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Metacognitive Strategy Awareness and Its Effect on the Learners' Reading Comprehension Ability: Revisited

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Abstract: *The present study aims at investigating the effects of metacognitive awareness of EFL sophomore university students on the reading comprehension performance. Metacognitive learning strategies may help L2 learners to be more independent, and autonomous. Students without meta-cognitive approaches are essentially learners without direction and ability to review their progress, accomplishments, and future learning directions (O'Malley, et al. 1985). Three intact classes (N= 75) from among sophomore EFL Iranian undergraduates participated in this study. The classes were randomly assigned to summarization, question-generation (as metacognitive strategies), and control groups. The participants were given the reading comprehension section of the TOEFL as the pre-test. The experimental groups were taught how to prepare a summary out of a reading passage or generate questions, while the control group received no particular metacognitive training. In the end, the participants were post-tested by taking the reading comprehension section of the TOEFL. The results (in the contrary to the researchers' expectation) indicated that the experimental groups' mean scores were a little higher than that of the control group; however, using the one-way ANOVA, the differences observed between the means were not significant to reject the null hypotheses. This may suggest that short-term instruction of metacognitive strategies may not be so effective in improving EFL learners' reading comprehension ability.*

Keywords: *metacognitive strategies; learning strategies; summarization; question-generation; reading comprehension ability*

Introduction

Reading ability has the most crucial role as a communicative tool in many EFL/ESL contexts, at least in the academic contexts (Celce-Murica, 2001). Even in a broader perspective, many people are confronted with a kind of English reading in their everyday lives, whether in the form of words printed on paper or electronic forms of books, magazines, and so on. Like other essential language skills, reading is an active and complex process. Phakiti (2006) maintain that reading is complex, dynamic and multidimensional. It does not seem enough to decode word meaning to understand a text.

To achieve comprehension in reading, language learners may use a variety of reading strategies such as, summarizing, question generating, skimming, scanning, etc. The awareness of

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learners of the strategies used in different reading contexts may help them learn when and how to use the most appropriate strategies. This is what is called metacognition.

Metacognitive strategies defined differently by different scholars. Cromley (2002) generally defines metacognition as follows: Every time people think about what they said (e.g., Was I tactful?), check something they did (e.g., Did I get the correct change?), or decide whether they have finished a task (e.g., Is this note to my daughter clear enough?), they are engaging in metacognition, or thinking about thinking. (p. 187). Sen (2009, p. 2301) maintains that "metacognition refers to awareness in the individual of his /her systematic thinking about his/her own learning process." In fact, this is a type of metacognition which is called knowledge of metacognition or metacognitive knowledge by many researchers (e.g., Martinez, 2006; Livingston, 1997; O'Malley & Chamot, 1990).

Although reading is one of the main skills of language, the absence of reading strategy training, metacognitive strategy training, in particular, is noticeable among EFL/ESL schools and universities. Concerning the awareness of L2 learners over their general learning strategies, Oxford (2003) maintains that students are not always aware of the power of consciously using L2 learning strategies for making learning quicker and more effective. Skilled teachers help their students develop an awareness of learning strategies and enable them to use a wide range of appropriate strategies.

One of the reasons university students in Iran, especially post-graduate students, are willing to learn English is that they want to acquire the ability to read their technical textbooks, and online papers which are usually available in English. They also need to learn this skill as it is one of the main skills tested in international language proficiency tests such as TOEFL and IELTS that is how the participants in this study got motivated during the treatment conducted.

Concerning the methodology used in teaching reading, it seems there is still a traditional product-oriented view in many ESL/EFL contexts like Iranian context. As Zidan (1988) puts it, the teaching of reading comprehension has, for years, been a testing activity rather than a teaching responsibility where the students are typically assigned reading passages to read and answer the following questions. Students are usually asked to read and answer the following questions of texts without pondering over reading strategies they use reading the texts.

So much research has been conducted on the above-mentioned problem so far; however, students still have problems with reading comprehension. Metacognitive strategy training may help students read and understand passages more profoundly. Sbhatu (2006, p. 4) emphasized the active involvement of students in their own learning as a fundamental prerequisite for academic success and the instructional environment that must be designed to help learners actively engage in their own learning. Teaching students to use their metacognition in reading tasks seems to be difficult, as Cromley (2002) states adult literacy students 'metacognitive

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abilities from daily life may not easily transfer to their reading or other academic learning in classes. However, teaching the mentioned strategies seems to be necessary as Yoosabai (2009, p. 21) maintains metacognitive strategy training shapes the students to become independent readers which is the goal of reading.

If one wants to succeed in learning a second or foreign language, she or he needs to get familiar with learning strategies. Students should be prepared for independent learning, particularly when one is talking about university students. They must learn how to take responsibility for their own learning (Abdelhafez2006). Metacongnitive awareness plays a very important role here. The need for students to become more actively involved in the management of their own learning implies an associated need for each student to be more metacognitively aware of his or her personal resources. Teachers are not the vehicles to take students where they want to go, but they are somehow like police officers who guide people where and how to go (Wenden1998). Shedding more light on the effect of metacognitive awareness of L2 learners may help researchers and teachers to find new ways to direct students toward the use of more metacognitive strategies in their learning.

More support and clarification on the effect of metacognitive awareness on L2 learners' language proficiency, in particular reading proficiency, may encourage teachers and researchers to get to know more about how to boost up practical use of these strategies in learners. While many of the previous studies (Anderson, 1991; Bransford, 2000; Bruen, 2001) have employed think-aloud techniques to obtain information about learners' reading strategies, few of these studies have examined the metacognitive awareness of readers.

To this end the present study tried to investigate the influence of two metacognitive strategies (question generation and summarization) on the learners' reading comprehension ability. But before that a short history on the effectiveness of metacognitive strategy teaching and learning and the related strategies is mentioned.

Metacognitive strategies and reading comprehension ability

Philip and Hua (2006) investigated the effect of explicit teaching of reading strategies on the reading comprehension of a group of university students. Students were supposed to complete a number of English language courses, one of which was academic reading course. They were all taught through MSI (Metacognitive Strategy Instruction. The results of the study showed that both high proficient and low proficient students reading comprehension significantly improved at the end of the term.

Similarly, AL Tamimi (2006) investigated whether DRSI (Direct Reading Strategy Instruction) would enhance reading comprehension and metacognitive awareness of reading strategies of secondary school students. The results indicated that the experimental group had significant improvement in both reading comprehension proficiency and metacognitive

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awareness. Furthermore, Boulware-Gooden, Carreker, Thornhill, and Joshi (2007) and Cross and Paris (1988) found a positive effect of metacognitive strategies on the elementary learners' reading comprehension.

In another study, Sen (2009) conducted an experiment with 190 fifth-grade primary school students in one of the schools of Ankara, Turkey. The experimental group received 8-week metacognitive reading strategy training particularly focusing on raising the awareness of students about their reading strategies. Finally, the results showed that the experimental group significantly improved in the reading comprehension achievement scores when compared with the scores of the control group who continued with traditional training. In addition, Cubukcu (2008) selected two intact classes from third year teacher trainees in the English Language Department of Dokcuz Eylul University, Turkey. The results indicated that the experimental group significantly improved in reading comprehension.

Abdelhafez (2006), in a part of his study, investigated the effect of a training program focused on some metacognitive language learning strategies on the reading comprehension of first year university students. The metacognitive training program lasted for twelve weeks. The results of the study indicated that the experimental group excelled the control group in post-measurement of the reading comprehension test.

Totally, this brief history and other research has shown that when metacognitive strategies for comprehending text are explicitly taught, comprehension improves (Chrapcynski 2009). As Yoosabai (2009) mentions many researchers (e.g., Cequena, 2000; Palincsar & Brown, 1984; Chimbganda, 2006) have supported the positive effect of metacognitive training of students on their reading comprehension. What inferred from the above history is that metacognitive awareness has a positive effect on the reading comprehension of elementary and advanced language learners, especially, when the treatment extended to a longer period of time. But there are also studies that by and large non-supporting in this vein.

Takallou (2008) examined the effect of metacognitive strategy instruction on university students' reading comprehension and their metacognitive awareness. All the groups were given Oxford's (1990) SILL to assess their level of metacognitive awareness. Then the experimental groups participated in five sessions of metacognitive strategy instruction. The results showed that there was no significant difference in reading performance means of the two experimental groups; however both of the experimental groups significantly excelled the control.

Yuanzhong (2005) examined the relation of metacognitive knowledge and reading comprehension proficiency of college students. Using the Index of Reading Awareness, the researcher found that there was no significant difference in the level of metacognitive awareness between the two groups.

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Chimbganda (2006) remark that less skilled L2 learners use reading strategies carelessly and randomly. They do not usually know when and how to use the appropriate strategies in reading tasks. Lanford (2009) examined whether there would be any difference in the reading comprehension scores of low-level students before receiving additional instruction on reading comprehension strategies and after receiving the direct instruction on reading strategies. The reading comprehension test scores of the participants showed no significant difference; however, the qualitative data gathered by teachers‘ interviews and students‘ self-report suggested that the participants improved in using reading strategies in their reading activities.

Shifting to the specific use of metacognitive strategies, fulfilling the purpose of this study, Palincsar and Brown (1984) state that question generation and summarization metacognitive strategies are two of the most important metacognitive reading strategies that need to be taught to language learners.

Question-Generation and Reading Comprehension

From the very beginning, new-born children start asking questions about the world around them. Even before they can begin speaking, they generate questions in their internal world, i.e., their mind, about everything that happens around them. This is what makes them seek answers in the external world. They increase their knowledge by questioning and this question-generation may be a sign that they are actively focusing on what happens around them. Jensen (2010) remarks questioning is the catalyst for deep thinking.

Question-generation may be also important in language learning in general and reading comprehension of language learners in particular (Luxton-Reilly, Denny, Plimmer, and Bertinshaw 2010).

Mostow and Chen (2009) maintain that question-generation or self-questioning is the process in which students ask themselves questions about a text. Similarly, Seymour and Osana (2003, p. 333) mention that the goal of generating questions is to ask questions about the text that help explicate the main ideas of the passage. Miciano (2002) holds that question generating as a metacognitive strategy helps learners comprehend the main points of texts while monitoring what they read. Yoosabai (2009, p. 32) holds teaching students to generate questions during the reading process fosters comprehension and improves reading comprehension.

Concerning the function of question-generation in reading, Jensen (2010) states:

Good readers ask questions about what they read, as they self-monitor for understanding. They ask questions of themselves, of their peers and of their teachers. Pausing to ask questions is part of the reading process. By asking questions of the text, a reader is actively responding with the material to incorporate the new material into his or her schema (pp. 11-12).

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Cox (2005, p. 113) maintains a special relation exists between metacognition, question asking and text understanding. Hansen and Pearson (1983, cited in Cromley, 2002) mention that generating questions, readers seem monitoring what they read. Similarly, Mostow and Chen (2009) remark that questioning raises the metacognitive awareness of learners and helps them monitor their own comprehension.

Aliakbari and Mashhadialvar (2007, p.2) maintain that student-generated questions strategy is a simple but productive way to support reader engagement with the text. Yoosabai (2009, p. 106) also remarks that the ability to generate appropriate questions can enhance reading comprehension, because it fosters active reading and promotes an ongoing processing of information.

Luxton-Reilly, et al. (2010) state that many researchers (e.g., Barak and Rafaeli, 2004; Denny, Hanks, and Peerwise, 2010) say students who use the question-generation strategy more usually perform better in school exams. Gama (2004, p. 28) maintains research on self-questioning shows that questions created by the student are much more effective than questions given to the student by someone else. Cromley (2002) holds that poor readers use fewer strategies that are associated with monitoring, such as question-generation.

Andre and Anderson (1978) examined the effect of question-generation on reading comprehension of students in two separate experiments. In the first experiment, the results of the study indicated that the experimental group, compared with the control group, significantly improved in reading comprehension measurement after the treatment. In the second experiment, the design and the procedure of the experiment were exactly the same as that of the first experiment. However, students were put in three groups. The results of the final reading comprehension test showed that the questioning-with-training group outperformed the questioning group, which in turn excelled the read-reread control group.

Dorkchandra (2010), in a part of his study, investigated the effect of question-generation strategy on reading comprehension of Thai EFL university students. Both groups were pretested by a reading comprehension test adapted from the FCE test at the beginning of the experiment to assure the homogeneity of the groups. The results of the posttest measurements indicated that the experimental group significantly outperformed the control group in reading comprehension proficiency.

Malelohid, Prasertsan, and Chatupote (2008) investigated if training reading questioning enhances the English reading comprehension Of EFL learners. Comparing the pretest and posttest scores of both groups indicated that the posttest reading comprehension scores of both high- and low- proficiency groups were significantly improved. The results also showed that the low-proficiency group' posttest scores were more significantly improved than those of the high proficiency group. It may suggest they were more influenced by the question-generation strategy

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training. Similarly, Ghazanfari and Sarani (2009) examined the effect of question-generation on reading comprehension and recall of Iran EFL university students. The participants were randomly chosen from senior EFL learners. The obtained results showed that the question-generation group significantly outperformed the control group in the test. Two weeks later, both groups were again tested on their reading recall by a test developed by one of the researchers. The results of the recall test also indicated that the question-generation group significantly outscored the control group.

Similarly, Aliakbari and Mashhadialvar (2007) examined the effect of student-generated questions on reading comprehension of Iranian EFL learners. The participants were all majoring in mathematics and they were in the second term of the school year. The treatment lasted ten sessions during. The posttest measurement indicated that student-generated questions would enhance the reading comprehension of the learners more significantly than teacher-generated questions.

But there are also some studies that show contrastive results to what have been shown in the previous ones. For example, Miciano (2002) investigated the effect of question-generation training on reading comprehension of prose texts. The participants were Filipino second year university students studying English as a second language. The data analysis showed that the reading comprehension performance of the two groups in the posttest was not significantly different.

Anderson (1978) mentions research done by some researchers that did not find any relation between question-generation strategy and reading comprehension proficiency of language learners.

Summarization and Reading Comprehension

According to Jensen (2010) 'the ability to retell the key points of a text in a logical sequence and hold these details in memory is an important comprehension strategy called summarization. Often these key points are needed later in the text to make sense of what is read' (p. 11).

Kletzien (2009, p. 73) remarks that in order to summarize, a student must develop a topic sentence, distinguish between important and non-important details and decrease the length of a passage. Friend (2000) mentions that summarizing is drawing out the important information of a passage which requires reading the whole passage. Similarly, Jones (2003, p. 1) defines summarizing as how we take larger sections of a text and reduce them to their bare essentials: the gist, the key ideas, the main points that are worth noting and remembering.

Ghabanchi and Haji-Mirza (2010, p. 54) mention the process of summarization involves the extraction of the gist and main themes of what is read while integrating the details into a coherent whole. Friend (2000, pp. 321-322) also states most important, in order to enhance

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learning, summarization should be a process in which the ideas of a passage are related to one another, weighed, and condensed; a process of synthesis, not selection.

Melton (2003) mentions four essential features of summarization: first, it should be objective, that is to say, one should avoid using personal opinions summarizing a text; second, all the main ideas of the original text should be used in summarizing; third, the summary should give equal weight to all the main ideas of the writer of the text; finally, it should be brief and to the point. Palincsar and Brown (1984) state that many researchers consider summarization as a very effective comprehension monitoring technique (e.g., Anderson,2002., Chimbganda, 2006; Wittrock, 1990).

As Chimbganda (2006) maintains, in 1980s, most studies about the role of summarization on reading comprehension concerned L1 elementary and secondary school students. For instance, Baker and Brown (1984) found that poor L1 readers had problem with understanding summary tasks, whereas Meyer, Brandt, and Bluth (1980) concluded that poor readers had difficulty in selecting important points; Winograd (1984) found that poor readers had problem with condensing texts (Chimbganda, 2006).

However, concerning the research on the effect of summarization of reading comprehension of ESL/EFL students, there still seems to be lack of studies and experiments. Chimbganda (2006) mentions few studies have examined the effect of summarization on reading comprehension of native L1 university students, and even fewer on that of the ESL or EFL learners. He adds:

The decline of research in summarization came about before researchers had even started to scratch the surface of research in plural societies where ESL students speak two or more languages (Chimbganda, 2006, p. 72).

One of these studies is Karbalaei and Rajyashree (2010) where he investigated the effect of summarization instruction on reading comprehension of undergraduates. The experimental group went through an additional training program focusing on summarization instruction for two months, whereas the control received no particular treatment over summarization. The final result of the study showed significant improvement in reading comprehension of the experimental group in the post-test compared with that of the control group.

Ghazanfari and Sarani (2009) investigated the effect of summarization on reading comprehension and recall of short stories of EFL undergraduates. The results of data analysis showed that the summarization group significantly outscored the control group on reading comprehension achievement. Two weeks later, the students were given a recall test, the result of which also showed that the summarization group significantly outperformed the control group.

In addition, Ghabanchi and Haji-Mirza (2010) examined the effect of summarization instruction on reading comprehension of Iranian high school students who were learning English

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as a foreign language. The results of the study showed that the experimental group significantly outperformed the control group in posttest's measurement of reading comprehension proficiency of the participants. Likewise, Zhou (2008) examined the influence of summary writing on reading comprehension of EFL university students. The participants were third-year English major undergraduate students at Guizhou University, China. The treatment lasted 18-week period for both groups. The results obtained indicated that the summarization group significantly outperformed the control group in the reading comprehension test.

There are several studies that do not justify the previously mentioned results, too. For example,

Johns and Mayes (1990) analyzed the summary writing of university ESL students at San Diego State University. No significant differences were found in the overall summary products between the two groups, finally.

What most studies show is that summarization may enhance the reading comprehension of EFL/ESL learners. However, more research is needed to come to such a conclusion as there are many different cultures, languages, contexts, and situations in which students learn a language.

To this end, this study intends to examine the effect of the summarization and question generation as two of the metacognitive strategies versus what so-called traditional way of teaching reading comprehension on reading comprehension ability to see if any of these groups improves in their reading comprehension in the posttest. These strategies are used to see if making students reflect on these mental processes enhance their reading comprehension or not. It is expected that there should be no significant difference among the two groups involved in this study.

Research Questions

Q1: Does summarization instruction help EFL learners improve their reading comprehension ability?

Q2: Does question generation instruction contribute to the reading comprehension ability of EFL learners?

Q3: Does metacognitive awareness, totally, improve the reading comprehension ability of EFL learners?

Methodology

Participants

Seventy five of a hundred and ninety university students were randomly selected from three intact classes taking part in the same course unit(Advanced Reading 1).Then, they were

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randomly assigned to three groups of summarization (group A), question-generation (group B), and control (group C) groups. Their age range was 18-26 and the proficiency level was assigned as upper-intermediate based on the university report.

Instruments

Materials

Mosaic 1 Reading (Wegmann & Knezevic 2002) was used for the treatment of the experimental and the control groups. The passages worked on were from chapter eight and nine.

Tests

Two equivalent forms of a TOEFL (PBT) reading proficiency test were adopted for the pre-test and post-test measurements of all the three groups. Each test contained five short passages with 50 tests. The use of TOEFL tests motivated the learners to eagerly participate in the study.

Procedures

The study had a naturally occurring group design or as it is sometimes called: quasi-experimental design (Hatch and Farhady, 1981). The sub-design adopted for the study was Pretest-Posttest control group design (ibid., 1981, p. 22).

In the group A, summarization strategies were taught and in the group B question-generation strategies were taught to the students, and group C (the control group) was instructed by traditional reading comprehension techniques. The treatment took two sessions for each experimental group, each lasting ninety minutes. There was one week interval between the two sessions of the treatment for each of the two experimental groups.

Prior to working on the passages, participants of each of the two experimental groups were explicitly taught about the function and the way of using their targeted metacognitive strategy. Students were taught how to regulate and monitor their reading comprehension respectively by modeling the use of summarization and question- generation strategies in each group. Then they were asked to give their own summarization and question-generation of the second passage during each session. In fact, for both experimental groups, direct instruction, modeling, and follow-up practice with the support of the researcher were used as a way of working on the chosen metacognitive strategies.

Simultaneously, the control group students worked on the same passages of their course book; however, there was no specialized metacognitive awareness program for the control group. In fact, the control group was taught through the so called traditional way of teaching reading. That is to say, during each session, one or two of the students in the control group were asked to read

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the passages aloud for the whole class while the instructor asked the meaning of new words and expressions sentence by sentence or paragraph by paragraph.

To conduct the study, the summarization group-was taught how to apply the summarization strategies to summarize paragraphs of a text. In the first session, the students were asked to define summarization and to explain how they summarize texts. Then the researcher gave more information on the meaning, function, and the way of using summarization. The participants were also asked to provide a summary of a passages in each session of the treatment. The learners were required to be concise and avoid repetition. They were taught that by summarizing, they could actively reprocess the information of the text and expressed it in their own words. It had been stressed that they should include the major concepts or events and also their relationships.

The learners were taught that the first and the last one or two sentences of each paragraph usually contain the most important information of a text. Moreover, they were taught to choose the most general statement of each paragraph that explicitly explained the general topic of the paragraph as the first main idea to which other statements of the summary of the paragraph should refer. Subsequently, the researcher modeled and practiced utilizing summarization strategy in the context of reading a passage in the both sessions. In modeling, participants were explicitly shown how to use the strategy with a specific text and how to choose a topic sentence as a scaffolding of summary writing. They were taught how to use the main ideas and a few supporting details to write a summary. They could list the main ideas in phrase form. The students were asked to draw two columns, one (the left column) to write the main ideas and the other (the right column) to write supporting statements. Trivial and redundant points were rejected unless they were used to make the summary cohesive or to support the main ideas of the passage.

After all, the students were supposed to practice summarizing a text from in the first session, in small groups (each sub-group including five students), while the researcher monitored and helped the learners in their task. For instance, the learners were given feedbacks such as the followings:

A: Although the summary you have written is short enough, it does not give us all the important information.

B: You have mentioned all the important information and that’s very good, but you must try not to go into details of each paragraph.

C: Pay more heed to the content words used in the ascending and descending of every paragraph.

Supporting students may direct students to learn how to use the strategy appropriately while they learn the strategy. They need support, or scaffolding, when learning to use strategies and this

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scaffolding may include hints, questions, reminders, explanation, or other supports (Cromley 2002).

In the second session, another passage was practiced by the participants. However, this time, each paragraph was read by one of the students aloud for the whole class and after each paragraph, the sub-groups which were assigned to work with each other the previous session were supposed to come up with a few sentences as the summary. The sub-groups were supposed to discuss their suggested summaries while the researcher tried to cooperate with them in assessing the summaries.

For the question-generation group, at the beginning of the first treatment session, the researcher explained the purpose and value of asking questions in reading activities. He also taught the students how to develop the use of question-generation strategy in reading and also how to ask about the main concepts of a text through using WH-question words or Yes-no questions in the modeling. After modeling generating some questions out of a passage (the same passage as the one used in the first treatment session of the summarization group from), the researcher asked the learners to practice using this strategy with support.

Rather than expecting students to answer the questions posed in the book, the researcher asked students to make their own questions and ask these questions from their peers. Similar to the summarization group, the question-generation group was divided into five sub-groups whose members were supposed to ask their generated questions from their team-mates from the same passage of the book. All the sub-groups were monitored and supported during the task. A list of signal words including WH-words such as why, where, how, and why was put on the board for the students to be used as question-starters.

The second session of the treatment started by the researcher modeling one of the passages of the course book (the same passage as the one used in modeling in the second treatment session of the summarization group). Students generally ask questions about the text they read. In order to do this, they need to identify the information worth asking, i.e., the important content information. Therefore, WH-questions or information questions were focused upon more than yes-no questions. This does not mean that yes-no questions have no value being used, but WH-questions usually ask for more information and they may sound more communicative being used.

Subsequently, the participants practiced generating questions from one of the passage of the book. The sub-groups that were assigned to ask their generated questions from their group-mates in the previous session were this time supposed to ask their generated questions from the members of the other groups. Actually they co-operated their group members to pose some questions to be asked from the other sub-groups. Answering questions might have helped to make the task more communicative; it also helped check if other students had understood the intended meaning of the question generator. They were required to stop after reading each

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paragraph to ask the other sub-groups their generated questions. The learners practiced generating questions while peers answered the questions to provide feedback; simultaneously, the researcher tried to support and assessed their act of asking and answering questions.

Data Analysis

Finally, after the treatment sessions, an equivalent form of the TOEFL Reading Comprehension Section, similar to the one used in the pre-test, was given to all the groups in the post-test. As there were three groups compared, the ANOVA program was adopted for the study. The one-way ANOVA was run as there was one independent variable, i.e., metacognitive awareness of EFL learners which included question generation, summarization, and the traditional way of dealing with a reading passage as its three levels. The reading comprehension proficiency of the learners was considered as the dependent variable, which is supposed to vary by manipulating the independent variable, i.e., the metacognitive awareness.

Result

Table 1 below shows the means and the standard deviations of the groups involved.

Table 1-*Means and SDs of the Involved Groups in the Pretest*

Group	*Mean*	*N*	*Std. Deviation*
A (summarization)	*32.0000*	*25*	*3.26599*
B (question-generation)	*32.5200*	*25*	*3.00167*
C (Traditional Way)	*32.2000*	*25*	*2.69258*
Total	*32.2400*	*75*	*2.96302*

Although table 1 demonstrates that the mean performance of group B was a little higher than that of group C, which in turn was a little higher than the mean performance of group A, the results obtained through One-way ANOVA (shown in table 2) indicates that the differences were not big enough to be significant. In order to compare the means, One-Way ANOVA (analysis of variance) was run to see if the means were significantly different. Table 2 below shows the results obtained.

Table 2- One-Way ANOVA for the Pretest Results

Source of Deviation	**Sum of Squares (SS)**	**df**	**Mean Square (MS)**	**F-observed**	**F-critical**
Between Groups	3.440	2	1.720	.192	.826
Within group	646.240	72	8.976		

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Total	649.680	74

The F value observed in the results (at P= .05) indicates no significant difference among the means of the three groups of the study. The observed F value was .192 while as the table shows the value of F should be .826 to have a significant result. Therefore, the results of the pretest show that the three groups included in the experiment were homogeneous concerning their reading comprehension proficiency.

After the treatment, all the groups were post-tested by an equivalent test form of TOEFL PBT similar in format to that used in the pretest. Table 3 below shows the means and the standard deviations of the posttest measurements of the three groups.

Table 3- Means and SDs of the Involved Groups in the Posttest

Group	**Mean**	**N**	**Std. Deviation**
A (summarization)	33.0000	25	3.17543
B (question-generation)	33.2400	25	3.05887
C (Traditional)	*32.8000*	*25*	*2.16025*
Total	*33.0133*	*75*	*75 2.80199*

The results obtained show that the mean score of group B is a little higher than that of group A, which in turn is a little higher than the mean of group C. The results of one-way ANOVA, shown in table 4 below, indicate no significant difference between the means of the experimental groups and the control group in the posttest at ≤0. 05.

Table 4- *One-Way ANOVA for the Posttest Results*

Source of variation	*Sum of Squares*	*df*	*Mean Square*	*F-observed*	*F-critical*
Between Groups	*2.427*	*2*	*1.213*	*.151*	*.860*
Within Groups	*578.560*	*72*	*8.036*		
Total	*580.987*	*74*			

Comparing the means of pretest and posttest scores of all the groups of the study indicated a little improvement in posttest scores of the participants which can be attributed to practice effect or the natural growth processes of the participants.

To sum up, although the mean scores of the first and the second groups excel the mean score of the control group in the posttest, the difference between the mean scores of none of the groups is statistically significant. That is to say, summarization and question-generation instruction seem

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to have no effect on reading comprehension of EFL learners; subsequently, metacognitive awareness seems to have no significant relationship with reading comprehension of EFL learners.

Discussion

The finding apparently goes counter to what has already been found by many other researchers (e. g., Andre & Anderson, 1978; Dorkchandra, 2010; Flaitz, Feyten, & LaRocca, 1999; Zhou, 2008).

One may argue that the findings of the study suggest that, at least, short-term instruction of the above-mentioned metacognitive strategies seems to have no significant influence on reading comprehension of the students. However, as the mean performances of the experimental groups were a little higher than that of the control group in the posttest, it may suggest that longer metacognitive treatments may help researchers find significant differences between instructing metacognitive strategies and the traditional way of dealing with reading passages in classes.

The length of the treatment for presenting the summarization strategy was only two sessions in the study; therefore, even the small difference observed above in the mean performances of the two groups may suggest that longer summarization training be influential in the reading comprehension performance of learners.

Concerning the role of the length of the treatment in summarization strategy, Karbalaei and Rajyashree (2010) maintain that students need to practice the strategy over a long period of time in order to learn how to benefit it in their reading tasks. That is to say, the more frequent learners practice the summarization strategy, the more they may be able to grow their understanding of the strategy and its actual function in reading comprehension.

Students need time, support, and repetition in order to learn successfully how to use reading comprehension strategies in their reading tasks. That is to say, the mere metacognitive awareness of the learners may not be sufficient to influence their reading comprehension capability (Chrapcynski, 2009).

The results obtained in the posttest indicate no significant relation between question-generation strategy and reading comprehension of the learners, too. Time factor may be even more important in question-generation training, as students are rarely asked to generate their own questions out of reading tasks. As Miciano (2002, p. 213) remarks students have always been asked to answer somebody else‘s questions, either the textbook‘s or the teachers‘. It seems learners need more time to get used to applying this strategy in their reading comprehension.

Moreover, the multiple-choice format of the test used in the study may not appropriately evaluate the influence of question-generation. Students instructed to generate their own questions

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may not perform very well in passages with author-generated questions. Miciano (2002) maintain that when students generate and read to answer questions that are not congruent with the goals of instruction, we can expect their test comprehension scores to be lower. Miciano (2002) states:

Multiple-choice tests have been criticized for their insistence on a single correct answer; this conflicts with the constructivist perspective on learning subscribed to by many studies (Cromley, 2002; Cox, 2005; Bernhardt, 1991; Oller, 1979). However, multiple-choice tests are widely used for their objectivity and also their high reliability.

Pedagogical implications

The finding may remind teachers of the importance of metacognitive awareness of students on their reading comprehension proficiency. Instructing reading strategies such as summarization and question generation may help language learners achieve a high-level of reading comprehension proficiency. It may have testing implications, too. It may motivate test developers to pay more attention to developing items which assess learners' metacognitive strategy use. The results may encourage material designers, particularly Iranian course book writers, to focus more on the metacognitive aspect of their materials concerning all language skills in general and reading skill in particular.

Educational authorities should pay more heed to both teacher training and research development concerning the use of metacognitive strategies in reading. Learners need to know when, how, and why various strategies are used to accomplish different reading tasks. In order to teach metacognitive strategies to language learners, teachers should be trained to know more about the different types and functions of these strategies.

Conclusion

Although, the posttest result of the study showed no significant difference between the groups, experimental groups' mean scores were a little higher than that of the control group. Based on the findings of the study, it may be suggestive of the fact that short-term instruction of metacognitive strategies does not seem to be very influential in the immediate reading comprehension proficiency of EFL learners. Perhaps, long-term instruction of these strategies could help EFL learners improve their reading comprehension proficiency and, therefore, produce different results from what the present study came up with. However, more studies are needed to help researchers find out if long-term and short-term instruction of metacognitive strategies can help learners improve their reading comprehension.

Totally, Teachers and EFL practitioners could raise the metacognitive awareness of students, but this awareness-raising by itself may not be sufficient to improve the learners' reading comprehension; more beneficial study strategies besides metacognitive awareness-raising

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strategies seem to be required. For instance, visualization strategies, like those suggested by a number of researchers (e.g., Tomlinson, 1997; Ghazanfari, 2009; Block, 1986), are among such strategies which have proven to be positively influential on EFL learners' reading comprehension.

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