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## Cognitive and metacognitive strategies employed by Iranian and Turkish EFL readers

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### Abstract

This study focused on cognitive and metacognitive reading strategies and aimed to find out the relationship and differences between two groups of participants' reports on the use of cognitive and metacognitive reading strategies at English Language Teaching Departments of Çanakkale Onsekiz Mart University, Çukurova University, Erciyes University, and Gazi University in Turkey; and Marand University, Tehran University, and Tehran Azad University in Iran. The study firstly investigated how frequently advanced level language students were using cognitive and metacognitive reading strategies, secondly it revealed the relationship between the participants' use of cognitive and metacognitive reading strategies. Moreover, it investigated gender differences among groups in terms of using strategies. The data were collected by means of questionnaires which were delivered participants in the fall semester of 2009-2010 academic year. The results indicated significant differences among groups in terms of frequency use of cognitive and metacognitive strategies indicating the impact of culture on employing strategies.

**Keywords:** *cognition, metacognition, reading strategies, cognitive reading strategies, metacognitive reading strategies*

### Introduction

By the 1960s, the interest into reading research has increased due to the impact of cognitive psychology. Previously, reading researchers aimed to investigate eye movements and eye fixations in order to explore reading process (Li, 2008). With the turn of the 21<sup>st</sup> century, an explosion of research in foreign language reading process including readers' strategies has been observed. They have been aiming to reveal the way how readers manage

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the interaction with written materials. Such studies mainly have been investigating the reading strategies of successful and unsuccessful readers along with individual differences in strategy use, the interaction of their language proficiency with their comprehension of the texts, and employing strategies by different age levels. Besides, the cultural impact of reading strategies also deserves attention from the field of reading psychology. The general consensus is that employing more strategies helps readers for better comprehension.

Reading is referred to as the most important of the four language skills for English as a Foreign Language (EFL) learners as it enables learners to gain exposure to the target language and receive valuable linguistic input to build up language proficiency (Erten & Razi, 2003). Therefore, reading receives special attention in foreign language teaching. It is a skill to get meaning from a reading material and interpret the information. The meaning does not appear on the page directly. In order to comprehend, readers should combine words on the printed pages with their background knowledge by referring to a number of reading strategies that are employed appropriately.

Examining the historical perspectives of reading indicates that the construct of reading instruction has been changing throughout the history. The first notion of reading classes was sounding the words for over a long period. Reading comprehension is generally defined as achieving meaning (Huey, 1968). Therefore, it is beyond decoding words alone without attaching meaning to them. In this respect, Huey describes reading as building images in the mind along with inner speech in order to comprehend a text. However, apart from being a skill mastered by foreign language learners, reading is also a very essential skill for native speakers (Razi, 2007). In order for readers to achieve their purposes in reading the text, they need to follow reading strategies during the process.

### *Reading strategies*

As Aebersold and Field indicate (1999), it would be too optimistic to hope all readers to develop the same reading strategies. They also claim that the readers' use of L1 reading strategies is observed while they are reading a text which is beyond their limit. Furthermore, within this context Parry (1996) indicates that there is a relationship between the function of reading strategies and the culture readers are involved.

Becoming a more efficient reader is not so easy. Basically, readers are demanded to have some other complicated skills as readers follow a very complex process in reading by engaging in different models where the aim is to decode the writer's intended message by referring to background knowledge. Therefore, readers should develop their own strategies to process the information when they read a text.

To highlight the issue, Maghsudi and Talebi (2009) assert that there is a close relationship between cognitive and metacognitive strategies with relevance to L2 reading performance. Furthermore, metacognitive strategies are supposed to be sequential processes that learners apply with the aim of controlling cognitive activities and being sure about a cognitive goal such as understanding a text.

### *Reading strategy studies*

Through the 1970s, reading professionals were firstly interested in the terms of reading strategies and ignored reading skills by thinking reading as an entire process

(Wallace, 1992). Aebbersold and Field (1997, p. 14) define reading strategies as “the mental activities that the readers use in order to construct meaning from a text”.

The first research on characteristics of early L2 readers was investigated by Hosenfeld (1977). Hosenfeld found that there is tendency adopted by good readers to apply a variety number of strategies such as skipping inessential words, guessing from context, reading in broad phrases, and continuing to read in case of a failure in decoding. Hosenfeld conducted a study with ninth grade students learning French including 20 successful readers and 20 poor readers. They were asked to think-aloud reports for each sentence they read by using main-meaning line and word-solving strategies. The results showed that successful readers kept meaning of passage in mind while assigning meaning to sentences, whereas poor readers focused on solving unknown words or phrases.

The results of the study conducted by Anderson (1991) strikingly indicated that the knowledge of strategies is not adequate for both weak and good readers who tend to use same kinds of strategies. This remarkable result reveals that readers also have the knowledge of how they use these strategies apart from knowledge. Only theoretical knowledge about them exposes the necessity of knowing how to use a strategy.

Fischer-Kohn (1986) declared that reading of Chinese students in English could be fostered by applying the strategies as reading slowly and take care that they know each word as they go, vocalizing or voicing the material, either loudly or silently, rereading difficult sentences until they are understood, looking up definitions of all unknown words in a dictionary, analysing complex structures carefully.

Barnett's (1988) study investigating effective reading strategies by employing the strategies revealed that amount of use of effective strategies increased. In addition, Barnett stated that students who were taught strategy use were better in reading through context than learners who were traditionally taught. Thus, it is clear that there is a relationship between strategy use and reading comprehension level.

Block's (1986) study conducted with nine university level ESL and native English students in a remedial reading course. Similarly the learners employed think-aloud reports for each sentence they read by using general strategies and local strategies. According to findings, while more efficient readers utilized their general knowledge, highlighted the overall meaning of text, combined new information with the existing one and distinguished main ideas from supporting points, the poor readers rarely applied any of the these reading strategies during reading.

Another study was conducted by Sarig (1987) with ten female native Hebrew readers studying EFL. Think-aloud reports while reading native language texts and foreign language texts were involved. Readers utilized skimming, scanning, using glossary, decoding meanings of words, paraphrasing, syntactic simplification and identification of text type and use of prior content schemata. Findings indicated that subjects tended to transfer strategies from first language into L2 reading. Moreover, both successful and unsuccessful readers used global strategies and clarification and simplification strategies fostered ineffective poor reading.

Cziko (1980) conducted a study with seventh-grade English speaking students of French and the students of native French-speakers with the aim of investigating the errors of oral reading, native or advanced readers tend to use interactive strategies to depend on graphic and contextual information while less proficient readers have tendencies of relying upon

bottom-up strategies such as graphic information. In the light of this result it can be concluded that readers are required to achieve a certain level of proficiency to employ conceptual strategies.

Mokhtari and Reichard (2004) aimed to find out the differences between American readers who spoke English as L1 and Moroccan readers who spoke English as L2 in terms of metacognitive awareness and frequency of using specific strategies when they read for academic purposes in English. According to results, although both groups seem to have almost similar amount of strategy awareness and strategy use, Moroccan readers were higher users of certain types of strategies than American readers were.

Çubukçu's (2008) study indicated results of instructing advanced EFL learners with a variety of metacognitive strategies for five week. According to results, the most favourable strategies were listed and instructed as following; using personal strengths, inferring meaning, using background information, evaluating, searching according to the goals, reading goals, distinguishing, deciding on the difficulty, revising, and guessing the later topics. She instructed strategies above in a five-week period and the results pointed out that there are remarkable differences between experimental and control groups as the evidence for the effectiveness of teaching metacognitive reading strategies.

Sarıçoban (2002) investigated the strategies of good and poor foreign language readers in pre-reading, while reading and post-reading stages. Preparatory class students at ELT department of Hacettepe University were administered an inventory of strategy use. Moreover, they were also delivered an achievement test which aimed to distinguish good and poor readers. The study reported significant differences between the strategies of successful and unsuccessful readers. The results assist reading teachers to encourage global understanding of the texts, before dealing with smaller units.

Sarıçoban's (2002) study was replicated by Yiğiter, Sarıçoban and Gürses (2005) at Hacettepe University and Atatürk University at the departments of ELT and ELL in order to identify whether there were any differences in strategy use by both good and poor readers. The results indicated that good readers were different from poor readers in the pre, while and post reading stages. The study also indicated the employment of different reading strategies for ELT and EFL learners.

In terms of instructing reading strategies, Razi (2010) developed a metacognitive reading strategy training programme which is shortly known as METARESTRAP. He applied the program to preparatory students along with freshmen at English Language Teaching (ELT) Department of Çanakkale Onsekiz Mart University (ÇOMU). The results of his study indicate the vital impact of appropriate use of metacognitive reading strategies in terms of becoming an efficient reader.

### *Cognitive reading strategies*

Cognitive strategies are considered popular and necessary for language learners as O'Malley and Chamot (1990) view them as the first step in learning. Cognitive strategies as direct language learning strategies, are preferable to help students form and revise internal mental models and receive and produce messages in the target language with a conscious manner. By the help of cognitive strategies, learners can interact with the new information in a variety of ways (Hedge, 2000).

Relevant research on learning strategies has revealed that the employing cognitive learning strategies is an essential contributor to successful learning (Chamot & O'Malley, 1987; Harris & Pressley, 1991; Pressley, Borkowski, & Schneider, 1987; Pressley, Goodchild, Fleet, Zajchowski, & Evans, 1989; Pressley, Snyder, & Cariglia-Bull, 1987; Wood, Woloshyn, & Willoughby, 1995).

Recently, many researchers have investigated the role of the cognitive strategies that students use in reading (Cohen, 1988; Wilkinson, 1995). Use of these strategies is effective in developing reading comprehension of students (Baker & Brown, 1984; Brown, 1981; Palinscar & Brown 1984). While some of these studies investigate the use of English monolingual learners' use of strategies, some of them were conducted to find out the reading strategies of ESL students. Results of these studies indicate that there is a close relationship between reading and language and there are some differences among learners in terms of their process on material written in the second language.

It is considered that two types of information resources exist; information retained from the outside world and information already stored in memory. During the analysis of sensory information, the process coming in from the outside world is known as bottom-up processing or data-driven processing due to depending on the data received through the senses. The existed information in the memory as prior knowledge has a strong influence individuals expectations and helps them to deduce the recent input. This effect of prior knowledge is known as top-down or conceptual-driven processing. Schemata operate in a top-down direction to help us interpret the bottom-up flow of information from the world. Most of the researchers study on the functions of the schema emphasizing the impact of knowledge that exists already in the mind on comprehension and memory (Driscoll, 2000).

The studies conducted to investigate both L1 and L2 reading propose a twofold discrimination of cognitive strategies as bottom-up and top-down reading strategies. According to Goodman (1986, p. 11), the bottom up model is defined as the "common sense notion" and the elements of reading process are decoding; identifying letter, words, phrases, and then sentences in order to get the meaning. However, top-down model requires learners to pick out the small amount of but effective parts from a text to apprehend (Lynch & Hudson, 1991). On the other hand, Carrell (1998, p. 2) claims that reading process is an active "psychological guessing game".

Although cognitive strategies lead students to do a task in the same way to provide consistency there are also disadvantages of cognitivism in that the learner learns a way to accomplish a task which may not be the best way, or suited to the learner or the situation (Schuman, 1996).

### *Metacognitive reading strategies*

Most of the metacognition researchers believe that cognition is closely related to predictive of cognitive performance (Maghsudi & Talebi, 2009). According to Pressley and Woloshyn (1995), metacognitive information is so valuable by assuming it is one of the mostly known characteristics of strategy instructional models and learners need to be instructed how to monitor their performance by instructors. By doing so, instructors might choose to explain metacognitive strategies simply or they prefer to actualize the use of these strategies by practising in the classroom along with relevant curriculum. In recent instructional models, teachers are expected to describe the strategies and represent them to the readers before they test readers' practice these strategies.

Similarly, Silberstein (1994) declares that readers should have the knowledge of their cognition, in other words metacognition, and to monitor their comprehension to get the meaning of the text. In this case, they are also expected to become aware of their metacognition, such as apprehending their objectives and using a various reading strategies for different reading texts. Among metacognitive strategies; self-monitoring and self-correcting are main features of effective readers (Forbes, Poparad, McBride, 2004). The most beneficial way of practicing these two strategies could be reading sessions which are designed with small groups.

### *Research questions*

There are a number of different reasons for failure in reading comprehension. The appropriate use of cognitive and metacognitive strategies is supposed to have a positive impact on English as a foreign language learners' reading comprehension. Thus, this study aims to compare two groups of participants' use of cognitive and metacognitive strategy use in reading in Turkey and Iran by addressing the following research questions:

- RQ1* How frequently do advanced level language students use cognitive and metacognitive reading strategies?
- RQ2* Is there a relationship between the participants' use of cognitive and metacognitive reading strategies?
- RQ3* Is there a gender difference among groups in terms of strategy use?
- RQ4* Is there a difference among groups in terms of nationality?

### *Limitations of the study*

There were a number of limitations. Firstly, it was conducted at ELT Departments of ÇOMU, Çukurova University, Erciyes University, and Gazi University in Turkey and, Marand Azad University, Tehran University, and Tehran Azad University in Iran. The results could not be generalized for other universities in different countries.

Furthermore, the study was conducted with young adult participants and reflects their reports. However, such a study could be replicated with young learners' or middle-aged ones.

## **Methodology**

### *Setting*

The study was conducted in Turkey and Iran. It was administered in the ELT Departments of seven different universities namely; ÇOMU, Çukurova University, Erciyes University, and Gazi University in Turkey; and Marand University, Tehran University, and Tehran Azad University in Iran. The data were collected by means of Metacognitive Reading Strategies Questionnaire (MRSQ) of Taraban, Kerr and Rynearson (2004) and Cognitive Strategies Questionnaire (CSQ) of Maghsudi and Talebi (2009).

### *Participants*

There were 461 participants who were first grade students of English at ELT Departments of seven different universities namely; ÇOMU, Çukurova University, Erciyes University, and Gazi University in Turkey; and Marand University, Tehran University, and Tehran Azad University in Iran. They were all assumed to be advanced level learners of English since they follow their courses in English at their departments. The average age of participants was 21 and their ages varied from 17 to 34. They had been exposed to English for almost 7 years. There were 326 female and 135 male participants. Table 1 shows the distribution of participants.

Table 1

*Distribution of Participants*

University	N
ÇOMU	97
Çukurova University	60
Erciyes University	55
Gazi University	103
Marand University	59
Tehran University	40
Tehran Azad University	47
Total	461

*Materials and instrumentation*

## MRSQ

This study employed two scales as an instrument to collect data on the use of cognitive and metacognitive reading strategies. MRSQ was administered to investigate the frequency of participants' use of metacognitive reading strategies developed by Taraban et al. (2004). MRSQ was administered to the learners at the Department of Foreign Language Teaching of ÇOMU previously by Razi (2008), consisting of ELT, German Language Teaching, and Japanese Language Teaching programmes. Reliability analysis revealed a Cronbach's alpha score of  $\alpha = .83$  over 22 items in the MRSQ.

Maghsudi and Talebi's (2009) CSQ was used to find out the participants use of cognitive reading strategies. Maghsudi and Talebi calculated Cronbach's alpha score for their instrument as  $\alpha = .83$  over 22 items.

*Procedures for data collection*

Researcher contacted reading instructors at ÇOMU, Çukurova University, Erciyes University, and Gazi University in Turkey; and Marand University, Tehran University and Tehran Azad University in Iran along with the head of ELT departments in these particular universities. The head of departments and reading instructors were instructed about the aims of the present study and they were presented on the vital impact of the contribution of their students. On their agreement to take part in the study, the researcher posted the questionnaires to these instructors in the fall semester of 2009-2010 academic year. It took about 30 minutes for participants to respond all the questions.

### *Procedures for data analysis*

The data collected through administration of the MRSQ and CSQ were fed into a computer through SPSS (15.0) and analysed by using independent samples t-test and descriptive statistics.

### **Findings and discussion**

*RQ1 – How frequently do advanced level language students use cognitive and metacognitive reading strategies?*

Table 2 shows that C5, C13 and C8 were the strategies which were mostly preferred advanced level language students. Participants stated that they tended to guess the meaning of the text by using clues such as a noun, verb, adjective, adverb, etc., surrounding words, verb tense, singular and plural, word elements that is affixes and roots, synonyms and antonyms while they were reading. Moreover, they indicated that they trace the details of the passage to find the answers of the questions. It is also clear that students tended to guess the meaning of unknown or unfamiliar words. On the other hand, findings revealed the least applied cognitive reading strategies as C10, C11 and C12. They infrequently referred punctuation or capitals to comprehend the reading text better. In addition, deducing after they read the text and checking and at the same time assess their comprehension were the strategies which students applied at least in reading.

Table 2

*Participants' Use of Cognitive Reading Strategies (N = 461)*

Cognitive strategies	Mean	SD
C5 guessing meaning by using clues	3.6855	1.15852
C13 re-reading details to answer questions	3.5488	1.22488
C8 guessing unknown words	3.5380	1.10590
C7 re-reading for better comprehension	3.5054	1.27794
C2 paying attention to the parts of sentences	3.4859	1.05620
C4 knowing pronoun references	3.4707	1.18950
C9 highlighting	3.4664	1.38527
C6 visualising information	3.4630	1.13026
C1 using prior knowledge	3.4273	1.20038
C3 paying attention to the sentence structure	3.3926	1.18866
C12 checking comprehension	3.3861	1.06247
C11 making inference after reading	3.3601	.96259
C10 using punctuation	3.2538	1.16031

On the other hand, Table 3 demonstrates the frequency of all participants' use of metacognitive reading strategies. According to responses of students, strategies of M22, M12 and M20 were ranked at the highest point. Participants mostly tended to re-read the text while they faced difficulty in understanding a text. Apart from this, results showed that students

tried to decide the meaning of unknown words which they believed as critical to the meaning of the text during reading. The last strategy that was employed by the all participants at most was related to underlining while they were reading in order with the aim of recalling the information. Furthermore, M16, M19 and M13 were rarely utilized by the students. Expressively, participants stated that they did not note how hard or easy a text was to read very often and they rarely used to write questions and used to take notes in the margin so as to comprehend of the text better. The last infrequent metacognitive reading strategy was dealt with checking whether they had estimated the current information during reading.

Table 3

*Participants' Use of Metacognitive Reading Strategies (N = 461)*

Metacognitive strategies	Mean	SD
M22 re-read for better comprehension	3.7310	1.29098
M12 determine meaning of critical words	3.6291	1.13019
M20 underline to remember	3.5575	1.24213
M7 distinguish new and existing info	3.5391	1.10682
M3 draw on knowledge	3.5293	1.14099
M4 reconsider and revise background info	3.5239	1.13830
M18 underline and highlight important info	3.5011	1.29987
M15 visualize descriptions	3.4859	1.19706
M14 exploit personal strengths	3.4664	1.03706
M5 reconsider and revise prior questions	3.4425	1.04229
M11 anticipate next info	3.4326	1.05090
M8 inferring meaning	3.4295	1.04773
M21 read more than once to remember	3.4252	1.17831
M10 search out info relevant to goals	3.3861	1.09869
M9 evaluate goals	3.3848	1.11915
M17 make notes to remember	3.3492	1.22010
M1 evaluate understanding	3.3406	1.03371
M6 consider interpretations	3.3362	1.03932
M2 anticipate how to use knowledge	3.3254	1.00563
M13 check understanding of current info	3.2733	1.07092
M19 use margins for notes	3.2278	1.20424
M16 note readability of text	3.2135	1.28399

*RQ2 - Is there a relationship between the participants' use of cognitive and metacognitive reading strategies?*

Participants' reports on their use of cognitive and metacognitive reading strategies were positively correlated, Pearson's  $r(461) = .84$ ,  $p < .001$ . The results revealed that there is a significant and strong correlation between the participants' use of cognitive and metacognitive reading strategies. In the light of this result, it can be claimed that an increase or decrease in the use of cognitive reading strategies might affect the use of metacognitive

reading strategies or vice versa. The results show that the frequency of using cognitive reading strategies might affect the frequency of using metacognitive reading strategies.

*RQ3 - Is there a gender difference among groups in terms of strategy use?*

Independent samples t-test results did not indicate significant gender differences on the use of cognitive reading strategies.

Table 4

*Independent Samples T-Test Results of Participants' Use of Cognitive Strategies with Reference to their Gender*

Gender	N	$\bar{X}$	SD	df	t	p
<i>Female</i>	326	3.4896	.73192	459	1.361	.174
<i>Male</i>	135	3.3892	.69382			

Independent samples t-test results did not indicate significant gender differences on the use of metacognitive reading strategies.

Table 5

*Independent Samples T-Test Results of Participants' Use of Metacognitive Strategies with Reference to their Gender*

Gender	N	$\bar{X}$	SD	df	t	p
<i>Female</i>	326	3.4467	.68825	459	.665	.507
<i>Male</i>	135	3.3997	.70047			

It is clear that how frequently individuals employ cognitive and metacognitive reading strategies and which strategies they apply in their reading process is not determined and affected by the gender factor.

*RQ4- Is there a difference among groups in terms of nationality?*

Independent samples t-test results compares Iranian and Turkish learners' use of cognitive reading strategies and indicates significant differences.

Table 6

*Independent Samples T-Test Results of Participants' Use of Cognitive Strategies with Reference to their Nationality*

Nationality	N	$\bar{X}$	SD	df	t	p
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<i>Iranian</i>	146	2.8156	.79277	459	-16.440	.000
<i>Turkish</i>	315	3.7590	.43589			

Independent samples t-test results compares Iranian and Turkish learners' use of metacognitive reading strategies and indicates significant differences.

Table 7

*Independent Samples T-Test Results of Participants' Use of Metacognitive Strategies with Reference to their Nationality*

<i>Nationality</i>	N	$\bar{X}$	SD	df	t	p
<i>Iranian</i>	146	2.8502	.78726	459	-15.033	.000
<i>Turkish</i>	315	3.7030	.42788			

It can be inferred that there could be some differences in frequency and choices of the strategies among countries. In this study, most of Iranian and Turkish participants' responses were the opposite especially in terms of appointing the least frequent cognitive and metacognitive reading strategies as the most frequent ones or vice versa. There might be a number of reasons for this situation such as cultural, social-cultural values, education system for both learners and candidate teachers, curriculum, personal expectations, values, beliefs, assumptions and differences, the manner of instructors who educate them. Especially, the difference between Iranian and Turkish students in terms of cognitive and metacognitive reading strategy uses could possible occur due to Iranian education system that allows students begin to learn English at the age of 12 when it is believed to be quiet late to learn a foreign language.

## Conclusion

Participants tend to guess meaning using clues from the text such as a noun, verb, adjective, adverb surrounding words, verb tense, singular and plural, word elements that is affixes and roots, synonyms and antonyms if they do not understand something such as a word or phrase as the highest ranking cognitive reading strategy and also they tend to guess the meaning of unknown words in the text which they are reading as the lowest ranking cognitive reading strategy. On the other hand, overall results reveal that advanced level language learners who are the participants of this study stated that they re-read the text when they are having difficulty comprehending a text as the highest ranking metacognitive reading strategy and they were used to note how hard or easy a text was to read as the lowest ranking metacognitive reading strategy. As stated in the results, readers do not tend to immediately look up the words they could not understand in the text instead they make predictions to find out the meaning of the words that they could not understand in the text through clues from the text such as a noun, verb, adjective, adverb, etc., surrounding words, verb tense, singular and plural, word elements that is affixes and roots, synonyms and antonyms if they do not understand something such as a word or phrase. On the other hand, readers rarely take structural points of sentences such as punctuations and capitals into account to comprehend

better while they are reading. In the light of the results, it could be claimed that readers prefer challenging with the difficult text to give up forcing themselves to achieve the purposes of reading. Moreover, it can be deduced that readers do not need to express if the reading text is hard or what extent it is difficult during reading process.

Furthermore, it can be deduced from the results that there is a significant and mutual relationship between the use of cognitive and metacognitive reading strategies. The choice of readers for cognitive reading strategies is depended on their preference of metacognitive reading strategies or vice versa. In this respect, Purpura (1997) indicates that metacognitive strategies influence significantly, directly and positively on applying cognitive strategies. It shows that using metacognitive strategies has operational role over cognitive strategy use in tasks (Oxford, 2003).

This study also aimed to investigate if there was a gender difference among groups in terms of strategy use in terms of both cognitive and metacognitive reading strategies and results indicates that there is not a significant difference among groups in terms of cognitive and metacognitive reading strategy uses even though female participants were dominant in this study. This shows that reading strategy use is not affected by being female or male.

Even though it is accepted as a world-wide truth that reading is one of the skills required to achieve successful foreign language learning, there could be some differences in frequency and choices of the strategies among countries. In this respect, this study finally aimed to find out if there is a difference among groups in terms of nationality strategy use and according to results there appear a meaningful difference in the uses of cognitive and metacognitive reading strategies. In this study, most of Iranian and Turkish participants' responses were not similar especially in terms of appointing the least frequent cognitive and metacognitive reading strategies as the most frequent ones or vice versa. There might be a number of reasons for this situation such as cultural, social-cultural values, education system for both learners and candidate teachers, curriculum, personal expectations, values, beliefs, assumptions and differences, the manner of instructors who educate them. Especially, the difference between Iranian and Turkish students in terms of cognitive and metacognitive reading strategy uses could possibly occur due to Iranian education system that allows students begin to study English at the age of 12 when it is believed to be quiet late to start studying a FL.

Moreover, for higher education, there are also some differences between students in these two setting; Turkey and Iran. Although ELT students at Turkish universities are expected to follow an English preparatory class for a year, this is not the case for Iranian ELT students. However, both Turkish and Iranian education systems encourage students to attend private courses before they take university entrance examination. The results provide evidence for the impact of culture on employing language learning strategies as provided by many research studies (e.g., Abbott, 2006; Oxford, 2001b; Oxford 2002; Parry, 1996; Sheorey & Mokhtari, 2001). Such differences can be observed between the students at Turkish and Iranian universities. More interestingly, the employment of both cognitive and metacognitive reading strategies by the participants at Marand University shows similarity with the participants' responses at Turkish universities. This finding is quite important as Marand University is located in a district where Turks live intensively. Therefore, they have the intention of employing similar reading strategies with the ones in Turkey.

Another explanation of the employment of different cognitive and metacognitive reading strategies might be logographic skills in relevance with the similarities and the

differences between the alphabet of L1 and L2/FL. As Turkish participants are advantageous due to the similarities between Turkish and English alphabets they employ strategies such as highlighting, guessing meaning, and using prior knowledge. On the other hand, as Iranian participants are not familiar with the alphabet as their L1 uses Arabic alphabet which is different from English, they need strategies such as punctuation, paying attention to the parts of sentences, and paying attention to the structure of sentences. However, as they read slowly in FL because of logographic skills, they do not have time to reread the text in case of failure in comprehension.

### **Implications**

Even though the scope of participants were quiet wide in this study, there is no research study including this present one that could generalize the results in terms of certain cognitive and metacognitive reading strategy uses. Despite having such a wide setting, this study can be thought as limited with participants in target universities. It is possible to obtain different results when a similar study is conducted with different participants in other universities. Moreover, the responses of participants might alter if they are instructed about cognitive and metacognitive reading strategies. In this way, probably results will alter after the training.

It can be claimed that identifying the strategies of more successful readers can be helpful for teachers to enable less successful ones to acquire and use these strategies (Tercanlioglu, 2004). Nevertheless, there appear many questions on using these strategies in learning process questions such as how learners get these strategies, when and how they can apply them in their own learning and how they can use them automatically since these strategies came into the point in language learning and teaching context (Oxford, 1990).

Thus, the most vital implication of this study appears that learners should be acknowledged about language learning strategies especially reading strategies. Concerning this, Oxford (2003) claims that through such a training it is possible to help students decide how and how well they learn a language these strategies is a vital factor and at that point it is important that learners need to be aware of their learning process and learning strategies as these can be transferred to new tasks when they are once learned (Chamot & O'Malley 1987). Therefore, students should be acknowledged on what these strategies are and what kind of strategies will initiate their language learning.

In this study, the participants were advanced level learners and a similar study can be conducted with beginner level learners to find out the similarities or differences in changes between beginner and advanced learners' responses. The earlier student becomes aware of language learning strategies and how they could foster their learning, the more successfully they achieve the reading process.

Moreover, a further study can be conducted to find out if there is a relationship between the frequency of cognitive and metacognitive reading strategies and learners' beliefs about reading process in these two different contexts. In this way, it can be found what extent learners' beliefs influence the choices of cognitive and metacognitive reading strategies. Further research can also be conducted to investigate if there is any difference or similarity with adult participants. Such a study could reveal that choices of strategies are affected by the age of readers. Furthermore, this study can be conducted as an experimental study by giving strategy training to participants and to analyse the results if there is any change in the

frequency of participants' choices of cognitive and metacognitive reading strategies after such a training.

In addition to this, in this study the participants were Turkish and Iranian learners and they were instructed in English, however, a similar study can be conducted with other language speaking learners and with learners who are learning a foreign language apart from English. Investigating readers who use different alphabets such as Japanese and Chinese alphabets might lead researchers to understand the use of reading strategies better.

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