Nurullah Genç (2), Meyyale- Hıfzı Topuz (1), Gazi ve Fikriye- Hıfzı Topuz (1), İnce Memed-Yaşar Kemal (1), Vurun Kahpeye- Halide Edip Adıvar (1), Sunguroğlu-Yavuz Bahadıroğlu (1), Mısır’a Doğru- Yavuz Bahadıroğlu (1), Cem Sultan- Yavuz Bahadıroğlu (1), Ağlıyor-Yavuz Bahadıroğlu (1), Merhaba Söğüt- Yavuz Bahadıroğlu (1), IV. Murat, Kırım Kan Ağlıyor-Yavuz Bahadıroğlu (1), Tek Adam-Şevket Süreyya Aydemir (1), Sergüzeşt-Sami Paşazade Sezaî (1), Bozkurtların Ölümü-H. Nihal Atsız (1), Kırımlı Murat Destanı-Hasan Nail Canat (1), Zafer Rüzgarları-A. Yılmaz Boyunağa (1), Dokuzuncu Hariciye Koşuşu-Peyami Safa (1), Fatih-Harbiye-Peyami Safa (1), Babilde Ölüm, İstanbul’da Aşk-İskender Pala (1), Harp ve Sulh-Tolstoy (1), Sefiller-Victor Hugo (1), Kanlı Gömlek-Ömer Rıza Doğru (1) şeklindedir. Bunların dışında, tarihsel roman olmamasına rağmen Tarihin Şeref Levhaları-Ahmet Şahin (2), Tarih Şuuruna Doğru-İbrahim Refik (1), Necip Fazıl Kısakürek’in II. Abdülhamit Han (1), Moskof (1) adlı eserleri ile Atatürk’ün Nutku (1) da sayılmıştır.

Bir de yazarı belirtilmemiş eserler ile eseri belirtilmemiş yazarlar görülmüştür. Başını Vermeyen Şehit (1), Malazgirt’in Üç Atlısı (1), Tarih Şuuruna Doğru (1), Kara Murat, Yüzbaşının Kızı (1), Sahipsiz Saltanatı (1), Fatih-Harbiye ve Bozkurtların Ölümü (1) bunlardandır. Sadece yazar adı olarak da, Peyami Safa (2), Tarık Buğra (1), Cengiz Aytmatov (1) ve H. Nihal Atsız (1) sayılmıştır.

Yukarıdaki listenin ilk dikkati çeken yönü eser ve yazar yönünden zenginliğidir. Bu zenginlik hem eser sayısı hem yazarların farklılıkları hem de eserlerin yazılma dönemleri bakımındandır. Dikkat edilirse listede, 1880’de yayınlanmış Namık Kemal’in Cezmi’si de, 2000’de çıkmış İsyân Günlerinde Aşk da vardır. Sonra bu

romanların, ele aldıkları tarihsel dönemler açısından da bir zenginlik göze çarpar ki bu durum olumlu sayılmalıdır.

2. Öğrencilere sorulan “Okuduğunuz tarihsel romanda hangi kahramanın yerinde olmak isterdiniz?” şeklindeki ikinci açık uçlu soruya da ankete katılanların hepsinin cevap vermediği görülmüştür. Bu durum okullara göre M. Akif Lisesi’nden 36, Anadolu Güzel Sanatlar Lisesi’nden 12 ve İmam Hatip Lisesi’nden 21 öğrenci şeklindedir. Bu da toplamda 69 etmektedir ki örneklemin 87 öğrenciden oluştuğu düşünüldüğünde bu yeterli bir oran sayılabilir.

Cevap verenlerin hepsi kendini bir tarihsel kişiliğin yerine koymamıştır. Toplamda 50 öğrencinin kendini bir tarihsel kişiliğin yerine koyduğu görülmüştür ki bunların 26’sı kızdır. Burada şaşırtıcı olan kızların kendilerini tarihsel bir kişiliğin yerine koyması değil, bunlardan 12’sinin kendini erkek bir kahramanla özdeşleştirmiş olmasıdır. Bu 12 kız öğrenci, en çok tercih edilenden başlamak üzere sırasıyla; Fatih Sultan Mehmet (4), Mustafa Kemal Atatürk (2), Küçük Ağa (1), Çolak Salih (1), Hasan Sabbah (1), Cengiz Han (1), Yavuz Sultan Selim (1) ve Asker (1) ile özdeşim kurmuşlardır. Türkiye’de hem yazılan tarihsel romanlarda, hem de tarih öğretiminin içeriğinde erkek kahramanların ağır bastığı gerçekliğini göz önünde bulundurmak gerekmektedir. Çünkü, yukarıda en beğenilenler listesinde Mustafa Kemal Atatürk ve Fatih Sultan Mehmet’e doğrudan atf yapan bir roman olmamasına rağmen bu tercihlerin ortaya çıkmasının, adı geçen kahramanlara Türkiye’deki tarih öğretiminde sürekli vurgu yapılmasından kaynaklanabileceği olasılığını düşündürmektedir. Sosyalleşme bağlamında kız öğrencilerin de rahatlıkla özdeşim kurabilecekleri bayan kahramanların da vurgulandığı tarihsel romanlar bulunmalı, tanıtılmalı ve tavsiye edilmelidir. Aksi taktirde, özellikle bir kız öğrencinin belirttiği; “Ne bir kahraman olmak isterdim ne de bir suçlu. Çünkü acıya ve bu kadar karmaşaya katlanamam” sözlerinde olduğu gibi tarihsel romanlar, öğrencilerin nezdinde sadece acı ve suç konularının işlendiğinin düşünüldüğü değersiz birer eser olarak anılabilir.

3. Son olarak öğrencilere yöneltilmiş olan “Tarih öğretmeniniz size okumanız için tarihsel roman tavsiye eder mi? Cevabınız evetse, öğretmeninizin en çok hangi yazarı ve eserlerini okumanızı istediğini yazınız” soruya az sayıda öğrencinin cevap verdikleri görülmüştür. Mehmet Akif Ersoy Lisesi’ndeki 12, Anadolu Güzel Sanatlar Lisesi’nden 11 ve İmam Hatip Lisesi’nden 16 öğrenci tarih öğretmenlerinin kendilerine tarihsel roman tavsiye ettiklerini yazmışlardır. Diğer bir deyişle, örneklemin oluşturduğu 87 öğrenciden 48’i ki yarıdan fazlasıdır, öğretmenlerinin kendilerine tarihsel roman tavsiyesinde bulunmadıklarını belirtmiştir. “Öğretmenimiz tarihsel roman tavsiye eder” diyenlerden ise sadece 19’u, ya bir yazar ya da bir eser ismini dilettirmişlerdir. Öğretmenlerinin kendilerine tarihsel roman tavsiyesinde bulduklarını söyleyen öğrencilerden, hangi eseri tavsiye ettiklerine ilişkin olarak (yine en çok tavsiye edilenden başlamak üzere); Bozkurtların Ölümü (6), Küçük Ağa (2), Fatih-Harbiye (2), Çanakkale zaferi ile ilgili (2), Kurtuluş Savaşı ile ilgili (2), Yaban (1), İstanbul’un fethi ile ilgili (1), Safiye Sultan, Kadınlar Saltanatı, Gülün Adı (1), geçmişe yönelik konularla ilgili (1) cevapları verilmiştir. Sadece yazar ismi belirtilenlerin ise, Tarık Buğra (4), Nihal Atsız (2), Ömer Seyfettin (2), Peyami Safa’yı (1) saydıkları görülmüştür.

Öğretmenlere Yönelik Bulgular

Öğretmenlere sunulan 17 önermeye katılım dağılımları Tablo 4.de toplu olarak verilmiştir.

Tablo 4. Öğretmenlerin Tarihsel Romana İlişkin Görüşlerinin Yüzdelerle Dağılımı

9. Tarihsel romanlar, tarih dersi için kötü bir öğretim materyalidir.	---	3.3	13.3	16.7	66.7
10. Tarihsel roman okuyan öğrenciler, tarih konularını yorumlamada daha başarılıdır.	43.3	43.3	10	3.3	---
11. Ülkemizde tarihsel roman yazımının yeterince gelişmemiş olduğunu düşünüyorum.	Tamamıyla katılı	Katılı	Katılı	Katılı	Hiç katılı
12. Tarihsel roman, sadece tarihsel olayların kronolojik olarak sıralanması değildir.	40	46.7	10	3.3	---
13. Tarihsel romanlar, milli değerleri aktarmada etkilidir.	43.3	33.3	10	13.3	---
14. Tarihsel roman okuyan öğrenciler geçmişlerine daha bağlıdır.	33.3	46.7	13.3	3.3	3.3
15. Tarihsel romanlar, öğrencilerin millî bilginin kaynağı olarak okutulmasıyla ilgili iyi bir araçtır.	50.3	50.3	6.7	6.7	---
16. Öğrencilerime konu bağlamında önerebileceğim tarihsel roman sayısı oldukça azdır.	16.7	56.7	10	10	6.7
17. Tarihsel romanlar okuduğunuz tarihsel romanlar Tarih Öğretmenliğini seçtiğiniz dönemde öğrencilerin kendine olan güvenini artırır.	---	6.7	13.3	30	50
8. Tarihsel roman, öğrencinin sosyalleşme sürecini olumlu yönde etkiler.	36.7	43.3	10	10	---

Tablo 4.e bakıldığı zaman, öğretmenlerin tarihsel romanla ilgili görüşlerinin genelde ‘iyi’ (% 80) derecede olumlu olduğu görülebilir. Ancak, derslerinde *sık sık tarihsel roman tavsiye ettiklerini söyleyen öğretmenlerin* buna karşın, *Türkiye’de tarihsel roman yazımının pek gelişmemiş olduğunu ve öğrencilere önerilebilecek tarihsel roman sayısının oldukça az olduğunu* belirtmeleri bir çelişki gibi görünmektedir. “Öğretmenlerin derslerinde sık sık tarihsel roman tavsiye ettikleri”ne ilişkin bilginin öğrenci anketinden ulaşılan “yarıdan azının (39/87) derslerinde tarihsel roman tavsiye ettiği” bilgisiyle de çeliştiği açıktır.

Öğretmenlere sunulan anketin 6 boyuttan oluşması (tarihsel roman tavsiyesi, tarihsel romana yönelik tutumları, tarihsel romanın öğretim materyali olarak özellikleri, tarihsel roman okuyan öğrencilere etkisi, tarihsel romanın Türkiye’deki durumu ve tarihsel romanların öğretmen olmalarına etkisi), boyutların her birinin, cinsiyet, kıdem, mezun olunan okul, tarihsel kitap okuma ve tarihle ilgili dergi takip etme değişkenlerine göre çözümlenmesini sonucunda sadece, “tarihle ilgili kitap okuma” değişkeninin “öğrencilerine daha fazla tarihsel roman tavsiye etmeleri” boyutunda anlamlı bir farklılık yarattığı bulunmuştur.

Tablo 5. Tarihle İlgili Kitap Okuyanların Tarihsel Romanı Tavsiye Etmeleri

Durum	N	\bar{X}	S	t	p
Tarihle ilgili kitap okuyanlar	12	4.6667	.49237	3.266	.005
Diğer kitap okuyanlar	6	3.6667	.81650		

Tablo 5.de görüldüğü gibi tarihle ilgili kitap okuyan öğretmenlerin, derslerinde tarihsel romanları daha çok tavsiye ettikleri söylenebilir. Tarihsel romana yönelik öğretmen tutumlarında, tarihsel romanın bir öğretim materyali olarak olumlu bir etkiye sahip olduğuna, tarihsel romanın bilişsel, duyuşsal, sosyal anlamda olumlu bir etkiye sahip olduğuna ilişkin ve toplamda öğretmen görüşlerinde;

- cinsiyetin,
- kıdem,
- mezun olunan okul,
- tarihsel kitap okuma ve
- tarihle ilgili dergi takip etmenin farklılık yaratmadığı görülmüştür.

Bu durum da, öğrencilerin görüşlerinde olduğu gibi olumlu bulunmalıdır. Çünkü, tarihsel romanı tavsiye ederek, onu tarih öğretiminin bir parçası yapacak olan öğretmenlerin görüşlerinin bu değişkenlere göre farklılaşmaması bir öğretim materyali olarak tarihsel romana ilişkin olumlu bir durum olarak değerlendirilmelidir.

Öğretmenlerin ankette bulunan son üç açık uçlu soruya verdikleri cevapların dağılımı ise aşağıdadır:

1. Öğretmenlere yöneltilen “*Ülkemizdeki tarihsel romanlar, hem sayıca hem de kalite bakımından eğitim öğretim ortamında kullanmanız açısından ne derece uygundur?*” sorusuna öğretmenlerin 23’ü cevap vermiştir. Buna göre Türkiye’de tarihsel romanların durumuna ilişkin olarak öğretmenlerin; “*sayı açısından yetersiz olduğuna*” dair 6’sı, “*eğitimsel açıdan bazı romanların yeterli bazılarınsa yetersiz olduğuna*” dair 6’sı, “*kalite açısından yetersiz olduğuna*” dair 4’ü, “*eğitimsel açıdan hiç uygun olmadığına*” dair 4’ü, “*Türkiye’deki tarihsel romanların siyasi amaçlı olduğuna*” dair 3’ü, “*eğitimsel açıdan uygun niteliklere sahip olduğuna*” dair 3’ü, “*temininin zor olduğuna*” dair 2’si, “*her tarih konusuna uygun roman olmadığına*” dair 1’i, “*tarihsel romanların gerçekçi olmadıkları için okunmasına taraftar olmadığına*” dair 1’i görüş belirtmiştir. Bu bulgulara göre, öğretmenlerin genelinde Türkiye’deki tarihsel romanların hem sayı olarak hem de kalite olarak eğitimsel açıdan yeterliliğine inanmadıkları görülmektedir. Bu görüşe, ders ortamına her konuya uygun tarihsel romanların nicelik ve nitelik açısından yetersiz olduklarına bir ölçüde katılmak mümkün olsa da bu yaklaşımın temelinde, tarih öğretmenlerinin “Türkiye’deki tarihsel roman potansiyelinden tam olarak haberdar olmamaları” olduğu düşünülmektedir.

2. Öğretmenlere yöneltilen “*Çocukluğunuzda okuduğunuz tarihî romanlardan hatırladıklarınızın isimleri nelerdir?*” sorusuna 18’inin cevap verdiği görülmüştür. Buna göre öğretmenlerin en çok ismini tekrarladıkları tarihsel romandan başlamak üzere durum şöyledir:

Yaban (5), Ateşten Gömlek (4), Türk Destanları (3), Türkün Ateşle İmtihani (2), Bozkurtların Ölümü (2), Dede Korkut (2), Küçük Ağa (2), Osmançık (2), Malkoçoğlu (2), Kapı (2), Kilit (2), 4. Murat (1), Vurun Kahpeye (1), Tarkan (Çizgi Roman) (1), Kara Pençe Serisi (1), Battal Gazi (1), Ebu Müslim Horasani (1), Anahtar (1), Konak (1), Çatı (1), Kırık Hançer (1), Sunguroğlu (1), Buhara Yanıyor (1), Kırım Kan Ağlıyor (1), Cezmi (1), Son Akın (1), Sefiller (1), Endülüs Yanıyor (1), Dokuzuncu Hariciye Koşuşu (1), Kanuni (1), Bozkurtlar Diriliyor (1), Yalnız Efe (1), Şeyh Şamil (1), Sodom Gomore (1), İngiliz Kemal (1), Kolsuz Kahraman (1), Tuna Nehri (1), Kızıl Elma (1), Kızıl Kadırga (1), Şirpençe(1). Bunların dışında Ömer Seyfettin’in ‘Prima Türk Çocuğu’ ile

Namık Kemal'in 'Vatan Yahut Silistre' adlı eserleri de tarihsel roman olarak sayılmıştır. Bu listenin de hem yazarları hem yazdıkları ve anlattıkları dönem açısından epeyce zengin olduğunu söylemek mümkündür. Tarih öğretmenlerinin büyük bir çoğunun çocukluğunda tarihsel roman okumaları ve bunu hâlâ hatırlıyor olmaları da tarihsel romanların hatırlamaya olan etkisini göstermesi bakımından önemli sayılabilir.

Tarih öğretmenlerinin bazılarının ise sadece tarihsel roman yazarlarının isimlerini saydıkları görülmüştür. Bu tarih öğretmenleri, yukarıdakilere ek olarak çocukluklarında Oğuz Özdeş'in, M. Necati Sepetçioğlu'nun, H. Nihal Atsız'ın ve Bekir Büyükarkın'ın serilerini de okuduklarını belirtmişlerdir.

3. Öğretmenlere yöneltilen “*Sizce, öğrencilerin tarihsel roman okumasının faydaları ya da zararları nelerdir?*” sorusuna öğretmenlerin 24’ü cevap vermiştir. Öğretmenlerin tarihsel romanların hem yararları hem de zararları hakkında görüş bildirdikleri görülmüştür. Buna göre en çok dile getirdikleri yararları:

- a. Tarihi sevdiren ve öğrenme isteğini artırır (8),
- b. Millî değerleri aktarır (6),
- c. Tarihi zevkli hale getirir (6),
- d. Millî şuur verir (6),
- e. Öğrencilerin tarihi kavramalarını ve yorumlamalarını geliştirir (5),
- f. Tarihsel olayların somutlaştırılmasını sağlar (3),
- g. Tarihsel olayın geçtiği dönemin sosyo-ekonomik durumunu anlamayı sağlar (2),
- ğ. Öğrencilerin hayal güçlerini geliştirir (2),
- h. Öğrencilerin kronolojiyi anlamalarına yardım eder (1),
- ı. Tarihsel olayların sebep-sonuç ilişkisini anlamasına katkı sağlar (1),
- i. Öğrencilerin maceracı ruhuna hitap eder (1),
- j. Bugün yaşananları anlamaya yardım eder (1) şeklindedir.

Burada en çok söylenen ilk 5 maddede, tarihsel romanların değer aktarıcı, millî şuur geliştirici, öğrencilerin kavrama düzeyi ve zihinsel becerilerine katkı sağlayıcı ve tarihi sevdiren yönlerine dikkat çekilmiştir. Bu da tarihsel romanın yararları konusunda tarih öğretmenlerinin yeterli olumlu görüşe sahip olduklarını göstermektedir.

Öğretmenler tarihsel romanların zararları hakkında ise,

- a. Tarafı ilgi sunmasını (6),
- b. Kurgu eseri olduğu için abartılı anlatımla insanların geçmişin gerçekliğine inancını sarsabileceğini (3),
- c. Öğrencilerin hayalci bir kişilik geliştirmelerine yardım edebileceğini (2),
- d. Öğrencileri hikâyeci tarihe yönlendirebileceğini (2),
- e. Bazıların başka milletleri aşağılaması yüzünden zararlı olabileceğini (1),
- f. Öğrencilerde geçmişe özlem saplantısı kazandırabileceğini (1) belirtmişlerdir.

Bu görüşlerin, tarih- edebiyat arasında her iki alan açısından da değer ifade eden eserlerle ilgili yapılan değerlendirmelerde sıklıkla karşılaşıldığı gibi, kurgu-gerçeklik, tarafsızlık-nesnellik ekseninde oluştuğu görülmüştür. Eğitimsel açıdan tarihsel romanların eksikliklerine ilişkin belki de en çok vurgu yapılması gereken nokta, onun nesnellikten uzak bir yaklaşım sergilemesinin farkında olunarak okunmaması durumunda ortaya çıkacağı gerçeği göz önüne alınca, öğretmenlerin bu endişelerini haklı olarak algılamak mümkün olabilir. Aslında bu yaklaşım bile tersinden bir okuma ile tarih öğretmenlerinin tarihsel romanların eğitimsel açıdan değerini bilmelerine ilişkin bir bulgu sayılabilir. Ancak, öğretmenlerin bir kısmının belirttiği gibi, bu endişeleri öğrencilerin tarihsel romanları “bir kurgu eseri olduklarını” dikkatten kaçırmayarak okumalarından edinecekleri bilgileri eleştirel bir bakış açısı ile değerlendirerek aşmalarının mümkün olacağı söylenebilir.

V. SONUÇ

Tarihsel romana ilişkin lise öğrencilerinin ve tarih öğretmenlerinin görüşlerini ele almayı amaçlayan bu araştırma sonucunda hem öğrencilerin hem de öğretmenlerin tarihsel romana yönelik olumlu görüşe sahip oldukları bulunmuştur. Doğal olarak bazı değişkenlerin tarihsel romana yönelik bu görüşlerin olumluluk derecesini arttırdığı görülmüştür. Bunlar, öğrenciler için tarihsel film izlemeyi sevme iken öğretmenler için tarihle ilgili kitap okuma durumudur.

Araştırmada, öğretmenlerin yüksek derecede katıldıkları; derslerinde öğrencilere tarihsel roman okumalarını önerdikleri görüşünün gerçeği yansıtmadığı hem kendilerinin Türkiye’de yeterli tarihsel roman olmadığını belirtmeleri hem de öğrencilerin bu bilgiyi yanlışlayan başka bilgiler vermeleri ile ortaya konmuştur. Buradan, liselerdeki tarih öğretmenlerinin genelinin, hem derslerinde öğrencilere önerebilecekleri tarihsel roman literatür bilgisine yeterince sahip olmadıkları hem de tarih eğitiminde bir araç olarak tarihsel romandan nasıl yararlanabileceğine ilişkin bilgi eksiklikleri bulunduğu sonucunu çıkarmak mümkündür. Bu bağlamda, lise tarih

öğretmeni yetiştiren bölümlerin, öğretmenlerin derslerinde hangi konuya uygun hangi tarihsel romanı önerebileceklerinin bilgi ve deneyimini vermelerinin gerekliliği önerilebilir. Bir diğer öneri ise bu konunun daha geniş bir örnekleme çalışılması olabilir. Böylelikle Türkiye’de lise tarih derslerinde tarihsel roman kullanım durumu ve bunun nedenleri üzerine daha genellenebilir bulgulara ulaşmak mümkün olabilecektir.

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THE EFFECT OF THE COMPUTER ASSISTED TEACHING AND 7E MODEL OF THE CONSTRUCTIVIST LEARNING METHODS ON THE ACHIEVEMENTS AND ATTITUDES OF HIGH SCHOOL STUDENTS

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ABSTRACT

This study provides a comparative effect study of the Computer Assisted Teaching and the 7E model of the Constructivist Learning methods on attitudes and achievements of the students in physics classes. The experiments have been carried out in a private high school in Diyarbakır/Turkey on groups of first year students whose pre-test scores of achievements and attitudes show no statistically significant difference. One of the groups received computer assisted, and the other were given instructions based on 7E model of the constructive learning method. An achievement test consisting of 29 multi-choice questions related to subject of electrostatics has been carried out to compare the group's achievements. A statistical analysis of achievement tests showed a significant difference between the students achievements at the knowledge and comprehension levels of cognitive domain ($P<.05$). On the other hand no difference was noted between their achievements at the application level of cognitive domain. To determine the effect of the instruction methods on the student's attitudes towards the physics course, a physics attitude scale was applied to both groups. The results have indicated that the student's attitudes towards physics learning were not affected by different instruction methods.

Keywords: Physics education, attitude, computer assisted teaching, 7E model.

BİLGİSAYAR DESTEKLİ ÖĞRETİM İLE BÜTÜNLEŞTİRİCİ ÖĞRETİMİN 7E MODELİNİN LİSE ÖĞRENCİLERİNİN BAŞARI VE TUTUMLARINA ETKİSİ

ÖZET

Bu çalışmada Bilgisayar Destekli Öğretim ile Bütünleştirici Öğretimin 7E modelinin öğrencilerin fizik başarı ve tutumlarına etkisi karşılaştırmalı olarak incelenmiştir. Bu amaçla çalışma Diyarbakır ilindeki özel bir lisenin 1. sınıfında okuyan kontrol ve deney grupları üzerinde gerçekleştirildi. Gruplar, başarı ve tutum ön-test sonuçları arasında istatistiksel açıdan anlamlı bir fark bulunmayan iki şubenin öğrencilerinden seçildi. Gruplardan deney grubuna Bilgisayar Destekli Öğretim, kontrol grubuna ise bütünleştirici öğretimin 7E modeline göre ders işlendi. Grupların başarılarını karşılaştırmak amacıyla elektrostatik konusunda hazırlanmış çoktan seçmeli 29 sorudan oluşan bir başarı testi uygulandı. Başarı testinin istatistiksel analizi sonucunda bilişsel alanın bilgi ve kavrama düzeylerinde öğrencilerin başarıları arasında anlamlı bir fark bulundu ($P<.05$). Bununla birlikte, bilişsel alanın uygulama basamağında öğrencilerin başarıları arasında fark bulunmadı. Uygulanan öğretim yöntemlerinin öğrencilerin fizik dersine yönelik tutumlarına etkisini belirlemek için bir fizik tutum ölçeği uygulandı. Elde edilen sonuçlar öğrencilerin fiziğe karşı tutumlarının öğretim yöntemlerinden etkilenmediğini gösterdi.

Anahtar kelimeler: Fizik eğitimi, tutum, bilgisayar destekli öğretim, 7E model.

INTRODUCTION

Recent advances in science and technology have changed the structure and the education systems of societies. The increasing importance of skilled person not only to use knowledge but to be a producer of knowledge puts additional responsibilities on the educators of science (Akkoyunlu, 1996). A glance at the system of education in this country would reveal a picture of generally inward looking setup, limited to a classroom environment with a teacher and group of students, a subject book, a desk and a blackboard (Başaran, 1993). It is generally known that physics, chemistry and biology have many theoretical concepts that are difficult to understand by students, and have misconceptions about. It is also known that students do not or rarely link the knowledge gained from those sciences to their daily life (Ayas & Özmen, 1998; Kadioğlu, 1996; Özmen, İbrahimoglu & Ayas, 2000). In many of these cases it was stated that in education and learning process inadequate traditional education system and the existing educational materials are neither helping the solution of the existing problems nor assisting in the development of conceptual learning (Şahin & Parim, 2002; Saka & Cerrah, 2004). Due to its positive effect to increase the attention and curiosity of students, and the helps that provides in the conceptual learning, the use of computers in education is spreading widely. In addition, because most of the knowledge related to natural phenomenon is now available in the computer environment. That is why, when teachers use computers as a teaching tool, this would give them the ability to show the physical phenomenon in a way that students can visualize in a three dimensional form (Soylu & İbiş, 1998). It is known that the sense organs are used in

education; the more efficient education can be achieved. (Kaptan, 1998). The visually observing the subject under study would help the students to consolidate the knowledge gained and finds ways to link this to their surroundings. The computer environments provide a platform to apply the knowledge in a given situation, and their interactions results in the discovery of new knowledge that will help cognitive domain development and the accumulation of knowledge (Akpınar 1999). Students do not take the knowledge as is given to them by teachers, but rather they do restructure that knowledge themselves (Bodner, 1986, 1990). If computers are used effectively in this restructuring process, teachers can use them as a teaching tool. Many studies showed that during teaching process computer assisted applications aid the consolidation of attitudes and the restructuring of the knowledge by students themselves (Akpınar, 1999; Arı & Bayhan 1999; Baki, 2002; Saka & Akdeniz, 2006).

The constructivist learning has been presented as a method that assists the teaching process. In constructivist learning method (Vygotsky, 1982 & 1998); the subject is generally presented to the student with a problem. With this, the students use the existing knowledge to solve problems. In recent years many reforms in science and mathematics teaching are largely based on the constructivist learning method. In an application of the constructivist learning method, for a meaningful learning to occur, a suitable learning environment need to be provided to students to develop their own knowledge through testing their own experience (Çepni, Akdeniz & Keser, 2000; Özmen, 2004).

In the constructivist learning, development in cognition and improvement in conceptualization depends on the process used to internalize the knowledge. As a result all learning is a process of discovery. Many researchers indicated that learning concepts in a meaningful way, the use of the multi-dimensional environment, more importantly simulations containing multi-dimensional environments, are far more powerful than those classical learning methods (Hewson, 1985; Novak, Gowin & Johansen, 1983; Thornton & Sokoloff, 1990, 1998; Saka & Akdeniz, 2006). Use of multi-dimensional environments in instruction applications would help improve motivation of the students, and by visualizing the physical and chemical processes, improves the understanding of the concepts (Trindade, Fiolhais & Almeida, 2002; Yiğit, 2004). The misconceptions developed during learning theoretical concepts in physics would negatively effect on the later years' knowledge developments. For that reason, persisting misconceptions causes many problem in cognitive process (Üstüner & Sancar, 1999). This in mind, in 2005, the primary education science classes have been replaced with "science and technology" classes. In science and technology classes four staged and 5E model of constructivist learning method have been introduced (Ayas et al., 2005). To test the success of the model, the 7E model - a higher model than 5E (Çepni et al., 2001) has been used with the reference group in this study. To find out the success level of the model without computer assisted teaching, the experiment group in the study has been instructed using the computer assisted teaching method, and the results have been contrasted with that obtained from the application of model 7E of the constructivist learning method.

To enable a meaningful comparison, "electrostatics" topic was selected for instructions, for it is being conceptually hard to understand and in the same time suitable for simulation in computer environment. One of the hardest area of the electrostatics for students is the difficulty to visualize the electrical forces and the related mathematical terms such as ($F \sim 1/r^2$) (Scott & Risley, 1999). They have also problem in visualizing the movement and the direction of an electrical charge (positive or negative) in an electrical field. By providing such programs to students, it was aimed to help better understand the electrical processes without entirely depending on the mathematical definitions.

AIM

The aim of this study was to determine whether there are any statistical differences in the level of achievements and in the attitudes when one group of students received instruction in electrostatics according to the computer assisted method and the other with 7E model of constructivist learning.

METHOD

This study employed test-retest method with reference group model to contrast the group's success levels.

Sample: The study was conducted on 33 first year students of a private high school in Diyarbakir. 19 students of those were chosen as the experiment group and the other 14 as the reference group.

Data collection instruments: For data collection, a test consisting of 29 multi choice questions and each item in the test was scored "1" point when responded truly. Thus, maximum score of the test was limited to 29. In addition, a Likert type 5 level physics attitudes scale with 24 suggestions were used.

The questions in the achievement test were selected from 40 questions following expert's advice on the basis of level of difficulty and the indexes of defined differences. 29 questions included in the test were grouped

according to Bloom taxonomy on cognitive domain’s knowledge, comprehension and application levels. In the test, 8 questions are of the knowledge, 14 comprehension and the remaining 7 are of the application levels. The reliability constant of the test has been determined according to Spearman-Brown’s method of division of the test to two equivalent halves ($\alpha=0,72$). To determine the attitude towards physics classes, an attitudes scale developed by Maskan & Güler (2004) has been used. The Cronbach-Alpha internal consistency constant of the attitudes scale used in the study has been determined as $\alpha=0,81$.

The experiment and the analysis of the data: The data subjected to analysis belongs to two groups with no statistically meaningful differences in their preliminary tests. For both groups, instructions were carried out by same teacher.

During the experiments any data related to students who did not attend all activities, has been excluded from further analysis. As a result although the experiment has originally commenced with a total of 42 students, only 33 of those students’ data have been included in the analysis. 19 of these students were given computer assisted teaching, the remaining 14 students received instructions that were based on the 7E model of constructivist learning. In the classroom in which computer-assisted teaching (CAT) was applied, a computer was given to two students, and thereby the interaction between them was provide at the same time. Then, the teacher demonstrated to students how to use software programs related to physics topics, and after several applications, the students were allowed to study by themselves. In addition, they were assisted by teacher when they had any difficulties. In the class-rooms where 7E model was applied, however, the activities were performed in guidance of the teacher by considering the stages in the model.

The study has been carried out over duration of three weeks. Before the commencement of the experiment, a physics attitude scale and the electrostatics preliminary achievement tests were conducted on all of the first year classes. From those, only two classes that did not show any meaningful statistical differences with regard to achievement and attitudes were selected for further study. In one of the classes, the 7E model of constructivists learning and in the other computer assisted instruction were given. Selection of the class for the type of the instruction was selected randomly. The computer assisted instruction group was given pre prepared flash animations, java scripts and presentation programs related to “electrostatics”, while the other group received instructions on the same topic in accordance with the 7E model of constructivist learning levels. The software programs used in CAT were downloaded from the sites including qualified software programs concerning physics topics (www.lisefizik.com, <http://webphysics.davidson.edu>). These downloaded software programs were examined by two physics educators and one computer and instructional technologist, in order to determine whether those programs are suitable to aim of research, or not. At the end of examination, the software programs suggested by the experts were used in the instruction process.

When the instructions have been completed, a final achievement test has been carried out and repeated the attitude test. A SPSS package program has been utilized in the investigation to determine any significant differences between the preliminary and the final tests.

RESULTS AND DISCUSSION

The data collected has been presented here in accordance with the aim of this study. To determine whether there are any differences between two groups in regard to achievements in physics classes and the attitudes, the data has been subjected to t-test analysis. The result of the analysis is provided in the Table 1.

Table 1: Analysis of the pre-test results of the computer assisted and constructivist learning groups

Variance source	Instruction Method	f	\bar{X}	Standard Deviation	df	P	t
Knowledge level	CAT	19	3,26	1,485	31	,165	1,422
	7E	14	2,57				
Comprehension Level	CAT	19	4,53	2,245		,433	,794
	7E	14	3,93				
Application Level	CAT	19	1,00	,816		,458	-,751
	7E	14	1,21				
Total Score	CAT	19	8,79	3,326		,319	1,012
	7E	14	7,71				
Physics Attitude Score	CAT	19	3,90	,495	,363	,923	
	7E	14	3,73				

P> ,05

CAT: Computer assisted teaching

7E : 7E model of constructivist learning

According to the data in the Table 1, there is no meaningful difference between two students groups regarding preliminary tests scores. As a result, it can be concluded that, based on the preliminary achievements and the attitudes, these two groups are equivalent.

To determine whether there are any differences between two groups based on the results of the final achievement and the attitudes tests, the collected data has been subjected to t-test analysis. The results of the analysis of the final tests have been provided in the Table 2.

Table 2: Analysis of the post-tests data of the computer assisted and constructivist learning groups

Variance source	Instruction Method	f	\bar{X}	Standard Deviation	df	P	t
Knowledge Level	CAT	19	5,00	,943	31	,026*	2,334
	7E	14	4,14				
Comprehension Level	CAT	19	7,84	1,500		,023*	2,399
	7E	14	6,36				
Application Level	CAT	19	1,68	,820		,463	-,743
	7E	14	1,93				
Total Score	CAT	19	14,53	1,467		,032*	2,245
	7E	14	12,43				
Physics Attitude Score	CAT	19	3,80	,5918	,701	-,388	
	7E	14	3,87				

* $P < ,05$

There are some differences in the result of the final achievement tests between students of computer assisted and the constructivist learning groups in the area of knowledge, comprehension levels and in general achievements. But in the application level no meaningful differences have been recorded between these two groups (Table 2). This result has indicated that both of the teaching methods have equal effects in acquiring behaviors at the application level of Bloom's Taxonomy. In CAT applications, the students can construct different problem situations on computer by using the software programs concerning physics topics, and they can see differences about results by changing variables. Thus, they can construct cause-effect-relationship on their mind. In this point of view, students' practicing on physics subjects and seeing cause-effect-relationship among the physics concepts on the computer may be maintained as a process of constructing knowledge. Similarly, while taking into consideration the stages of 7E model, the students take concepts and relationship among concepts that form problem situations by handling them step by step in mental process, and try to get result. It is thought that there is no linear relationship between knowledge-comprehension and comprehension-application levels although gains in application level based-on gains of knowledge and comprehension levels. Therefore, it can be expected that both methods contribute equally to students' understandings at the application level of Bloom Taxonomy.

It is noted that the level of knowledge and the comprehension of the students of the computer assisted teaching instruction group has been higher as it was reflected in their better responses to tests questions. This is in line with the findings reported by other studies (Saka & Yılmaz, 2005; Ayvaci, Özsevgeç & Aydın, 2004; Zele et al., 2003; Savelsbergh et al., 2000). It is widely reported that the computer assisted teaching effects positively on the level of success in all education levels (Başaran, 2005; Büyükkasap et al., 1998).

Table 3 provides the correlations between the achievements and the attitudes of the students toward physics courses.

Table 3. Correlations between achievements and attitudes of students toward physics courses

		Post-test knowledge level	Post-test Comprehension level	Post-test Application Level	Post-test Total Score
Attitudes	Pearson Correlation	-,155	-,050	-,322	-,201
	P	,389	,783	,068	,263
	N	33	33	33	33

No correlation has been found between the achievements in physics and the attitudes towards physics courses (Table 3). Maskan and Guler's (2004) study showed that the students' attitudes do not relate to the method of instruction given. It was also stated by many other researchers that the attitudes of students towards courses cannot be changed in a short period (Hacıoğlu & Ulu, 2003; Hardal & Eryılmaz, 2004).

CONCLUSIONS

This study has shown that instructions provided following both the computer assisted and the constructivist learning methods have assisted in increasing the level of understanding of the concepts related to electrostatics. The results of the final achievement tests have shown that students belonging to computer assisted instruction group are better than the constructive learning instruction group in the area of knowledge and comprehension levels, and the difference between the two groups was found to be meaningful ($P < 0,05$). Based on the responses provided to cognitive domain questions, the two groups of students have not shown any meaningful differences in the level of achievement related to the application level of the cognition domain. This has indicated that the computer assisted teaching knowledge and cognition levels are more effective than the 7E model. However, when the final attitudes tests are considered there are no basic differences between these two instruction methods.

Based on the result of this study it can be suggested that; for physics students, there is a need to determine the existing misconceptions in various areas of physics and lead those students to design and develop suitable computer assisted material. The use of new technologies should be encouraged in the application of the 7E model of constructivist learning and the students should be supported with the new technologies in physics classes to ensure a better quality of learning. As it is considered, it is necessary but not adequate to utilize the various version of the constructivist learning theory such as four staged, 5E and 7E models, the computer technologies in a larger scales should be introduced to the education system to help students to interact on one to one basis, develop skills of self learning and better use of the new technologies. Physics teachers should be educated to be familiar with the constructivist learning and skilled in working with the new technologies to enable them to develop simulations and software animations for use in a learning environment. It is further suggested that more research should be carried out on applications of the constructivist learning method in various areas of physics.

The conclusions reached in this study, as no doubt, have been limited by the sampling presented. Further work would contribute to a better understanding of the subject and help to its wider applicability.

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