Examining the Differences of Self-Regulated Learning Strategies (SRL) - Cognitive and Metacognitive - For University ESL/FSL Courses in Canada, Chile, Turkey and Iran

Firas Khairi Yhya Alhafidh
Faculty Lecturer-Advanced English, School of Foreign Languages, ISTANBUL TECHNICAL UNIVERSITY
e-mail: yhyaf@itu.edu.tr
ORCID: 0000-0001-9256-7239

Carlos Marcelo
Full Professor, Faculty of Education, UNIVERSIDAD DE SEVILLA (Spain)
e-mail: marcelo@us.es
ORCID: 0000-0002-8547-367X

ABSTRACT
Analyzing the process of how students self-regulate their learning has always been an educational research interest due to changing demographics of Digital Native learners (Prensky, 2001). This research focuses on lesson planning adapted to the Self-Regulated Learning Strategies university students develop when learning English or French and the specific factors that play a major role in defining their Self-Regulation Learning Strategies and specifically the Metacognitive and Cognitive ones. Pintrich's (2000b) Motivated Strategies for Learning Questionnaire (MSLQ) standardized set of learning scales was used, and specifically the Cognitive and Metacognitive scales (CMS), each of which had a set of sub-scales of Rehearsal (ENS), Elaboration (ELB), Organization (ORG), Critical Thinking (PEC), and Metacognitive Self-Regulation (ARM). Data were collected from a sample of 491 students from universities in Turkey, Chile, Iran, and Canada. The research results indicated above mean average (M=3.4) use of each of the Self-Regulated Learning strategies by the students in the four institutions and slightly higher mean (M=3.5) for the Critical Thinking strategy. The results also indicated differences in the SRL strategies among the four institutions.

KEYWORDS: University Education, English/French courses, Self-Regulated Learning, Technology, Social Media, Digital native, ESL, FSL.

INTRODUCTION
The accelerated pace of technological inventions in language learning is multiplied by creating more useful online communication tools that has by default an impact on our communication, cognitive behavior, and consequently how students take control of their own learning. According to Pintrich (1999a, 1999b) and Zimmerman & Martínez Pons (1986), students use a variety of strategies to regulate certain cognitive, motivational and behavioral aspects as well as certain environmental characteristics. Hence, the need to understand the relationship between the use of technology and the cycle of SRL becomes more evident with the increase demand on the integration of learning technologies in formal and informal learning situations (Corrin et al., 2010; Margaryan et al., 2011).

Although Self-Regulated Learning first appeared as a personal form of directed learning, it developed into a process of a proactive, aggressive, and consciousness activities leading to motivational aspects and self-efficacy towards accomplishing learning goals (Nejabati, 2015). This idea is also aligned with Zimmerman (2002, p.65) definition of self-regulation as "not a mental ability or an academic performance skill; rather it is the self-directive process by which learners transform their mental abilities into academic skills". Such academic skills were inevitably impacted by the increased reliance of students on technological tools during the learning process, resulting in an adaptation of the Self-regulated learning process. This idea is supported by Kitsantas & Dabbagh (2011), who acknowledge that 2.0 social software technologies (communications tools, resource and experience exchange tools and social network tools) have ample potential to encourage self-regulation.

Nowadays, university lecturers who are "Digital Immigrants" (Prensky, 2001) face the challenge of developing lesson plans aligned to the profile of students characterized as the Web Generation or "Net Generation" according to Lee, Tan, & Goh (2004) or Digital Natives (Prensky, 2001). Digital Natives are also characterized as massive consumers of information, share in instances of online communication using the various existing tools such as Skype, Adobe Connect, Webex, Facebook, Twitter, etc. (Barnes, Marateo, & Ferris, 2007, Oblinger & Oblinger, 2005, Philip, 2007). Hence, the demographics of the learning profile for their students mandate the lecturers to understand how students self-regulate their learning. This research will provide answers, and

recommendations for lecturers on how to accommodate the Digital Natives SRL strategies into their lesson plans.

Throughout the last decades, many investigations have been published on the reach of communication technologies on memory, information processing, cognitive processing and, consequently, or way of learning (Pressley, M., Almasi, J., Schuder, T., Bergman, J., Hite, S., El-Dinary, P. B., & Brown,1994). Students (Digital Natives) became more independent and autonomous learners as they have almost unlimited access to a variety of web applications for language learning and specifically English or French. Schneckenberg, Ehlers & Adelsberger (2011) indicated that technology provided students with a gateway of options and alternatives for learning that support the use of self-regulated strategies (Bernacki, Aguilar & Byrnes, 2011). Hence, Digital Natives experienced an impact of their SRL as they extensively integrate technology into their learning process. As Valentín et al (2013) stated that the relation between SRL and technology may even become casual.

As a consequence of the accelerated development of new technological applications of web communication, teachers face the dilemma of having to reorganize their course plans to align their activities in order to optimize the learning process. In addition, the new Generation Z "Gen Z" (Carrington, Rowsell, Priyadharshini, Westrup, 2016) or "Digital Natives" according to Prensky (2001), who are already an integral part of society, focus on greater access to web, and therefore, are more exposed to the impact of the use of digital technologies in the cycle of regulating their language learning. From this point of view, Digital Natives are already ahead of the curve since technology can help learner to self-regulate (Azevedo et al., 2005; Hadwin, Oshige, Gress, & Winne, 2010).

OBJECTIVES OF THE RESEARCH

The objective was to determine the Self-Regulated Learning strategies (SRL), specifically the Cognitive and Metacognitive for university Digital Native students learning English or French as a Second/Foreign Language. We essentially attempted to address and answer the following questions fundamental in determining the Self-Regulation Learning profiles of the Digital Natives:

- What key Cognitive and Metacognitive learning strategies students use to guide and direct their own learning process?
- Are there differences in the SRL for the students coming from the four different institutions/countries?
- What are the differences in SRL among the students from the four institutions/countries?
- How would teachers use the results of this study in their lesson plans?

METHODS

In order to shed light and provide insights on the important question of how teachers would benefit from analyzing the SRL profiles and patterns of their students, we used a standardized questionnaire called Motivational Strategies for Learning Questionnaire (MSLQ) developed by Printrich, Smith, Garcia, & McKeachie (1991). For the focus of this research, we chose the Cognitive and Metacognitive Learning Strategies (CMS) component of the MSLQ. The CMS included 31 Sub-scales assessed on a Likert scale of 1 (Never) to 5 (Always). The questionnaire included a set of statements to measure the sub-scales of Rehearsal, Organization, Critical Thinking, and Metacognitive Self-Regulation. The quantitative data were collected online using Lime Survey, and the data were analyzed for their validity and reliability using SPSS statistical software.

SAMPLE OF PARTICIPANTS

The data collected was composed of samples from universities in Chile, Iran, Turkey, and Canada. A total of 491 responses were collected for the MSLQ-CMS questionnaire. The 491 respondents' gender demographic was 57.69% female, 26.16% male, and 16.15% preferred not to declare their gender. The age of the respondents was 69.47% under 21 (Digital Natives), 17.77% over 21 years (Non-Digital Natives) and 12.76% did not respond. This meant that the majority of the respondents fell within the range of the birth years of the "Digital Natives" from 1989 onwards (Bennett, Maton, Kervin, 2008). The participating students' distribution included 136 (27.7%) participants from Turkey, 164 (33.4%) from Chile, 170 (34.62%) from Iran, and 21 (4.28%) from Canada (all universities will stay anonymous as requested).

All the students were attending English or French courses at their universities. In their 2005 study of sample size for factor analysis, after comparing different ratios between subject and number of sub-scales, Costello and Osborne (2005) concluded that a ratio of 10:1 or 20:1 increases the correctness of factor structure in factor analysis. Based on these ratios, the correct factor structure increased to 60% or 70%, respectively. Since the questionnaire used in the present research consisted of 31 Sub-scales, the anticipated 491 participants taking part fell within the desired ration 1:15.8, and therefore the factorial analysis carried out produced solutions that were considerably accurate.

RELIABILITY

The data collected from the 491 participants were analyzed using the SPSS software in order to determine the stability of the data by applying a Cronbach's Alfa test, Normality Kurtosis Test using the statistical model for Kolmogorov-Smirnov (KS) and the Shapiro-Wilks (SW), ANOVA one way analysis to determine and identify the differences among the participating institutions, and factorial analysis to reduce the data with the KMO and Bartlett analysis in order to determine the most relevant factors of Self-Regulated strategies of learning.

The CMS component of the MSLQ included scales about Rehearsal (ENS), Elaboration (ELB), Organization (ORG), Critical Thinking (PEC), and Metacognitive Self-Regulation (ARM) strategies.

A Cronbach's Alpha reliability analysis was performed to test the internal consistency of each sub-scale by considering values greater than or equal to .70 as an acceptable level for data reliability, validating the range of correlations between elements between .15 and .85 to indicate a high internal consistency (DeVellis, 2003), and demonstrating high reliability of the average correlation between the scales, which had to fall between .15 and .50 (Clark and Watson, 1995). Table 1 presents the descriptive statistics of the Mean and Standard Deviation for each of the scales of CMS.

Table 1: Mean and Standard Deviation for Self-Regulated Learning Measures

Scale	M	SD
Rehearsal (ENS)	3.43	0.78
Elaboration (ELB)	3.44	0.74
Organization (ORG)	3.32	0.83
Critical thinking (PEC)	3.52	0.80
Metacognitive self-regulation (ARM)	3.38	0.56

Note. n = 491

Table 2 illustrates the Cronbach's Alpha correlations, between elements, and the average correlation between elements for each of the scales. The Cronbach's Alpha for all scales of the CMS showed acceptable results with levels greater than or equal to .70, showing a good internal consistency. The average correlation between elements for each sub-scale was between .15 and .50, which indicates a high reliability. The only exception was the Rehearsal sub-scale (ENS=.68). The correlations between the scales were between .15 and .85 in all the CMS sub-scales indicating a high internal consistency. The notable exception was the scale of Metacognitive Self-Regulation (ARM= -.10-.47).

Finally, the mean correlation between the scales for each scale was between .15 and .50, which also indicated a high reliability. We then examined the correlation matrix between elements and the statistics of total elements of the two scales to obtain a more complete picture of the matter in question. An examination of the sub-scales analysis of the Rehearsal (ENS) strategy revealed that Cronbach's alpha would decrease. As a result, the sub-scale elements were not removed. In the Metacognitive Self-Regulation strategy (ARM), two elements, namely ARM1 and ARM8, were negatively inter-correlated with the other elements. If these two elements were eliminated, the Cronbach's alpha would increase to .76 and .77 respectively. Given the fact that the Cronbach's alpha and the average correlation between the elements indicated a high reliability, Cronbach's alpha was minimal, it was not necessary to eliminate the two elements of the sub-scale.

Table 2: Cronbach's Alpha, Inter-Item Correlations and Average Inter-Item Correlation for Self-Regulated Learning Measures

Scale	Cronbach's α	Inter-Item Correlations	Average Inter-Item Correlation
Rehearsal (ENS)	0.68	.25-.55	0.35
Elaboration (ELB)	0.76	.20-.52	0.35
Organization (ORG)	0.72	.22-.53	0.40
Critical thinking (PEC)	0.82	.40-.57	0.48
Metacognitive self-regulation (ARM)	0.74	-.10-.47	0.20

Note. n = 491

KAISER-MEYER-OLKIN (KMO) AND BARTLETT'S TESTS

We also conducted suitability test of the data for structure detection using the KMO and Bartlett's tests. The results are shown in Table 3.

Table 3: Results of KMO & Bartlett's Tests

Scale	KMO Measure	Bartlett's test $\chi 2$	p
Rehearsal (ENS)	.67	341.39	< .001
Elaboration (ELB)	.80	651.22	< .001
Organization (ORG)	.73	409.23	< .001
Critical thinking (PEC)	.83	769.33	< .001
Metacognitive self-regulation (ARM)	.85	1102.91	< .001

The KMO Measure of Sampling Adequacy indicated the proportion of variance in the variables in a study that might be caused by underlying factors. High values (close to 1.0) indicated that patterns of correlations were relatively compact and so factor analysis would yield distinct and reliable factors. Kaiser (1974) recommended values greater than 0.5 as acceptable. As shown in Table 3, the ELB (.80), PEC (.83) and ARM (.85) sub-scales were considered as great, the ORG (.73) sub-scale was good, and the ENS (.67) sub-scale was mediocre (Hutcheson and Sofroniou, 1999, pp. 224-225). We also applied Bartlett's test of sphericity to verify that the variables were unrelated and consequently were unsuitable for structure detection (Cochran-Smith, 1981).

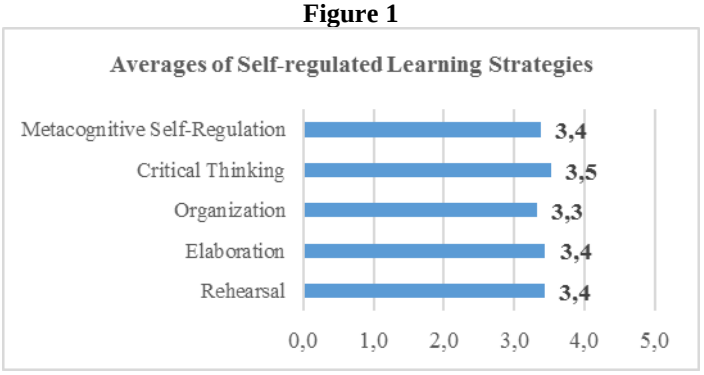
As shown in Table 3, Bartlett's test for each sub-scale was highly significant ($p < 0.001$), and therefore factor analysis was appropriate. We, then, applied the Tests of Normality- statistical model for Kolmogorov-Smirnov (KS) and the Shapiro-Wilks (SW)- yielded the significance results of .000 (or > .05), indicating a non-normal distribution of data, i.e. the hypothesis of a normal distribution was rejected. The Skewness numbers and the Std. Error of Skewness overall results yielded a positive skew of the data. However, when we analyzed each of the scales taking into consideration the K>1 or < 1 rule, and multiplying the Std. Error of Skewness by .2, we got a positive skewness greater than the Std. Error Skewness (.220) for ENS (-.383), ELB (-.329), ORG (-.270), PEC (-.490), and ACP (-.332). In contrast, the scales of ARM (-.189) and ESR (-.114) registered a skewness lower than the Std. Error of Skewness (.220).

SRL STRATEGIES DESCRIPTIVE ANALYSIS RESULTS

We identified the levels and percentages of the development of Self-Regulation Strategies during the learning process. The survey gave us the following overall results for the four participating institutions (Figure 1):

- A high average fluctuating between 3.3 and 3.5, indicating that most of the learners used Self-Regulated strategies.
- The strategy of Critical Thinking yielded the highest average of 3.5.
- The strategy Organization showed the lowest level of 3.3, an indication that most learners did not put a lot of emphasis on organizing their thoughts or ideas during the learning process.

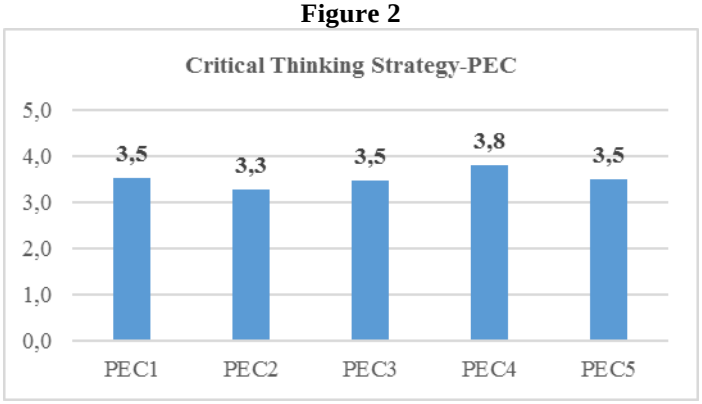
Figure 1



Taking a more in-depth look at the Critical Thinking sub-scales (Figure 2), we identified a high average of 3.8 for the PEC 4 statement "*When I study for this course, I go over my class notes and make an outline of important ideas."* This indicates that most students consider taking notes during class as important for their learning. We also identified an equal score of 3.5 for PEC1 (*When I study for this course, I outline the material to help me*

organize my thoughts.), PEC3 (*I make simple charts, diagrams, or tables to help me organize the course material.)*, and PEC5 (*Whenever I read or hear a statement or conclusion in this course, I think about possible alternatives*.), which supported the idea that learners did use critical-thinking strategies for their learning. The lowest score among the sub-scales, 3.3, was related to the PEC3 statement indicating lower focus from the learners on validating the ideas or conclusions presented in the class.

Figure 2



As far as the Organization strategy sub-scales (Figure 3), the results indicated that learners used the ORG2 strategy when organizing their learning (*When I study for this course, I go through the course material and my class notes and try to find the most important ideas.*). We also noted that ORG3 (*I make simple charts, diagrams, or tables to help me organize the course material.*) yielded the lowest score of 2.9, which indicated that learners did not organize synthesized information when learning.

Figure 3

SELF-REGULATION STRATEGIES PROFILE PER INSTITUTION/COUNTRY

Looking at the overall data for each SRL strategy per each institution, we came up with the following preliminary results of the Mean and *Standard Deviation* for each strategy (see table 4):

- Students from Iran highest score was for the Rehearsal strategy (3.25, *1.15*) followed closely by the Metacognitive Regulation strategy (3.24, *1.06*). Iranians also scored lowest for the Elaboration strategy (2.99, *1.08*).
- Students from Turkey highest score was for the Critical Thinking strategy (3.7, *0.94*) followed closely by the Metacognitive Regulation strategy (3.6, *1.05*).
- Students from Chile highest score was for the Elaboration (3.79, *1.00*) and Critical Thinking (3.79, *1.00*) strategies followed by the Rehearsal strategy (3.5, *1.23*). Their lowest score was for the Organization strategy (3.25, *1.29*).
- Students from Canada highest score was for the Elaboration (3.65, *1.14*) and Organization (3.65, *1.29*) strategies followed by the Metacognitive Regulation strategy (3.46, *1.19*). Their lowest score was for the Critical Thinking strategy (3.25, *1.12*).

Table 4: Comparative Table for the Mean and Standard Deviation for each of the SRL Strategies

UNIVERSITY	Rehearsal ENS (M, *SD*)	Elaboration ELB (M, *SD*)	Organization ORG (M, *SD*)	Critical Thinking PEC (M, *SD*)	Metacognitive Regulation ARM (M, *SD*)
Iranian University	3.25, *1.15*	2.99, *1.08*	3.22, *1.08*	3.16, *1.06*	3.24, *1.06*
Turkish University	3.5, *1.05*	3.5, *1.02*	3.5, *1.03*	3.7, *0.94*	3.6, *1.05*
Chilean University	3.55, *1.04*	3.79, *1.00*	3.25, *1.15*	3.8, *1.00*	3.36, *1.09*
Canadian University	3.33, *1.23*	3.65, *1.14*	3.65, *1.29*	3.25, *1.12*	3.46, *1.19*

DIFFERENCES OF SIGNIFICANCE AMONG THE FOUR INSTITUTIONS-ANOVA

A one-way ANOVA analysis of variance was conducted to explore the differences, among the students from the four institutions. At first, the Levene Statistics Test results yielded insignificant levels confirming that the homogenous variance of the results was not violated ($p>.05$) for all the strategies: Rehearsal (ENS) was .858, Elaboration (ELB) .325, Organization (ORG) .065, Critical Thinking (PEC) .725, and Metacognitive Self-Regulation (ARM) .073.

Afterwards, a ANOVA analysis (Between and Within Groups) of the F and the significance differences among all strategies except for the ORG one was applied. The results indicated the following differences among the four institutions:

- ENS strategy $F(3, 487) = 3.38$, $p<.05$, with Chile (M=3.55, SD=.76) higher than Iran (M=3.29, SD=.78).
- ELB strategy $F(3, 487) =37.03$, $p<.001$, with Chile (M=3.79, SD=.61) higher than Turkey (M= 3.50, SD= .67) and Iran (M=3.03, SD=.70)
- ORG strategy $F(3, 487) =2.64$, $p<.05$, had no significant differences
- PEC strategy $F(3, 487) = 20.05$, $p<0.001$, with Chile (M=3.79, SD=.76), higher than Canada (M=3.25, SD=.87), Iran (M=3.18, SD=.76), and Turkey (M=3.65, SD=.73).
- ARM strategy $F(3, 487) =5.77$, $p=.001$, with Chile (M=3.36, SD=.55), higher than Turkey (M=3.53, SD=.57), and Iran (M=3.27, SD=.51).

FACTORIAL ANALYSIS

Based on the ANOVA analysis, we conducted a factor analysis dimension reduction of the 31 survey scales . In keeping with Bartlett's test ($p = .000$) and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (.912), the data was adjusted for the application of the factor analysis. A Varimax rotation with a factorial load greater than 0.40 was considered. The results indicated that the number of factors should be 7 and would therefore explain a variation of 55.366% of the data. However, and given the fact that Factor 7 had only two scales, we decided not to include it in the factor structure and analysis (Costello and Osborne, 2005).

FACTOR 1: Linking knowledge from various sources. This factor refers to students linking what they learned in the course to their prior knowledge in order to understand content. Students also used various sources of information to help them form an understanding of the subject matter to help them engage in independent and active learning.

Table 5

Sub-scale	Factorial Load	*M*	*SD*
ELB1 - When I study for this course, I bring together information from different sources, such as lectures, discussions, text books, articles, and the internet.	.489	3.12	1.17
ELB6 - I try to apply ideas from the course material to other class activities such as lecture and discussion.	.584	3.29	1.10
ELB5 - I try to understand the material in this course by making connections between the course material and the ideas from the lectures.	.628	3.61	1.06
ELB3 - When studying for this course, I try to relate the material to what I already know.	.647	3.83	1.04
ELB2 - I try to relate ideas in this course to those in other courses whenever possible.	.727	3.59	1.09

As shown in Table 5, the most used strategy (ELB3: *M* = 3.83, SD = 1.04) among university students was linking what they already know to new material in order to help them comprehend the content. Also, students frequently tried to make connections between the course material and the ideas from the lectures (ELB5: *M* = 3.61, SD = 1.06) and tried to relate ideas from one course to another (ELB2: *M* = 3.59, SD = 1.09) while they were learning new course material. On the other hand, students did not frequently apply ideas from the course content to other class activities (ELB6: *M* = 3.29, SD = 1.10), nor did they bring together information from different sources (ELB1: *M* = 3.12, SD = 1.17).

FACTOR 2: Questioning and analyzing information learned. Factor 2 refers to reflecting upon and evaluating the validity of concepts encountered in the course. As Facione (1990) defined critical thinking as "*a purposeful and self-regulatory judgment which is concluded to interpretation, analysis, evaluation, and inference as well as explanations of different types of arguments based on logical judgment*". It also includes considering alternatives to accepted ideas and devising new ways of doing things. Another strategy included in this factor was the use of questions to better comprehend the subject matter. In the overall, these strategies promoted deep understanding and higher-order thinking.

Table 6

Sub-scale	Factorial Load	*M*	*SD*
ARM2 - When studying for this course, I make up questions to help me focus on the course material.	.470	3.16	1.05
PEC1 - I often find myself questioning things I hear or read in this course to decide if I find them convincing.	.657	3.53	1.08
PEC5 - Whenever I read or hear a statement or conclusion in this course, I think about possible alternatives.	.661	3.51	1.06
PEC2 - When an idea, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence.	.709	3.28	1.05

Examining the sub-scales in Table 6, we saw that students often question things they heard or read in the course (PEC1: *M*=3.53, SD = 1.08), and thought of possible alternatives when they read or heard a statement or conclusion (PEC5: *M* =3.51, SD = 1.06). On the other hand, students did not frequently reflect upon whether there was good supporting evidence when arguments were presented in the course (PEC2: *M*= 3.28, SD = 1.05), nor did they create questions to help them focus on the course material (ARM2: *M* =3.16, SD = 1.05).

FACTOR 3: Metacognitive monitoring. Metacognitive monitoring strategies focus on the awareness, knowledge and control aspects of metacognition. This is in alignment with Pintrich and De Groot (1990) who stated that that "*students should acquire the necessary knowledge and skill to choose and apply cognitive, metacognitive, and behavioural strategies*." Students tried to organize what they know and what they do not know as regards course content. Likewise, students monitored the learning process and used appropriate learning strategies to ensure that they comprehended what they identified as important and challenging.

Table 7

Sub-scale	Factorial Load	*M*	*SD*
ORG2 - When I study for this course, I go through the course material and my class notes and try to find the most important ideas.	.511	3.81	1.00
ARM12 - If I get confused taking notes in class, I make sure I understand things later.	.591	3.50	1.11
ARM10 - When studying for this course, I try to determine what I do not understand well.	.621	3.74	1.00
ARM3 - When I become confused about something while I am studying for this course, I go back and try to understand it.	.646	3.87	0.99

In Table 7, students used a great many metacognitive monitoring strategies while studying in the course as a process of reflection on how to improve their learning (Anderson, 2002). Students usually went back to material they did not understand if they were confused while studying (ARM3: *M* = 3.87, SD = 0.99). They also typically went through the course material and class notes to identify the most important ideas during the course (ORG2:

M = 3.81, SD = 1.00). Students also frequently attempted to determine what they did not fully comprehend while studying (ARM10- *M*= 3.74, SD = 1.00), and were likewise sure to understand things later if they were confused while taking notes in class (ARM12: *M*=3.50, SD = 1.11).

FACTOR 4: Selecting and adapting learning strategies. Selecting and adapting learning strategies refers to how students adapted and regulated the way they study based on the nature of the course, including the material, tasks, and instructor's teaching style (Montalvo & Torres, 2008). This factor also included students' selection of learning strategies based on the goals they set to direct their learning in the course.

Table 8

Sub-scale	Factorial Load	*M*	SD
ARM11 - When I study for this course, I set goals for myself in order to direct my activities in each study period.	.419	3.34	1.11
ARM4 - If the course material is difficult to understand, I change the way I study the material.	.610	3.29	1.11
ARM7 - I try to change the way I study in order to fit the course requirements and instructor's teaching style.	.623	3.17	1.09
ARM5 - Before I study new course material in detail, I often look it over first to see how it is organized.	.629	3.24	1.17

As shown in Table 8, students did not usually select and adapted their learning strategies while studying. They did not often set goals for themselves to direct their own learning (ARM11: *M* =3.34, SD=1.11), nor did they modify the way they study the material if the material was hard to comprehend (ARM4: *M* =3.29, SD=1.11). Likewise, students did not frequently familiarize themselves with how material was organized before studying the material in detail (ARM5: *M*=3.24, SD=1.17), and they did not often make an effort to change the way they study in order to suit the instructor's teaching style and the course requirements (ARM7: *M* =3.17, SD =1.09).

FACTOR 5: Organization of information. Organization of information refers to the ways in which students identified important constructs and related these ideas to each other. This strategy included outlining material as well as using tables and charts to enhance one's understanding of the course material and improve one's learning performance.

Table 9

Sub-scale	Factorial Load	*M*	*SD*
ORG1 - When I study for this course, I outline the material to help me organize my thoughts.	.673	3.24	1.10
ORG4 - When I study for this course, I go over my class notes and make an outline of important ideas.	.683	3.38	1.11
ORG3 - I make simple charts, diagrams, or tables to help me organize the course material.	.717	2.86	1.26

As shown in Table 9, students did not often use specific strategies to help them organize the information they learned in the course. More specifically, they did not tend to go over their class notes and made an outline of important points when studying for the course (ORG4: *M*=3.38, SD=1.11), nor did they outline the material to help them organize their thoughts (ORG1: *M*=3.24, SD=1.10). Moreover, students rarely organized course material by creating basic visual representations such as charts, diagrams, or tables (ORG3: *M* =2.86, SD=1.26).

FACTOR 6: Memory rehearsal strategy. This factor refers to students using memorization / rehearsal strategies to remember basic information such as facts, points, and names from the course.

Table 10

Sub-scale	Factorial Load	*M*	*SD*
ENS4 - I make lists of important information (vocabulary items, idioms, verb tenses, etc.) for this course and memorize the lists.	.439	3.43	1.19
ENS3 - I memorize key words to remind myself of important ideas discussed in this course.	.473	3.73	1.05
ENS2 - When studying for this course, I read my class notes and the	.772	3.38	1.06

course material over and over again.			
ENS1 - When I study for this course, I practice saying the material to myself over and over.	.802	3.16	1.07

Table 10 shows that students typically memorized key words to help them remember important ideas dealt with in the course (ENS3: *M* =3.73, SD=1.05). They did not frequently create and memorize lists of important information for the course (ENS4: *M* =3.43, SD=1.19). Likewise, students did not often re-read class notes and course material when studying for the course (ENS2: *M* =3.38, SD=1.06), nor did they practice repeating the material to themselves (ENS1: *M* =3.16, SD=1.07).

FINDINGS AND RECOMMENDATIONS FOR TEACHERS

The approach to draw conclusions and recommendations for teachers of the four institutions was based on looking at the factorial analysis to determine the Scale Mean (*M*) and Standard Deviation (SD) as a benchmark for each of the sub-scales.

IRANIAN UNIVERSITY

Starting with Iranian students, the following analysis of the factors were:

Factor 1: ELB1 (*M*=2.84, SD=1.17) and ELB 6 (*M*=2.94, SD=1.07) were below Factor 1 (*M*=3.05) In both ELB1, which referred to collecting data and information from different resources. Iranian students showed lower levels of activities. Hence, our recommendation for the lecturer to plan activities that will emphasize and enhance data and information collection and how to apply and link ideas from the data and information to the specific activities in the classroom.

Factor 2, ARM2 (*M*=2.93, SD=1.08) was lower than Factor 2 (*M*=3.11). Iranian students need more emphasis or activities to develop questions that will help them focus on the materials.

Factor 3, ARM10 (*M*=3.36, SD=1.04) was lower than Factor 3 (*M*=3.44). This indicated that students need help to determine the parts of the lesson or materials they do not understand.

Factor 4, ARM7 (*M*=3.05, SD=1.02) was lower than Factor 4 (*M*=3.15), which indicated that students have difficulty in changing their study habits to improve their understanding.

Factor 5, ORG3 (*M*=2.93, SD=1.24) was lower than Factor 5 (*M*=3.17). This indicated that the lecturer needs to incorporate more activities that will help students draw diagrams, charts or tables to help them better understand the materials and the activities.

Factor 6, ENS4 (*M*=3.21, SD=1.19) was lower than Factor 6 (*M*=3.25), which indicated that students need more exercise listing the vocabulary, idioms and verb tenses to help them better memorize.

TURKISH UNIVERSITY

Examining the results from the Turkish institution, we detected the following:

Factor 1, ELB6 (*M*=3.32, SD=0.97) was lower than Factor 1 (*M*=3.57). For ELB6, which referred to applying ideas related to the course materials, Turkish students showed lower levels of activities. Hence, our recommendation for the lecturer to plan activities that will emphasize and enhance data and information collection and how to apply and link ideas from the data and information to the specific activities in the classroom.

Factor 2, ARM2 (*M*=3.21, SD=1.18) was lower than Factor 2 (*M*=3.51). Turkish students need more emphasis or activities to develop questions that will help them focus on the materials.

Factor 3, ARM12 (*M*=3.65, SD=1.00) was lower than Factor 3 (*M*=3.85). This indicated that students need help determine the parts of the lesson or materials they did not understand.

Factor 4, ARM7 (*M*=3.38, SD=1.11) was lower than Factor 4 (*M*=3.47), which indicated that students had difficulty in changing their study habits to improve their understanding.

Factor 5, ORG3 (*M*=2.91, SD=1.25) was lower than Factor 5 (*M*=3.34). This indicated that the lecturer needs to incorporate more activities that will help students draw diagrams, charts or tables to

help them better understand the materials and the activities.

Factor 6, ENS1 (*M*=3.13, SD=1.08) was lower than the Factor 6 (*M*=3.51), which indicated that students need more exercise listing the vocabulary, idioms and verb tenses to help them better memorize.

CANADIAN UNIVERSITY
Examining the results from the Canadian institution, the results indicated the following:

Factor 1 ELB6 (*M*=3.57, SD=1.12) was lower than Factor 1 (*M*=3.71). For ELB6, Canadian students showed lower levels of activities. Hence, our recommendation for the lecturer to plan activities that will emphasize and enhance data and information collection and how to apply and link ideas from the data and information to the specific activities in the classroom.

Factor 2, ARM2 (*M*=2.62, SD=1.24) was lower than Factor 2 (*M*=3.04). Canadian students need more emphasis or activities to develop questions that will help them focus on the materials.

Factor 3, ARM12 (*M*=3.38, SD=1.36) was lower than Factor 3 (*M*=3.83). This indicated that students need help determine the parts of the lesson or materials they do not understand.

Factor 4, ARM7 (*M*=3.19, SD=1.16) was lower than Factor 4 (*M*=3.35), which indicated that students have difficulty in changing their study habits to improve their understanding.

Factor 5, ORG3 (*M*=3.38, SD=1.40) was lower than Factor 5 (*M*=3.56. This indicated that the lecturer needs to incorporate more activities that will help students draw diagrams, charts or tables to help them better understand the materials and the activities.

Factor 6, ENS1 (*M*=3.05, SD=1.16) was lower than Factor 6 (*M*=3.33), which indicated that students need more exercise listing the vocabulary, idioms and verb tenses to help them better memorize.

CHILEAN UNIVERSITY
Examining the results from the Chilean universities, we can detect the following:

Factor 1, ELB1 (*M*=3.06, SD1.19) was lower than Factor 1 (*M*=3.85). For ELB1, which referred to applying ideas related to the course materials, Chilean students showed a lower levels of data collection activities. Hence, our recommendation for the lecturer to plan activities that will emphasize and enhance data and information collection.

Factor 2, PEC2 (*M*=3.18, SD=1.12) was lower than Factor 2 (*M*=3.54). Chilean students need more emphasis or activities to help them assess the validity of the idea, interpretation, or conclusions about certain materials or ideas.

Factor 3, ARM12 (*M*=3.58, SD=1.36) was lower than Factor 3 (*M*=3.92). This indicated that students need help determine the parts of the lesson or materials they do not understand.

Factor 4, ARM7 (*M*=3.19, SD= 1.16) was lower than Factor 4 (*M*= 3.3, which indicated that students have difficulty in changing their study habits to improve their understanding.

Factor 5, ARM1 (*M*=2.40, SD=1.20) was lower than Factor 5 (*M*=2.90). This indicates that the lecturer needs to incorporate more activities that will help students focus more and not get deviated or distracted during the exercises.

Factor 6, ENS1 (*M*=3.17, SD=1.04) was lower than Factor 6 (*M*=3.55), which indicated that students need more exercise listing the vocabulary, idioms and verb tenses to help them better memorize.

COMMUNALITIES AMONG THE FOUR INSTITUTIONS
The study also showed some of the communalities of learning strategies shared by the four institutions, which we thought would be interesting to highlight as a reference for the overall framework of the strategies students mostly shared when learning a language. All of the commonly shared sub-scales registered high Mean levels, and had 1 SD. These sub-scales were ELB3 and ELB5 (Factor 1), PEC5

(Factor 2), ARM3 (Factor 3), ORG4 (Factor 5), and ENS3 (Factor 6).

DISCUSSIONS

This research adopted the SRL-MSLQ Questionnaire to determine and assess the level of the self-regulated strategies students (Digital Natives) use when learning ESL or FSL. The results from the four institutions involved indicated that there is above the mean average for all of the SRL strategies. However, the mean average does not lend itself to an exceptional above 4.0 mean, which leads to a conclusion that despite the fact that Digital Natives are by definition natural users of technology in support for their learning activities, their use of SRL strategies did not necessarily translate into effective and high levels of self-regulation (above the 4.0 mean). The idea that technology favors and open gates for alternative learning options is somewhat evident, yet does not go beyond a casual use of technology in both informal and formal situations (Corrin et al., 2010; Margaryan et al., 2011). This idea is also supported by a study carried out by Hannafin and Hannafin (2010) who claimed that use of technology in classrooms supports the self-regulation which in turn promotes learning income. Another finding in this study showed that although the SRL strategies profile of the students from the four institutions registered the same level of mean (M=3.4) in some of the SRL strategies (Rehearsal, Elaboration, and Self-regulated Metacognition), they are different in Critical Thinking (M=3.5) and Organization (M=3.3) strategies. Among the sub-scales of the Critical Thinking strategies, the results indicated that the statement related to "*I try to relate my own ideas to what I am learning in this course*" registered the highest mean level of M=3.8. This result indicated of an autonomous self-regulating learning process teachers could enhance by providing activities for concept mapping; an activity that could trigger shared cognition (Cheng et al, 2014).

Although the study was conducted to determine the use of SRL strategies in ESL/FSL courses, it did not go further than the discovery stages. Subsequent studies could focus on the other variables that could have an impact on the use of SRL strategies such as gender, teaching strategies, context of ESL/FSL versus EFL/FFL, or even the specific technological tools (ICT and social media) use during the learning process.

CONCLUSION

The study focused on highlighting the overall picture of the use of SRL when learning English/French as a Foreign Language in four institutions in four countries. Preliminary results confirmed our assumptions that there are differences in the SRL profile among the four institutions.

The results indicated a moderate-high level of use for all the strategies with an average mean above 3.4, with an exception of the Critical Thinking Strategy registering a 3.5 mean. At the same time, when examining the results from the 6 Factors, we detected higher level in Factor 1 mean (3.57) for Canadians, Factor 2 mean (3.32) for Chileans, Factor 3 mean (3.92) also for Chileans, Factor 4 mean (3.47) for Turks, Factor 5 mean (3.56) for Canadians, and lastly Factor 6 mean (3.55) for Chileans.
The survey also resulted in lower than the average mean of each of the scales among the four different institutions. For Factor 1, Iranians registered a mean of 3.05, Factor 2, Canadians registered a mean of 3.04, Factor 3 registered a mean of 3.44 for Iranians, Factor 4 registered a mean of 2.90 for Chileans, Factor 5 registered a mean of 2.95 also for Chileans, and Factor 6 registered a mean of 3.25 also for Iranians.

The overall conclusion for the teachers would be to use the SRL questionnaire as a tool to adjust and adapt some of the planned activities according to the SRL of the students; an idea supported by Cunningham (2009) who stated that having a well-designed lesson plan actually determines the teaching success. Emphasizing certain activities and capitalizing on others would lead to a more effective, individualized, and critically planned lessons leading to a more significant process of Self-Regulated Learning for students learning a foreign language. The enhancement of the learning strategies would also result in a more autonomous learner profile adapting their strategies as they progress in their language acquisition.

REFERENCES

Azevedo, Roger., Cromley, J. G., Winters, F. I., Moos, D. C., & Greene, J. A. (2005). Adaptive human scaffolding facilitates adolescents' self-regulated learning with hypermedia. Instructional Science, *33*(5–6), 381–412

Anderson, N.J. (2002).The role of Metacognition in second/foreign language teaching and learning. ERIC Digest. Washington, DC: ERIC Clearinghouse on Languages and Linguistics. Retrieved from https://www.govinfo.gov/content/pkg/ERIC-ED463659/pdf/ERIC-ED463659.pdf

Barnes, K., Marateo, R. C., & Ferris, S. P. (2007). Teaching and learning with the net generation. *Innovate: Journal of Online Education, 3*(4), Article 1. Retrieved from http://nsuworks.nova.edu/cgi/viewcontent.cgi?article=1091&context=innovate

Bennett, S. J., Maton, K., & Kervin, L. (2008). The 'digital natives' debate: A Critical review of the evidence. *British Journal of Educational Technology, 39*(5), 775-786. https://doi:10.1111/j.1467-8535.2007.00793.x

Carrington, V., Rowsell, J., Priyadharshini, E., & Westrup, R. (Eds.) (2016). *Generation Z: Zombies, popular culture and educating youth*. Singapore: Springer. Retrieved from https://link.springer.com/content/pdf/10.1007/978-981-287-934-9.pdf

Cheng, B., Wang, M., Mercer, N. (2014). Effects of roles assignment in concept mapping mediated small group learning. *Internet and Higher Education, 23*, 27-38. http://dx.doi.org/10.1016/j.iheduc.2014.06.001

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*(3), 309-319. http://dx.doi.org/10.1037/1040-3590.7.3.309

Cochran-Smith, M. (1991) Learning to Teach against the Grain. Harvard Educational Review: September 1991, Vol. 61, No. 3, pp. 279-311. https://doi.org/10.17763/haer.61.3.q671413614502746

Corrin, L., Bennett, S., & Lockyer, L. (2010). Digital natives: Everyday life versus academic study. In *Paper presented at the 7th International Conference on Networked Learning*. Aalborg: Denmark.

Costello, A., Osborne, J. (2005). Best Practices in Exploratory Factor Analysis: Four Recommendations for Getting the Most From Your Analysis. Practical Assessment and Research Evaluation, 10:7, https://doi=10.1.1.110.9154

Cunningham, G. (2009). The new teacher's companion: practical wisdom for succeeding in the classroom. ASCD Publications.

Deci, E. L. & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum Press.

DeVellis, R. F. (2003). *Scale development: Theory and applications* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Facione, P. A. (1990). Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction. Research Findings and Recommendations.

Hadwin, A. F., Oshige, M., Gress, C. L. Z., & Winne, P. H. (2010). Innovative ways for using gStudy to orchestrate and research social aspects of self-regulated learning. Computers in Human Behavior, 26(5), 794–805.

Hannafin, M.J., and Hannafin, K.M. (2010). Cognition and student-centered, web-based learning: Issues and implications for research and theory. In J.M. Spector, D. Ifenthaler, P. Isaias, and K. Sampson (Eds.), Learning and instruction in the digital age pp. 11–23. New York: Springer Science Business Media.

Hutcheson G. D., & Sofroniou, N. (1999). The multivariate social scientists: Introductory statistics using generalized linear models. London [u.a.]: Sage. pp. 224-225

Kaiser, H.F. Psychometrika (1974) 39: 31. https://doi.org/10.1007/BF02291575

Kitsantas, A., & Dabbagh, N. (2011). The role of web 2.0 technologies in self-regulated learning. *New Directions for Teaching and Learning*, (126), 99–106. doi:10.1002/tl.448.

Kirsh, D. (2005). Metacognition, distributed cognition and visual design. In P. Gardinfors & P. Johannson (Eds.), *Cognition, education, and communication technology* (pp. 147-180). Mahwah, NJ: Lawrence Erlbaum Associates. Retrieved from https://philpapers.org/archive/DAVMDC

Lee, C. S., Tan, D. T. H., & Goh, W. S. (2004). The next generation of e-learning: Strategies for media rich online teaching and engaged learning. *International Journal of Distance Education Technologies, 2*(4), 1-17. https://doi:10.4018/jdet.2004100101

Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are digital natives a myth or reality? University students' use of digital technologies. *Computers & Education*, *56*(2), 429–440. doi:10.1016/j.compedu.2010.09.004.

Montalvo, F.T., & Torres, M.C. (2008). Self-regulated learning: Current and future directions. Electronic Journal of Research in Educational Psychology, 2(1), 1-34.

Nejabati, N. (2015). The Effects of Teaching Self-regulated Learning Strategies on EFL's Reading Comprehension. *Journal of Language Teaching and Research*, *6*(6), 1343. DOI: 10.17507/jltr.0606.23

Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the Horizon*, *9*(5), 1-6. https://doi.org/10.1108/10748120110424816

Pressley, M., Almasi, J., Schuder, T., Bergman, J., Hite, S., El-Dinary, P. B., & Brown, R. (1994). Transactional instruction of comprehension strategies: The Montgomery County, Maryland, SAIL program. *Reading and Writing Quarterly: Overcoming Learning Difficulties, 10*(1), 5-19.

https://doi:10.1080/1057356940100102
Pressley, M., El-Dinary, P. B., Wharton-McDonald, R., & Brown, R. (1998). Transactional instruction of comprehension strategies in the elementary grades. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulated learning: From teaching to self-reflective practice* (pp. 42-56). New York, NY: The Guilford Press.
Oblinger, D., & Oblinger, J. (2005). Is it age or IT: First steps toward understanding the net generation. In D. G. Oblinger & J. L. Oblinger (Eds.), *Educating the net generation* (pp. 2.1-2.20). Boulder, CO: EDUCAUSE. Retrieved from https://www.educause.edu/ir/library/pdf/pub7101b.pdf
Philip, D. (2007). The knowledge building paradigm: A model of learning for Net Generation students. *Innovate: Journal of Online Education, 3*(5), Article 1. http://nsuworks.nova.edu/innovate/vol3/iss5/1
Pintrich, P. R. R., Smith, D., Garcia, T., & McKeachie, W. (1991). A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ). Ann Arbor. Michigan, 48109(August 2016), 1259. https://doi.org/ED338122
Pintrich, P. R., Roeser, R. W., & De Groot, E. A. M. (1994). Classroom and individual differences in early adolescents' motivation and self-regulated learning. *The Journal of Early Adolescence, 14*(2), 139-161. https://doi.org/10.1177/027243169401400204
Pintrich, P. R. (2000b). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 451-502). San Diego, CA: Academic Press. https://doi.org/10.1016/B978-012109890-2/50043-3
Pintrich, P. R., Wolters, C. A., & Baxter, G. P. (2000). Assessing metacognition and self-regulated learning. In G. J. Schraw & J. C. Impara (Eds.), Issues in the measurement of metacognition (pp. 43-97). Lincoln, NE: Buros Institute of Mental Measurements, University of Nebraska-Lincoln.
Sansone, C., & Harackiewicz, J. M. (Eds.). (2000). *Intrinsic and extrinsic motivation: The search for optimal motivation and performance*. San Diego, CA: Academic Press.
Schunk, D. H., & Ertmer, P. A. (1999). Self-regulatory processes during computer skill acquisition: Goal and self-evaluative influences. *Journal of Educational Psychology, 91*(2), 251-260. http://dx.doi.org/10.1037/0022-0663.91.2.251
Schneckenberg, D., Ehlers, U., & Adelsberger, H. (2011). Web 2.0 and competence-oriented design of learning. Potentials and implications for higher education. *British Journal of Educational Technology*, 42(5), 747–762. DOI:10.1111/j.1467-8535.2010.01092.x
Valentín, A., Mateos, P. M., González-Tablas, M. M., Pérez, L., López, E., & García, I. (2013). Motivation and learning strategies in the use of ICTs among university students. *Computers & Education*, 61, 52–58. DOI: 10.1016/j.compedu.2012.09.008
Wolters, C. A., & Rosenthal, H. (2000). The relation between students' motivational beliefs and their use of motivational regulation strategies. *International Journal of Educational Research, 33*(7-8), 801-820. https://doi.org/10.1016/S0883-0355(00)00051-3
Wolters, C. A., Yu, S. L., & Pintrich, P. R. (1996). The relation between goal orientation and students' motivational beliefs and self-regulated learning. *Learning and Individual Differences, 8*(3), 211-238. https://doi.org/10.1016/S1041-6080(96)90015-1
Zimmerman, B. (2002). Becoming a self-regulated learner: an overview. Theory into Practice, 41, 2, pp. 64-70.
Zimmerman, J. (1989). A Social Cognitive View of Self-Regulated Academic Learning. *Journal of Educational Psychology, 81*(3), 329-339.