Metacognitive Awareness and Comprehension Monitoring in Reading Ability of Iranian EFL Learners

Monitoreo de la conciencia metacognitiva y de la comprensión en la habilidad lectora de estudiantes iraníes de inglés como lengua extranjera

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We report an investigation on the relationship between metacognitive awareness of reading strategies and comprehension monitoring of language learners in English as a foreign language context. Participants were thirty first year university students majoring in electronics. They completed a questionnaire aimed at discerning the strategies that readers use when coping with academic reading tasks. Participants were then divided into six groups according to their reading proficiency and metacognitive awareness. Think-aloud protocol analysis, error detection and retrospective questions were used to examine the comprehension monitoring of readers. The data were analysed through descriptive statistical procedures as well as t-tests. The results indicated the combined effect of metacognitive awareness of reading strategies and reading ability of academic reading texts on language learners' comprehension monitoring.

Key words: Comprehension monitoring, metacognitive awareness, proficient readers, reading comprehension, reading strategies.

Reportamos una investigación sobre la relación entre la conciencia metacognitiva de las estrategias de lectura y el monitoreo de la comprensión de estudiantes de idiomas en un contexto de inglés como idioma extranjero. Los participantes fueron treinta estudiantes universitarios de electrónica de primer año. Ellos respondieron un cuestionario por medio del cual se podían identificar las estrategias que los lectores usan cuando se enfrentan a actividades de lectura académica. Los participantes fueron divididos en seis grupos, según su competencia lectora y su conciencia metacognitiva. Para examinar el monitoreo de la comprensión de los lectores se emplearon el análisis de protocolo de estimulación del recuerdo, la detección de errores y preguntas retrospectivas. Se analizó la información a través de la descripción de procedimientos estadísticos así como *t-tests*. Los resultados indicaron los efectos combinados de la conciencia metacognitiva respecto a las estrategias de lectura y la habilidad lectora de textos académicas en el monitoreo de la comprensión de estudiantes de lenguas.

Palabras clave: comprensión lectora, comprensión monitoreada, conciencia metacognitiva, estrategias de lectura, lectores competentes.

Introduction

During the past couple of decades, researchers have become keenly interested in metacognition. The term *metacognition* refers to the knowledge of *and* monitoring of cognitive processes. Most research on metacognition e.g. Nelson & Narens (1990, cited in Hacker, 1997) has been on meta-memory or metacomprehension, although the metacognitive processes involved in performing other tasks, such as problem solving, have also been studied. Additionally, researchers have begun to explore metacognition outside of the laboratory, extending research paradigms to the classroom and other applied settings.

First language reading researchers, most notably Baker and Brown (1984), have investigated several different aspects of the relationship between metacognitive ability and effective reading. Following Flavell's (1979) model, they have recognized two dimensions of metacognitive ability: 1) Knowledge of cognition or metacognitive awareness; and 2) Regulation of cognition which, as stated, includes the reader's knowledge about his or her own cognitive resources and the compatibility between the reader and the reading situation. For example, if a reader is aware of what is needed to perform effectively, then he is likely to take steps to meet the demands of a reading situation in a more efficient way. If, however, the reader is not aware of his or her own limitations as a reader or of the complexity of the task he/she is to do, then the reader can hardly be expected to take actions to anticipate or overcome the difficulties (Carrell, 1989).

According to Flavell (1985), as individuals develop, they accumulate a great deal of knowledge as a result of life experiences. This knowledge can be thought of as "knowing that" knowledge, also referred to as *declarative knowledge* or "knowing how" knowledge, referred to as *procedural knowledge*. One of the types of declarative knowl-edge that individuals acquire is knowledge about their own and others' cognitive processes, also known as metacognitive awareness.

On the other hand, during learning, it is important for individuals to both assess how well they are doing on a task and initiate a plan to correct any problems they may be experiencing. These combined activities are referred to as *monitoring cognition*. Thus, while one is listening to a lecture or reading a book, it is important to both evaluate one's level of understanding (with perhaps simple questions, such as "Do I understand what has been said/read up to this point?") as well as regulate understanding with one or more strategies if one is aware of a comprehension difficulty (for example, asking a question of an instructor or rereading a section of a paragraph not understood). Thus, monitoring of cognition really has two components. The first is *evaluation* of progress toward a cognitive goal, and the second is a *regulation* of activities through the use of appropriate strategies. If a student is regulating his or her cognition, then he or she has already attempted to evaluate progress. However, it is possible for a student to fail to evaluate progress or also possible to evaluate progress but then fail to use one or more regulation strategies. Many fail to use strategies to repair comprehension problems simply because they lack the time or motivation to do so. Unfortunately, failure to evaluate one's progress and/or use strategies to aid progress toward goals is an all too common occurrence in students' efforts at learning. Furthermore, these types of monitoring activities are often not taught directly and, for this reason, students' learning and their ability to know how to learn may be hindered.

Hence, based on the brief introduction presented, it can be mentioned that the purpose of the present study is to investigate the probable relationship between the two abovementioned components

of metacognition, metacognitive knowledge of reading strategies and comprehension monitoring, in reading ability of Iranian EFL learners.

In fact, from bottom-up theories and top-down theories to the more recent interactive models, researchers have argued about which reading model is best to explain the process of readers' comprehension. In addition to the explanations of the reading comprehension process based on reading models, researchers have also categorized a lot of so-called "good" reading strategies that "should be adopted" to enhance readers' comprehension of texts and train less-efficient readers to use "good" strategies as they read (Block, 1986; Devine, 1984; Hosenfeld, 1977, cited in Yang, 2002). However, Sarig (1987) pointed out that good strategies do not necessarily lead to successful comprehension, and Anderson (1991) claimed that proficient and less-proficient readers might actually use the same strategies (cited in Yang, 2002). Accordingly, Yang (2002, p. 19) states "even being equipped with a variety of reading strategies, readers still need a higher-level ability to utilize their reading strategies. This ability is called 'comprehension monitoring': the ability to know what has been done right or wrong and to integrate new information with prior existing knowledge". This observation uncovered the fact that reading strategies alone cannot account for the effectiveness of reading comprehension. Being aware of this flaw, researchers (e.g. Block, 1992; Ehrlich, Remond and Tardieu, 1999; Loizido & Koutselini, 2007; Yang, 2002) then started to conduct studies related to comprehension monitoring.

In the same vein, Block (1992) indicated that most research related to comprehension monitoring has been conducted with native English speakers. She claimed, though, that comprehension monitoring is more important for L2 readers, as they will probably encounter more linguistic difficulties than L1 (native speaker) readers do and thus need

to "repair more gaps in their understanding" through comprehension monitoring (p. 320). Block argued that more studies should be done on L2 readers. Considering the emphasis made on the necessity of comprehension monitoring for L2 learners, it is apparently clear that comprehension monitoring would be particularly crucial to foreign language (FL) readers. Since (FL) readers have a more limited knowledge of vocabulary and grammar and have to decode meanings of texts by adopting strategies, they also need comprehension monitoring to further examine whether those strategies were successful in overcoming their reading problems. In this line, the current study, from one aspect, has investigated manifestation of comprehension monitoring among EFL proficient and less proficient readers.

In addition to comprehension monitoring, which is important for EFL readers, the other aspect of metacognition, metacognitive awareness, is also related to it and plays a significant role in the act of good reading. According to Hetherington & Parke (1993), the two aspects of metacognition (individual's knowledge and control of cognitive activities) are interrelated and act upon each other. In these two aspects, one's understanding of her/his cognitive abilities and processes, the abilities of others and the task situation will influence the strategies s/he uses in overseeing and monitoring learning. In turn, his/her experience and ability to act as an executive in planning, monitoring, checking, and modifying strategies will contribute to her knowledge about cognition and what contributes to success or failure on intellectual tasks.

Moreover, Israel (2005) stresses the point that because metacognitive activities involve higher level cognitive processes, teachers should be more aware of their students' cognitive abilities and basic knowledge/skills development. In addition to that, it is important to measure both awareness

and monitoring because of the plausible reciprocal relations and the effects on successful comprehension through independent strategic processing. Each allows for instructional decision making.

Research Questions and the Hypotheses

For the purpose of this study, the following research questions were posed:

1. Is there any relationship between the degree of metacognitive awareness of reading strategies and comprehension monitoring among Iranian EFL readers?

2. How do more proficient readers (MP) perform comprehension monitoring differently from less-proficient readers (LP), if any?

In order to investigate the abovementioned research questions empirically, the following null hypotheses were proposed:

1. There is no relationship between the degree of metacognitive awareness of reading strategies and comprehension monitoring among Iranian EFL readers.

2. More proficient readers do not perform comprehension monitoring differently from less proficient readers.

Methodology

The present study used a quantitative-qualitative design with a descriptive and exploratory nature. In order to make the results valid and reliable, triangulation of data was employed to obtain multiple measures of participants' comprehension monitoring strategies. Hence, different means of data collection were utilized: think-aloud protocol, retrospective questions, and error detection.

As is well known, the think-aloud technique is a valuable tool which is widely used in answering questions related to reading comprehension ability.

It provides information regarding comprehension monitoring of readers which is difficult to obtain by any other procedure. To compensate for the limitations that are associated with this technique, think aloud was accompanied with two other methods (error detection and retrospective questions) in order to have multiple measures of the readers comprehension monitoring.

At the same time, based on the research questions asked, quantitative analysis was also utilized to efficiently answer research questions. Data triangulation helped to confirm the obtained results and thus improve the reliability and validity of the data.

Participants

The subjects who participated in this study were selected from among one hundred and fifteen students majoring in electronics at the Industrial University of Noshirvani in Babol, Iran. They were freshmen who attended general English classes. They were both males and females and their age range was 19 to 20. To make sure of the homogeneity of the sample, a proficiency test (TOEFL) was administered to all the students and the mean of their scores was calculated. The students whose scores were 1 SD above and below the mean score were selected as subjects. Then, 62 out of the 115 were identified as being at the same level of language proficiency. In the next step, they were administered a reading comprehension section of Longman's TOEFL test (1996, second edition by Deborah Phillips) and Metacognitive Awareness of Reading Strategies Inventory (MARSI) by Mokhtari and Reichard (2002). Based on the results of completing the Reading comprehension section of Longman's TOEFL test, those participants having highest and lowest scores on the reading comprehension test were chosen and grouped into

More Proficient readers (MP) and Less Proficient readers (LP), 5 (MP) and 5 (LP). Also, the rest of the participants were grouped into High Metacognitive awareness (HM) and Low Metacognitive awareness (LM), each consisting of 5 subjects based on their answers on the questionnaire. Also, two groups named (MPHM) and (LPLM), which were respectively more proficient readers who were high in their metacognitive awareness and less proficient readers who were low in their metacognitive awareness were identified in the sample. Finally six groups, each consisting of 5 subjects, emerged. The total number of subjects chosen for the study was 30 which was distributed as 5 (MP), 5 (LP), 5 (HM), 5 (LM), 5 (MPHM), and 5 (LPLM) subjects.

Data collection tools

The following data collection tools were used in the study:

Mokhtari and Reichard's (2002)'s MARSI (Metacognitive awareness of reading strategies inventory) was employed in the current study. MARSI is an improved questionnaire from a psychometric and theoretical perspective. The items on this inventory consist of statements reflecting thoughts, actions and strategies associated with comprehending text material. The subject is to respond to each item by circling a quantitative value that represents the following: 1, I never do this to 5, I always do this.

To conduct the think aloud protocol as efficiently as possible prior to the actual session, a training session lasting about 40 to 45 minutes was held. During the training sessions participants were informed that their verbal report during the actual session would be audio taped and later transcribed. They were also instructed how to perform the task. It was mentioned that they were supposed to think aloud while reading the passage and tell whatever

is going on in their heads as well as that it should reflect what is being thought.

Error-detection paradigm was used to measure the subject's ability to monitor his/her comprehension of the passage through detecting logical internal inconsistencies. The subjects were informed that they would be required to find a trick in the passage. Then, the researcher provided a series of nine to ten progressive prompts after the passage. The prompts ranged from general to more specific probes about the inconsistency in the passage. After the passages were read, the subject was asked whether he/she knew the trick. If the student couldn't adequately explain the trick, or had not noticed it at all, then the researcher provided the prompts one at a time. After each prompt, the subject was asked whether he now knew what the trick was in the passage. The number of prompts for each student was recorded for later analysis and comparison as they, too, provided a graduated measure of comprehension monitoring ability.

Retrospective questions were used to tap into students' comprehension monitoring strategies reportedly used in reading the passage and detecting the error. Here, too, students' responses were recorded and transcribed for inter-rater coding.

One of the tools that can provide useful information about the comprehension monitoring of the subjects is asking learners to keep a metacognitive journal. In the Metacognitive Journal, students analyse their own thought processes following a reading or other activity. The Metacognitive Journal encourages students to reflect on their reading processes, their final drafts, or their presentations. Subjects of this study were asked to keep metacognitive journals for five of their academic passages.

Results

Question 1

Is there any relationship between the degree of metacognitive awareness of reading strategies and comprehension monitoring? To answer this research question, first, cross tabulation was used to examine the two HM and LM groups in terms of their percentage of using each monitoring strategy, also their total percentage of monitoring strategies use in general. In Table (1), the percentage to which each HM and LM group employed each individual monitoring strategy is depicted. The portion of each group (HM and LM) from the total use of monitoring strategies is also shown.

Regarding the relationship between the degree of metacognitive awareness and comprehension monitoring, one piece of evidence comes from these percentages. Based on the results obtained, the percentages show that the HM group employed more monitoring strategies (71%) than the LM group, which made significantly less use of strategies (29%). These results suggest that metacognitive awareness can affect language learners' monitoring behavior during reading comprehension.

To ensure the relationship between the degree of metacognitive awareness and comprehension monitoring, a t-test at the 0.05 level of significance as the standard to reject the null hypothesis was also conducted to determine whether means of the HM group and the LM group were equal. Table 2 illustrates the results of this analysis.

Table 1. Percentage of Monitoring Strategy Use for HM and LM Groups

Monitoring strategies * Group Crosstabulation			Group		Total
			HM	LM	
Monitoring strategies	Determining word meaning	Count	9	4	13
		% within Monitoring strategies	69.2%	30.8%	100.0%
	Questioning	Count	11	2	13
		% within Monitoring strategies	84.6%	15.4%	100.0%
	Reflecting	Count	3	1	4
		% within Monitoring strategies	75.0%	25.0%	100.0%
	Monitoring	Count	12	6	18
		% within Monitoring strategies	66.7%	33.3%	100.0%
	Summarizing	Count	4	5	9
		% within Monitoring strategies	44.4%	55.6%	100.0%
	Looking for important information	Count	5	0	5
		% within Monitoring strategies	100.0%	.0%	100.0%
Total		Count	44	18	62
		% within Monitoring strategies	71.0%	29.0%	100.0%

Table 2. Independent Samples T-Test for HM and LM Groups

		Levene's Test for Equality of Variances		T-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		Lower	Upper
Frequency	Equal variances assumed	10.518	.002	5.614	60	.000	4.444	.792		2.861	6.028
	Equal variances not assumed			7.359	58.209	.000	4.444	.604		3.236	5.653

Independent Samples Test

Based on this table, in Levene's test for equality of variances, it is shown that sig=.002, is less than 0.05, so, the null hypothesis that "there is no relationship between the degree of metacognitive awareness and comprehension monitoring" is rejected. Also, since the second line of the table has indicated that sig=0, it can be clearly inferred that since it is less than 0.05, equality of means is rejected. Besides, taking the confidence interval of the double difference ensured us of the same conclusion, given that there is no 0 between 3.236 and 5.653. It further verifies the fact that the means are not equal and therefore the previously stated null hypothesis is rejected.

Question 2

Do more proficient readers with higher metacognitive awareness use more comprehension monitoring? To answer this question, the frequency and percentage of comprehension monitoring strategies of participants who were more proficient readers and high metacognitively aware (MPHM) and other participants who were less proficient in reading and were low in their metacognitive awareness (LPLM) were calculated and compared.

As depicted in Table 3, statistics for (MPHM) revealed that the majority of these participants employed strategies to a large extent, with the monitoring strategy having the highest percentage, 31.8%, and the reflecting strategy the lowest percentage, 6.8%, and all participants having a share of about 20-25%, except for one case (participant A with the percentage of 9.1%).

Furthermore, Table 4 illustrates the frequency and percentage of monitoring strategy use in LPLM group. As shown, determining word meaning has the highest percentage and reflecting the lowest percentage, 7.7%, among the strategies. Participants' manipulation of strategies ranged from 15% to 26%.

Table 3. Monitoring Strategy Use for MPHM Group

Monitoring strategies * Subject Crosstabulation

			Subject					Total
			A	B	C	D	E	
Monitoring strategies	Determining word meaning	Count	1	1	2	2	1	7
		% of Total	2.3%	2.3%	4.5%	4.5%	2.3%	15.9%
	Questioning	Count	1	1	0	4	5	11
		% of Total	2.3%	2.3%	.0%	9.1%	11.4%	25.0%
	Reflecting	Count	0	2	0	0	1	3
		% of Total	.0%	4.5%	.0%	.0%	2.3%	6.8%
	Monitoring	Count	2	4	4	2	2	14
		% of Total	4.5%	9.1%	9.1%	4.5%	4.5%	31.8%
	Summarizing	Count	0	1	2	0	1	4
		% of Total	.0%	2.3%	4.5%	.0%	2.3%	9.1%
	Looking for important information	Count	0	3	0	1	1	5
		% of Total	.0%	6.8%	.0%	2.3%	2.3%	11.4%
Total		Count	4	12	8	9	11	44
		% of Total	9.1%	27.3%	18.2%	20.5%	25.0%	100.0%

Table 4. Monitoring Strategy Use for LPLM Group

Monitoring strategies * Subject Crosstabulation

			Subject					Total
			F	G	H	I	J	
Monitoring strategies	Determining word meaning	Count	2	1	0	0	3	6
		% of Total	7.7%	3.8%	.0%	.0%	11.5%	23.1%
	Questioning	Count	0	1	1	2	1	5
		% of Total	.0%	3.8%	3.8%	7.7%	3.8%	19.2%
	Reflecting	Count	0	0	1	1	0	2
		% of Total	.0%	.0%	3.8%	3.8%	.0%	7.7%
	Monitoring	Count	1	2	1	1	0	5
		% of Total	3.8%	7.7%	3.8%	3.8%	.0%	19.2%
	Summarizing	Count	1	1	1	0	1	4
		% of Total	3.8%	3.8%	3.8%	.0%	3.8%	15.4%
	Looking for important information	Count	3	1	0	0	0	4
		% of Total	11.5%	3.8%	.0%	.0%	.0%	15.4%
Total		Count	7	6	4	4	5	26
		% of Total	26.9%	23.1%	15.4%	15.4%	19.2%	100.0%

Figure 1 illustrates the frequency of monitoring strategy use of the MPHM and LPLM groups through the bar graph. As can be seen in Figure 1, the MPHM group manipulated monitoring strategies far more frequently than the LPLM (with a ratio of 14 to 5 respectively) group. The next strategy which has been manipulated more frequently among MPLM is questioning which has the frequency of 11 while its frequency among LPLM members is only 5. The third strategy which has the highest frequency among MPHM is determining word meaning. It is worth pointing out that regarding the manipulation of this strategy, there is not much difference between MPHM and LPLM in that the frequency of it in both groups is 7, 6, respectively. Another interesting point is the fact that this strategy, determining word meaning, has the highest frequency among other strategies which have been manipulated by the LPLM group.
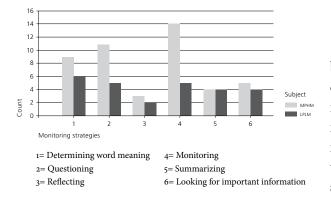

1= Determining word meaning   4= Monitoring
2= Questioning   5= Summarizing
3= Reflecting   6= Looking for important information

Figure 1. Monitoring Strategy Use of MPHM and LPLM Groups

The fourth strategy regarding frequency of use among MPHM is looking for important information. Again, there is not much difference in the frequency of this strategy between the two groups (MPHM, 5, LPLM, 4). The fifth strategy is "summarizing", which has the same frequency in both MPHM and LPLM groups, f=4. The last strategy is "reflecting", which has the lowest frequency both

in MPHM and LPLM groups (MPHM, 3, LPLM, 2). Totally, the MPHM group employed comprehension monitoring strategies more frequently (f=44) while the LPLM group use of these strategies is almost half that of MPLM, which is f=26. The higher frequency and percentage of comprehension monitoring strategy use among MPHM in comparison with the LPLM group reveal that there is a combined effect of metacognitive awareness and comprehension monitoring on the reading ability of learners, in that those participants who are more proficient readers and high in metacognitive awareness employ comprehension monitoring strategies more frequently than those who are less proficient readers and low in metacognitive awareness. As a result, the null hypothesis that "there is no combined effect of metacognitive awareness and comprehension monitoring on the reading ability of learners" is safely rejected.

Discussion

As revealed in the data, there is a relationship between the degree of metacognitive awareness and comprehension monitoring. In other words, the results of the study indicate that comprehension monitoring can be affected by the degree of metacognitive awareness of reading strategies in that the more a language learner is metacognitively aware of reading strategies, the more comprehension monitoring s/he does.

Another point of interest is that not only the frequency of comprehension monitoring strategy use was higher among the HM group, but also the results of the error detection task displayed that they performed efficient monitoring while reading the passages in that four HM group members could find the error immediately and one of them found the embedded error only after one prompt, while none of the LM group members succeeded at detecting the error at first or second prompt. Three

of them could detect the error at third prompt and two of them could do so on the fifth attempt. One reason for this difference in comprehension monitoring of HM and LM groups could be due to the way they approached the texts. In other words, the LM group tended to read the text much more locally, paying special attention to meaning of individual words and sentences. Most of members of this group didn't make much effort to link the sentences of the text with each other to get the full comprehension of the text. This is while the HM group members did not stop at every word or sentence. They tried to read more holistically and link the meaning of sentences to get a better understanding of the context. This finding supports Baker & Brown's (1984) proposition that "knowing that" (declarative knowledge) is different from "knowing how" (procedural knowledge), and that the knowledge that a particular strategy is useful (awareness) precedes its routine use, which in turn precedes the ability to describe how it is used. Interestingly, this finding is in line with Devine's (1984) study and studies of first language reading research which have generally shown that younger and less proficient readers tend to focus on reading as a decoding process rather than as a meaning-making process (Paris & Myers, 1981; Garner & Kraus, 1982).

The results for investigating the combined effect of metacognitive awareness and comprehension monitoring on the reading ability of EFL language learners indicate that those participants who are both highly metacognitively aware of reading strategies and more proficient in reading ability employed comprehension monitoring strategies much more frequently than the group with low metacognitive awareness and low reading proficiency. This finding is consistent with Barnett's (1988) study in which she investigated the effects of metacognitive awareness and strategy use

on reading comprehension. In her study, the relationships between perceived strategy use, actual strategy use and reading comprehension were positive. Students who claimed they used effective strategies seemed to use better strategies at understanding sentences in context and they also seemed to have a higher reading ability.

The findings of this study are also in line with Carrell (1989). Carrell carried out a study to investigate the relationship between metacognitive awareness and reading comprehension in L1 and L2. In her study, global strategies were found to be positively correlated with reading proficiency. Local strategies, however, seemed to negatively correlate with reading ability. Schooren, Hulstijn and Bossers' (1998) research also has revealed that metacognitive awareness is a significant contributor to both L1 and FL reading.

Also the higher percentage of LPs in employing more 'determining word meaning' strategy, in comparison with MPs, could be explained inasmuch as less proficient readers of this study checked almost every single word in the passage in a bilingual dictionary, while more proficient readers of the group only looked for more important words of the text which in turn resulted in a lower percentage for 'determining word meaning' strategy. Furthermore, while looking for the embedded error and a result of not being able to detect the error at first prompt, LPs frequently declared that they lost the meaning of sentences since they were busy translating them word by word.

Generally, results of the study are consistent with Block's study (1992) concerning the comprehension monitoring of L1 and L2 readers as they read an expository text. It has been shown in her study that reading proficiency is definitely a factor in determining the success of readers' comprehension monitoring processes. And differences in the efficiency of comprehension monitoring among

the four groups of her study is in their reading proficiency, rather than their language background. Additionally, findings of the present study support Paris and Meyer's study (1981) in which successful readers or high proficient readers appear to use strategies more frequently than less successful or poor readers.

This study is also in line with previous research in terms of the effect of metacognitive awareness on comprehension monitoring. Research has revealed that once metacognitive awareness is raised, L2 learners can enhance their comprehension monitoring skills through practice and explanation of techniques. Casanave (1998), for instance, suggests that students need to be asked to reflect on their understanding by answering questions inserted between paragraphs. Such questions may ask learners to "reflect back on what they have read or to think ahead to what they will read and to relate their world knowledge to the text" (p. 292). He further asserts that this practice may help learners improve their metacognitive abilities so that they become more aware of where their reading problems lie and what kind of strategies can be applied to overcome those problems.

Conclusion

As discussed previously, the core interest of this study was to examine whether or not there was a relationship between the degree of metacognitive awareness of reading strategies and comprehension monitoring in the reading ability of language learners in an EFL context. As highlighted in Yang, 2002, learners need comprehension monitoring to examine whether or not the employed strategies were successful in overcoming their reading problems. Also, Block (1992) pinpointed the fact that most studies regarding the role of comprehension monitoring in the reading comprehension ability of learners has been conducted with native speakers, while L2 learners will probably encounter more linguistic difficulties and therefore need to "repair more gaps in their understanding" through comprehension monitoring (p. 320). Comparing EFL learners' more limited environment, it can be realized that comprehension monitoring is of more importance to EFL learners. This is stated while few studies have been conducted with EFL learners' comprehension monitoring, specifically on their reading comprehension ability.

From another aspect, while the relationship between metacognitive awareness of reading strategies and the reading ability of learners in native and second language context is established, studies regarding this issue for EFL learners seem to be very few. Furthermore, studies on the relationship between metacognitive awareness of reading strategies and comprehension monitoring of language learners were absent in the literature, let alone in an EFL context. Thus, this study was in part inspired by the essentiality of comprehension monitoring and metacognitive awareness of reading strategies and the relationship between these two for EFL readers as the focal point.

To come to the point, the core intents of the current study were to explore the relationship between the degree of metacognitive awareness of reading strategies and comprehension monitoring, the combined effect of these two variables on the reading ability of Iranian EFL learners, and the comprehension monitoring behaviour of more proficient and less proficient readers. The findings suggest that there is a relationship between the degree of metacognitive awareness of reading strategies and comprehension monitoring inasmuch as the more metacognitively aware readers performed comprehension monitoring with a higher frequency and approached the reading task locally, whereas low metacognitively aware readers employed comprehension monitoring less

frequently and read the text globally. In this regard, it can be claimed that the present study contributes to support Baker & Brown's (1984) proposition that "knowing that" (declarative knowledge) is different from "knowing how" (procedural knowledge), and that the knowledge that a particular strategy is useful (awareness) precedes its routine use. Furthermore, findings indicate that metacognitive awareness of reading strategies and comprehension monitoring function effectively on the reading ability of EFL learners. As mentioned previously, it was shown in the study that participants enjoying high metacognitive awareness of reading strategies and high reading proficiency employed comprehension monitoring strategies more frequently and more efficiently. In this regard, this study added a new aspect which was not present in the literature. Finally, this study showed underlying differences in comprehension monitoring of more and less proficient readers. In this respect, too, this study supported previous research that has suggested that reading proficiency makes a difference in comprehension monitoring of language learners (Block, 1992; Paris & Meyers, 1981).

Pedagogical Implications

The findings reported in the present study pertain to the metacognitive awareness and comprehension monitoring among EFL academic readers. It also has some implications for teachers in the realm of TEFL in particular and education in general.

It helps teachers in accomplishing their challenging task of teaching English in an EFL context where learners have less exposure to language compared to L1/ESL contexts. Teachers can play a key role in enhancing learners' metacognitive awareness of reading strategies in order to facilitate their comprehension monitoring and thus improve their reading comprehension ability. As a result, gradually, learners would start to think

metacognitively about the strategies they could use to improve their reading comprehension to become better readers and also autonomous and strategic readers.

Nevertheless, it is important for metacognitive reading strategies instruction to be integrated with the overall reading curriculum so as to enhance students' metacognition as regards reading. "Such instructions can help promote an increased awareness of the mental processes involved in reading and the development of thoughtful and constructively responsive reading" state Shorey & Mokhtari, 2001, p. 443). Teaching students to be constructively responsive readers can be a powerful way to promote skilful academic reading which will in turn lead to academic achievement.

References

Anderson, N. J. (1991). Individual differences in strategy use in second language reading and testing. *Modern Language Journal, 75,* 461-472.

Baker, L., & Brown, L. A. (1984). Metacognitive skills and reading. In P. D. Pearson (Ed.), *Handbook of reading research.* New York, NY: Longman, 353-394.

Barnett, M. A. (1988). Reading through context: How real and perceived strategy use affects L2 comprehension. *Modern Language Journal, 72,* 150-162.

Block, E. L. (1992). See how they read: Comprehension monitoring of L1 and L2 readers. *TESOL Quarterly, 26*(2), 319-343.

Carrell, P. L. (1989). Metacognitive awareness and second language reading. *Modern Language Journal, 73,* 121-134.

Casanave, C. P. (1998). Comprehension monitoring in ESL reading: A neglected essential. *TESOL Quarterly, 22*(2), 283-302.

Devine, J. (1984). ESL readers' internalized models of the reading process. In J. Handscombe, R. Orem, & B. P. Taylor (Eds.), *On TESOL '83* (pp. 95-108). Washington, DC: TESOL.

Ehrlich, M. F., Remond, M., & Tardieu, H. (1999). Processing of anaphoric devices in young skilled and less skilled comprehenders: Differences in metacognitive monitoring. *Reading and Writing: An Interdisciplinary Journal, 11*(1), 29-63.

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, *34*, 906-911.

Flavell, J. H. (1985). *Cognitive development* (2nd ed.). Eaglewood Cliffs, NJ: Prentice-Hall.

Garner, R., & Kraus, C. (1982). Good and poor comprehender differences in knowing regulating reading behaviors. *Educational Research Quarterly*, *6*(4), 5-12.

Hacker, D. J. (1997). Comprehension monitoring of written discourse across early-to-middle adolescence. *Reading and Writing: An Interdisciplinary Journal, 9,* 207-240.

Hetherington, E. M., & Parke, R. D. (1993). *Child Psychology: A contemporary viewpoint*. (4th ed.) New York, NY: McGraw-Hill.

Loizidou, A., & Koutselini, M. (2007). Metacognitive monitoring: an obstacle and a key to effective teaching and learning. *Teachers and Teaching: Theory and Practice, 13*(5), 499-519.

Mokhtari, K., & Reichard, C. A. (2002). Assessing students' metacognitive awareness of reading strategies. *Journal of Educational Psychology, 94*(2), 249-259.

Paris, S. G. & Myers, M. (1981). Comprehension monitoring, memory and study strategies of good and poor readers. *Journal of Reading Behavior, 13,* 5-22.

Sarig, G. (1987). High-level reading in the first and in the foreign language: Some comparative process data. In J. Devine, P. L. Carrell, & D. E. Eskey (Eds.), *Research in reading in English as a second language* (pp. 105-120). Washington, DC: TESOL.

Schoonen, R., Hulstijn, J., & Bossers, B. (1998). Metacognitive and language-specific knowledge in native and foreign language reading comprehension: An empirical study among Dutch students in grades 6, 8 and 10. *Language Learning, 48*(1), 71-10.

Sheorey. R., & Mokhtari. K. (2001). Differences in the metacognitive awareness of reading strategies among native and non-native readers. *System*, *29*, 431- 449.

Yang, Y. (2002). Reassessing readers' comprehension monitoring. *Reading in a Foreign Language, 14*(1), 18-42.

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