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## **Teaching Reading Comprehension Strategies to Iranian EFL Pre-University Students**

**S. Mehrpour\***

Assistant Professor  
Shiraz University, Shiraz  
email: smehrpur@rose.shirazu.ac.ir

**F. Sadighi**

Professor  
Shiraz University, Shiraz  
email: firoozsadighi@yahoo.com

**Z. Bagheri**

M.A. in TEFL  
Shiraz University, Shiraz  
email: Zbagheri2004@yahoo.com

### **Abstract**

The present study investigated the potential of implementing reading strategy instruction in raising learner readers' awareness of reading strategies, extending the range of strategies they employed and enhancing their reading comprehension ability. To conduct the study, 90 female pre-university students majoring in Natural Sciences were selected based on a convenient sampling procedure. After the students' existing strategy awareness and use were determined, the researchers started to teach them reading comprehension strategies explicitly. During this period of instruction, the students' strategy use was improved and reviewed at regular intervals through review exercises and interviews. To collect the necessary data, two types of instruments were employed, a reading comprehension test and two questionnaires. A group of 53 students (experimental) was taught to employ reading comprehension strategies in reading some English texts during a period of 15 sessions while the other group of 37 students (control) was taught reading comprehension traditionally. The findings of the study pointed to the problematic nature of

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\* Corresponding author

reading strategy instruction. While strategy training appeared to raise students' awareness of reading strategies and could encourage strategy use by some students, some strategies were found to be harder to be acquired. Moreover, the reading strategy instruction was not able to enhance the students' reading performance significantly based on the results of a reading comprehension test given to the participants at the end of the program.

**Keywords:** reading, instruction, strategy, comprehension

### 1. Introduction

An important part of learning a foreign language is mastering learning. Mastering the fundamentals of learning not only can help language learners in learning vocabulary, acquiring basic structures, and improving the necessary linguistic and communication skills, but it also helps the learners to be in active control of their own learning processes. The process of becoming successful at learning creates learners who are autonomous and employ individualized approaches to learning objectives. Paying direct attention to the process of learning and gaining mastery over the language content results in learning the content more successfully, and contributes to the development of lifelong learners (Rausch, 2000). O'Malley and Chamot are two of prominent figures in specifying learning strategies and conducting research on them. O'Malley et al. (1985b) categorized learning strategies under three main categories: metacognitive, cognitive and socioaffective. They also studied the use of strategies by ESL learners in the United States.

The application of learning strategies was later on extended to more specific domains of language such as teaching and learning language skills. For instance, since the late 1970's, many ESL/EFL researchers have begun to recognize the importance of the strategies students use while reading. Some empirical studies have been carried out on reading strategies and their relationships to successful and unsuccessful L2 reading (Hosenfeld, 1977; Knight, Pardon, & Waxman, 1985; Jimenez, Garcia, & Pearson, 1995). It is also the goal of language strategy instruction (Oxford, 1990). Williams and Burden (1997) for example, have pointed out that language teachers should go beyond the

transmission of knowledge and should empower students by helping them to acquire the knowledge, skills, and strategies needed to become autonomous learners who can take responsibility for their own learning.

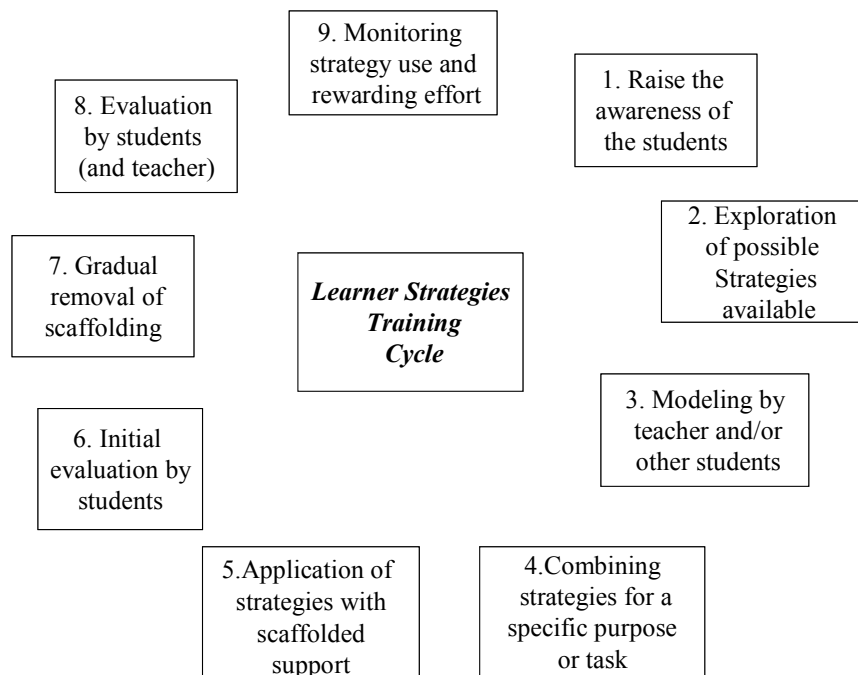
From among various types of learning strategies, reading comprehension strategies have long been recognized by researchers of second/foreign language reading (Brantmeier, 2002; Janzen, 1996; and Slataci & Akyel, 2002). Reading strategies have been defined by some theorists. They are referred to as mental operations which are used by readers when they read a text and try to understand it effectively (Barnett, 1988).

In fact, reading strategies show how readers conceive a task, what textual cues they attend to, how they make sense of what they read, and what they do when they do not understand. Reading strategies range from simple fix-up strategies such as simply rereading difficult segments and guessing the meaning of an unknown word from context, to more comprehensive strategies such as summarizing and relating what is being read to the reader's background knowledge. Generally, researchers claim that strategy use is different in more and less proficient readers, in that they use the strategies in different ways (Carrell, 1989). As a matter of fact, reading comprehension strategies separate the passive, unskilled reader from the active reader. Skilled readers don't just read, they interact with the text.

Many reaserches have indicated that teachers can teach reading strategies to students and when they are learned, this can help them enhance their performance on tests which invlove comprehension and recall of what is read (Carrell, 1985; Brown & Palincsar, 1989; Carrell, Pharis, & Liberto, 1989; Pearson & Fielding, 1991). Studies conducted on reading instruction and reading strategies (e.g., Davis, 2010; Khosravi, 2000; Salataci & Akyel, 2002; and Wright & Brown (2006), Shokrpour & Fotovatian (2009) indicated that reading comprehension strategy instruction had either a positive effect on learners' reading comprehension ability or their awareness of reading comprehension strategies.

Reading strategies are taught in a sequence of various steps. In a model proposed by Maccaro (2001), as shown in Figure 1, nine steps should be considered in instructing reading strategies.

Figure 1. Learner strategies training cycle (adapted from Maccaro, 2001, p.176).



Since, as far as the review of related literature is concerned, very few studies have been conducted to investigate the actual effect of teaching reading comprehension strategies on learners' reading comprehension performance in Iran. The present study aims to probe into this important issue by providing formal instruction of the strategies to a group of Iranian EFL learners and comparing their reading comprehension performance with another group not receiving such an instruction.

## 2. Literature Review

In the literature, studies that have been carried out on of reading strategy instruction are divided into two main categories. The first category of the studies describes the readers' strategy use. The results of these studies have revealed that strategy use is different among more and less proficient readers (Carrell, 1989; Janzen, 1996). Hong-Nam and Leavell (2006) in a study on language learning strategy use revealed that students in the intermediate level reported more use of learning strategies than beginning and advanced students and that more strategic language learners advanced along the proficiency continuum faster than less strategic ones. Yau (2005) in another study found that proficient readers employ more sophisticated approaches to reading than less-proficient readers. For instance, in his study the skilled reader employed strategies of inferencing, summarization and synthesis during and after reading, while the less skilled reader applied bridging inferences, paraphrasing and repetition. Yaali Jahromi (2002) concluded that the high proficient students used more strategies. The results of a study by Al-Melhi (2000) on the reported and the actual reading strategies and the metacognitive awareness of a random sample of fourth-year Saudi college students as they read in English as a foreign language showed that some differences did exist between the skilled and less-skilled readers in terms of their actual and reported reading strategies, their use of global and local strategies, their metacognitive awareness, their perception of a good reader, and their self-confidence as readers.

The second category of studies has been conducted to investigate the effect of reading strategy instruction on the readers' reading performance. Davis (2010), based on a meta-analysis of comprehension strategy instruction for upper elementary and middle school students in America, concluded that instruction on the use of reading comprehension strategies has a positive impact on students' achievements in grades 4-8.

In still another study, Shang (2010) investigated a group of Taiwanese EFL learners' use of three reading strategies (cognitive, metacognitive, compensation strategies), their perceived impact on the

learners' self-efficacy, and the link between reading strategy use and perceived self-efficacy on their English reading comprehension. The results of this study showed that metacognitive strategy was used most frequently, followed by compensation strategy, and then cognitive strategy. Besides, a significant positive relationship was found between the use of reading strategies and perceptions of self-efficacy. However, reading strategies were unrelated to reading achievement.

McKeown, Beck, and Blake (2009) conducted a two-year study in which standardized comprehension instruction for representations of two major approaches was designed and implemented. The effectiveness of the two experimental comprehension instructional conditions (Content and Strategies) and a control condition were compared. Content instruction focused students' attention on the content of the text through open, meaning-based questions about the text. In strategies instruction, students were taught specific procedures to guide their access to text during reading of the text. The results of the study revealed that there was no difference between the performances of the two experimental groups for some aspects of comprehension. However, for narrative recall and expository learning probes, the students following content instruction outperformed those following strategy instruction.

Wright and Brown (2006) explored the potential of reading strategy instruction in raising the learner readers' awareness of reading strategies, in extending the range of strategies they employed and in encouraging learners to monitor and reflect upon their reading. The findings revealed that strategy training could encourage learner readers to reflect on their strategy use and seemed to boost their confidence in their own reading abilities.

Salataci and Akyel (2002) investigated the possible effects of reading instruction on reading in Turkish and English. The results indicated that strategy instruction had a positive effect on both Turkish and English reading strategies and on reading comprehension in English.

Khosravi (2000) made an attempt to investigate the effect of scanning and skimming, as two reading strategies, on Iranian EFL

students' reading rate and reading comprehension. The analysis of the data indicated that scanning could significantly improve the students' both reading rate and reading comprehension, while skimming only accounted for significant improvement of the reading comprehension of the subjects.

Shokrpour and Fotovatian (2009) conducted an experimental study to determine the effects of consciousness-raising of metacognitive strategies on a group of Iranian EFL students' reading comprehension. The results of this study revealed that compared to the control group, the experimental group showed a significant improvement in reading comprehension at the end of the treatment period.

Taking a look at studies reported above, one can come to the conclusion that the area of reading comprehension strategy instruction still requires further research, especially in an EFL context such as Iran and the present study intends to explore the issue more deeply by addressing a number of variables such as learners' awareness of reading strategies, the extension of the range of strategies used by learners, and the effectiveness of reading comprehension strategy instruction.

### **3. Objectives and Significance of the Study**

This study intended to investigate the effect of teaching reading strategies which actively engage the learner and the effect of repeated practice of such strategies on raising the learner readers' awareness of the strategies. It attempted to explore the potential of strategy instruction in extending the range of strategies that learners (in this case, a group of pre-university students in an EFL context) employ. Secondly, it investigated whether the training method was effective in enhancing the learners' reading comprehension ability. Since this study was conducted in a class where the students' reading ability was mixed, an attempt was made to find out how students with different reading ability levels were influenced by reading strategy instruction.

The present study enjoys significance in that it can provide an insight to the effect of reading strategy instruction on learners'

performance and their awareness of reading strategies. In fact, reading strategy instruction, due to its complexity, has rarely been conducted in an EFL context such as Iran.

### **3.1 Research questions**

Accordingly, this study aimed at finding answers to the following research questions:

1. Does strategy instruction significantly enhance the learners' awareness of reading strategies?
2. Does strategy instruction significantly help learners succeed in extending the range of strategies they employ to involve both top-down and bottom-up processing?
3. Does strategy instruction significantly enhance learners' reading ability?
4. How is the effectiveness of strategy instruction related to the learners' reading ability?

## **4. Method**

### **4.1 Participants**

This study was conducted using two groups of 90 female pre-university students in a pre-university center. They ranged in age from 17 to 19 and had already studied English for 6 years at school. Though the students had studied English for 6 years at school, since they are still taught English mainly based on Grammar-Translation Method, their knowledge of English is not usually so high. Due to the regulations of the center which imposed limitations on selecting the participants, the selection of the participants of the study was carried out based on convenient sampling procedure. Since the number of students in each class of the pre-university center was not large enough, initially two intact classes were assigned to the experimental group and two to the control group to have enough number of participants for the study. However, because what was done in both the two control groups and the two experimental groups was completely similar, it was finally decided to treat the



experimental groups and control groups as two large groups. Another point which should be added here is that at the beginning of the study the number of students in the two groups was almost equal; however, as some students, especially in the control group, did not take part either in the pre- or the post-reading-comprehension test, they were excluded from the study and, as a result, at the end of the study the number of participants reached 90 (53 in the experimental group, and 37 in the control group).

#### **4.2 Procedure**

One group consisting of 55 students served as the experimental group. The students in this group were divided into three reading ability levels based on their scores in the reading pre-test: low (with scores one standard deviation below the mean), intermediate (with scores between one standard deviation below and above the mean) and high (with scores one standard deviation above the mean). The researchers first modeled the strategies for the students and gave them enough practice on how to use them while reading. This was done during a 15-hour interval of strategy instruction. Each student in the experimental group was also given a 12-item review sheet or checklist of strategies adapted from Rusciollelli's (1995) to complete during the three review exercises which were planned at regular intervals throughout the instruction period. The three review exercises were supposed to allow the researchers to track the students' implementation of strategies to the extent possible. The other group which consisted of 55 students at the beginning of the study was regarded as the control group and received no strategy instruction, but participated in pre-and post-testing. However, in this group, the researchers followed the traditional reading comprehension teaching practices for helping students to read passages appearing in their textbook.

### 4.3 Instruments

In order to gather data, two instruments were employed in this study: a reading comprehension test, and an assessment sheet.

#### *Reading proficiency test*

A reading proficiency test was constructed by the researchers and administered to all the participants in both the experimental and the control groups twice, once as a reading comprehension pre-test before embarking the study and another time as a post-test at the end of the study. Furthermore, the scores of the reading pre-test were used to divide the students of the experimental group into three different reading proficiency levels— namely low, intermediate and high to see the interaction between different levels of reading proficiency and strategy instruction. The test consisting of 30 multiple-choice items included 6 passages, ranging from 115 to 150 words in length and the average readability index .70. The topics of the test were related to the topics of the students' textbook taught in the class. The reliability of the reading comprehension test was computed through KR-21 method of estimating reliability after it was administered as a pretest to both groups. The reliability index obtained was 0.76 which revealed that the test was a reliable measure of reading ability. In addition, to make sure about the validity of the pre-test, the reading comprehension section of a paper-based version of a TOEFL was also administered to the participants. Although the administration of such a test to such students might sound a bit illogical considering their overall level of proficiency in English, it was the only way possible to make sure about the validity of the reading comprehension test which, as the main instrument for data collection, was used both as a pre-test and a post-test. The scores obtained from the administration of this test and the pre-test were correlated and the index obtained was 0.68, which showed that the pre-test also enjoyed an acceptable level of concurrent validity.

#### *Questionnaire*

This study also employed a short assessment sheet adapted from a questionnaire survey used by Rusciolelli (1995), which was based on

Barnett's (1988) questionnaire. This questionnaire with the reliability index of 0.76, obtained through Alpha Cronbach measure of homogeneity, aimed at eliciting perceived strategies from the students. The assessment sheet with 12 items and based on a Likert scale ranging from 'never' to 'always' was employed to highlight the frequency of strategies used by the students of the experimental group before starting the instruction.

In order to enhance the reliability of the results of the study and permit a degree of triangulation in the third phase of the study, some students were chosen randomly from each proficiency group and interviewed by the researchers. The students were asked questions about whether they were familiar with the strategies before the instruction, whether researchers' modeling of the strategies helped them follow the strategies more easily, which strategies they found most useful, and how they felt about the usefulness of the strategy instruction program and its effect on their reading comprehension ability.

#### **4.4 Materials**

The texts which were employed during the instructional practice procedure were taken from the subjects' English text-book. The passages contained around 650 words, with the average readability of 57.27. Because of the length of the chosen passages, each passage was covered in two or even more sessions. The texts included different topics such as earthquakes, IT, child labor, space exploration and the great people.

#### **5. Data Analysis**

Prior to the experiment and in order to make sure that no significant difference in terms of reading comprehension ability existed between the two groups, the reading comprehension pre-test was administered to both control and experimental groups. An independent samples t-test was then run to see if the two groups performed significantly differently on the reading comprehension pre-test or not. The results obtained from this

statistical analysis (Table 1) revealed that the two groups did not differ significantly in their performance on the reading comprehension pre-test.

Table 1. Independent t-test comparing the performance of the two groups on the reading comprehension pre-test

Variable	N	Mean	SD	S.E. of Mean	DF	Sig.
Exp.	53	13.26	5.72	.78	88	
Cont.	37	15.16	5.48	.90	79.6	.997

$p < 0.05$

In the next stage, the students in the experimental group were classified into three reading ability levels— low, intermediate, and high— based on their scores in the reading pre-test. Before starting the explicit teaching of reading strategies, the students in the experimental group were assigned to small groups. In order to elicit the strategies of which the students were already aware, a text appropriate in length and difficulty level based on its readability index was given to each group and the students were asked to read it. During reading, they were given the first assessment sheet to reflect upon, and were asked to tick the items they employed while reading the passage and to note down the frequency of their use of strategies 7 to 12 in deriving meaning.

In the practice phase which took place in 15 sessions, the strategies highlighted by the Likert-scaled survey as well as a list of other strategies assumed to be beneficial in comprehending the reading passages together were first modeled and practiced by the researchers. The purpose of this step was to make the students use a wide range of strategies from simple recognition of words to understanding the general and detailed meaning of longer texts. A series of observations was also made by the researchers on the students' employing strategies at regular intervals throughout the experimental period. The students were given the review sheet or the checklist of strategies adapted from Rusciolli's (1995 as cited in Wright and Brown 2006) work. The checklists were completed during or after the completion of the exercises in order to determine the strategies which were employed automatically by them.

After implementing the 15-session training program, all the participants in the two groups were given the reading comprehension post-test, the same test which had been administered as the pre-test before starting the training. For the sake of enhancing the reliability of the results of the study and permitting a degree of triangulation in the third phase, some students were chosen randomly from each proficiency group and interviewed by the researchers on the strategies they used, and the strategies they thought most useful and their perception of the usefulness of the strategy training program. The interviews were tape-recorded and analyzed later on.

*The reading comprehension post-test*

Descriptive statistics of the reading comprehension post-test are summarized in table 2.

Table 2. Descriptive statistics of the reading comprehension post-test

Variable	N	No. of Items	Mean	SD	Min	Max
Exp	53	30	17.88	5.65	6	28
Con	37	30	17.24	6.37	6	28

In order to see whether the treatment given to the experimental group had caused any significant change in this group and to see if the performance of the students in this group was significantly different from that of the control group, an independent t-test was run between the scores of the reading comprehension post-test of both groups. The results obtained from this statistical test are presented in table 3. below.

Table 3. Independent t-test comparing the performance of the two groups on the reading comprehension post-test

Variable	N	Mean	SD	S. E. M	DF	T	Sig.
Exp.	53	17.88	5.65	0.77	88	0.504	0.239
Cont.	37	17.24	6.37	1.04			

The results presented in Table 3 demonstrate no significant difference in the performance of the two groups on reading comprehension test ( $t= 0.504$ ,  $p> 0.05$ ), suggesting that reading strategy instruction was not able to exert a significant influence on the reading comprehension performance of the students in the experimental group on the post-test.

However, a comparison made between the mean scores of both groups in the two tests given before and after the instruction revealed that there is a considerable boost in the mean score of the experimental group compared with that of the control group. To make the comparison easy, the means of both groups on reading comprehension pre- and post-tests are presented in table 4.

Table 4. Mean scores on reading comprehension pre-and post-tests

Groups	Exp	Cont
Pre-test	13.26	15.16
Post-test	17.88	17.24

In the next step, and in order to investigate whether the treatment given to the experimental group had caused any significant change within this group and to see if the students in this group had performed significantly differently on the post-test compared with the pre-test, the reading comprehension pre-and post-test scores of the experimental group were compared using a paired t-test. The results obtained from this statistical test are summarized in table 5.

Table 5. Paired t-test comparing the performance of the experimental group on the reading comprehension pre-and post-tests.

Pair1(EXP)	Mean	SD	S.E.M	DF	t	Sig.(2-ailed)
Pretest-posttest	4.62	3.87	0.532	52	8.67	.000

As the above table demonstrates, a significant difference was found between the performance of the students of the experimental group on the pre-and post-tests suggesting that reading comprehension strategy instruction could create a significant change on the behavior of the aforementioned group within the instruction period.

Furthermore, the effectiveness of the strategy instruction in terms of the students' reading ability level was sought; that is, it was investigated whether or not all members of the experimental group including low, intermediate and high proficiency groups benefited similarly from the strategy instruction. To achieve this purpose, the scores of the students in the experimental group were divided into three reading ability groups based on the results of the reading comprehension pre-test. Subsequently, the gain scores of the three groups were subjected to one-way ANOVA. The results of the one-way analysis of variance are presented in the following table.

Table 6. One-way analysis of variance run for the three reading ability groups' gain scores

	Sum of Squares	D F	Mean Square	F	Sig.
Between Groups	0.216	2	0.108		
Within Groups	2.208	50	0.044	2.442	0.097
Total	2.424	52			

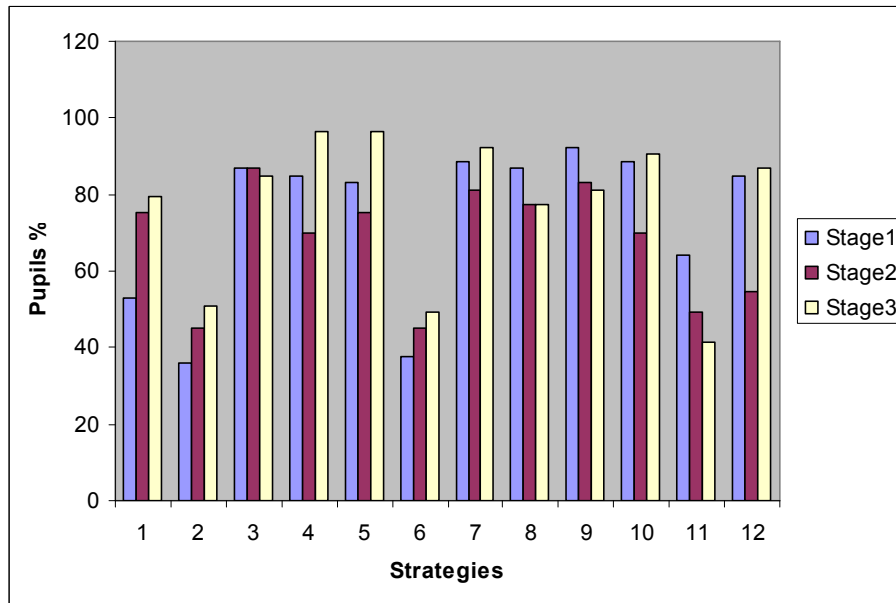
As the Table shows, the difference between the reading performances of the three reading ability groups is not statistically significant suggesting that the three groups were influenced similarly by the strategy instruction.

#### ***The strategy review exercises and the questionnaire***

The analysis of the strategy review sheets or check lists was done to determine which strategies were used by the students and whether strategy use changed over the period of time when the treatment was in progress. The results are shown in Figure 2. Stages 1, 2, and 3 referred to

in this figure correspond to the three strategy review exercises outlined in the reading strategy instruction, practice and review sessions.

Figure 2. Strategies used by the students of the experimental group during 3 review sessions



Key to strategies used:

#1. Reading text once, #2. Reading text twice, #3. Reading the first line of paragraphs, #4. Using titles to predict text content, #5. Using illustrations to understand content, #6. Reading questions first, #7. Using teacher's introduction to understand content, #8. Guessing meanings based on cognates in English, #9. Guessing meaning based on similarity to other words in TL, #10. Guessing meanings from context, #11. Using dictionaries, #12. Writing main points in one's own words

It should be mentioned that strategies # 1, 2, 3, 4, 5, 7, 10, and 12 involve top-down processing while items # 6, 8, 9, and 11 necessitate bottom-up processing.

Figure 2 demonstrates that in most of the cases strategy use varied from one stage to the next among the students. The most frequently used



strategies across all three stages were: Reading the first line of paragraphs (#3), using teacher's introduction to understand content (#7), and guessing meanings based on the similarity to other words in TL (#9). Strategies used moderately were: use of titles to predict text content (#4), use of illustrations to understand content (#5), guessing meanings based on cognates in English (#8), guessing meanings from context (#10) and writing main points in one's own words (#12). And the least frequently used strategies were: reading text twice (#2), reading questions first (#6), using dictionaries (#11), and skim reading or reading text once (#1).

As Figure 2 demonstrates, the instruction could extend the range of using most of the strategies during the intervention period. With regard to strategy #1(reading text once), the students appeared to make greater use of this strategy as time passed. This is also true of strategy #2 (reading text twice). The use of this strategy did appear to increase over the three stages although the amount of the strategy use was not high compared with other strategies. The low use of strategy #2 might be due to lack of time to employ it or might be a result of an increase in the number of students who learned to read the questions before reading the text (strategy #6). Accordingly, an increase in the use of this strategy from stage 1 to stage 3 can be explained by the fact that students were given more time during exercises and therefore, sufficient time helped students to read the texts twice.

The use of strategy #3 (reading the first line of paragraphs) remained constant during the first two sessions; however, its use dropped in stage three. The reason for the drop in the use of this strategy in the third session might be attributed to the fact that some texts used for practice during the practice phase did not include the main point of the text exactly in the first line and therefore this strategy could not be used as a useful strategy. This was the case with the use of strategies #4 and #5. The use of these two strategies appeared to increase over stages 1 and 3. However, their use dropped in the second stage. It is probable that strategy use might have been influenced by the texts selected for a particular exercise. For instance, some texts used during the review

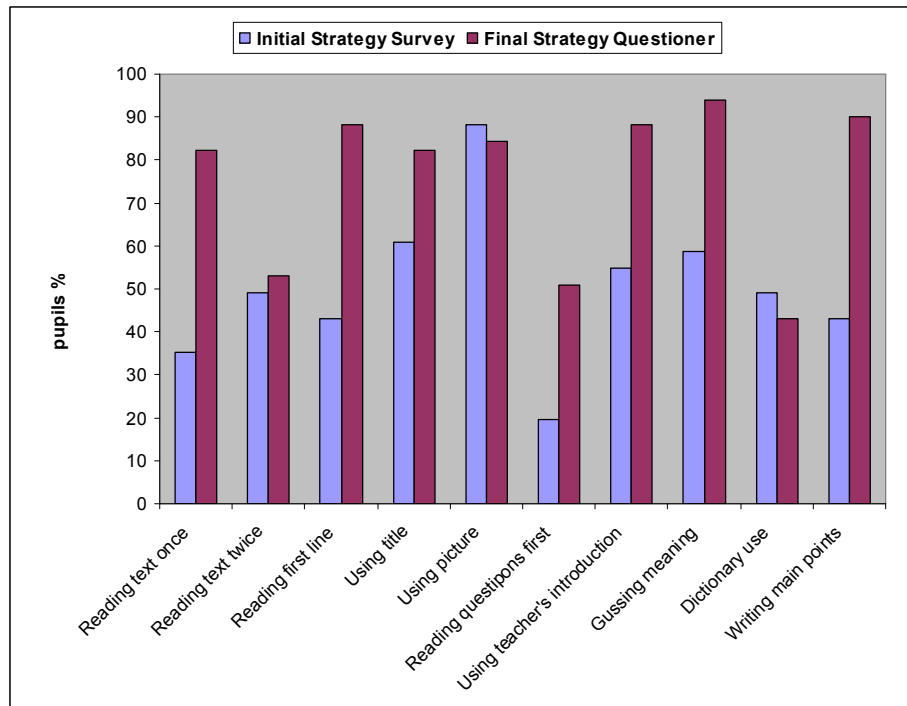
sessions did not include a title or an illustration. This might be the reason for the decrease in the use of these two strategies.

The use of strategy #6 (reading questions first) showed an increase over the three stages although this strategy, like strategy #2, was not employed frequently by the students of the experimental group. The use of strategy #7 (using teacher's introduction) showed an increase during stages 1 and 3. However, a drop in the strategy use occurred in the second stage.

Guessing strategies including strategies # 8, 9, and 10 varied in use. Except strategy #10 whose use remained high by stage 3, the use of the other two strategies remained constant or decreased slightly from stage 1 to stage 3 over time. This was perhaps partly owing to students' working on longer and complex texts as the study approached its end. Dictionary use (strategy #11) appeared to fall in general among all students by the final stage. The drop in dictionary use among students might be a consequence of instruction which discouraged the students from over-reliance on the use of dictionaries. However, it is more likely that other factors influenced the frequency of the use of this strategy, too. Either a dictionary was not available for the use of the students or the students were not allowed to use one in the class. According to the findings of the review exercises, it can be concluded that reading strategy instruction has been successful in decreasing the use of bottom-up strategies such as strategies #8, 9 and 11 in favor of more top-down strategies like strategies # 7, 10, and 12.

In order to see whether any significant change had occurred to the awareness of and use of the strategies among the students in the experimental group, the strategies identified to be used in the initial strategies survey were compared with those actually employed in the final questionnaire given to the students. The analysis of the data was carried out using Excel Microsoft. The results of this comparison are presented in figure 3.

Figure 3. Strategies used in the initial strategies survey compared with those in the final questionnaire



As the figure demonstrates, except for the strategies "using pictures to help understand what the text is about" and "dictionary use", an increase in the frequency of using other strategies is obvious. The figure also shows that the greatest improvement is seen in using the strategies: reading text once, reading first line of paragraphs, reading questions first, and writing main ideas in one's own words. A relatively moderate change is seen in employing the strategies "using the teacher's introduction", and "guessing the meaning of the words". A slight change is seen in using the strategies "reading text twice", and "using title to anticipate what the text is about". A drop is noticed in using the strategies "dictionary use" and "using illustrations" when the performance of the students in initial questionnaire and the questionnaire used by the end of the study are compared.

In order to statistically investigate whether reading strategy instruction could raise the students' awareness of reading strategies, a paired t-test was run to compare the experimental group's scores obtained from the questionnaire employed in the initial survey with the scores obtained from the questionnaire used at the end of the instruction. The results of the paired t-test are presented in table 7.

Table 7. Paired t-test comparing the performance of the experimental group on the initial and final reading comprehension strategy use questionnaire

Pair 1	Mean	SD	t	DF	Sig.(2-tailed)
Initial Survey - Final Questionnaire	2.706	2.042	9.461	50	0.000

As the findings demonstrate, there is a significant difference between the experimental group's scores on the initial and the final questionnaires suggesting that the reading strategy instruction could enhance the awareness of the reading strategies among the students of the experimental group.

Moreover, in order to statistically compare whether the strategy use changed over the instruction period, (i.e., the three review sessions), the experimental group's scores in the three review sessions were subjected to repeated measures. The results of the analysis are presented in table 8.

Table 8. Repeated measures comparing the strategy use over three sessions multivariate tests

Effect		Value	F	Hypothesis is DF	Error DF	Sig.
FACTOR1	Pillai's Trace	0.773	52.255(a)	3.000	46.000	0.000
	Wilks' Lambda	0.227	52.255(a)	3.000	46.000	0.000
	Hotelling's Trace	3.408	52.255(a)	3.000	46.000	0.000
	Roy's Largest Root	3.408	52.255(a)	3.000	46.000	0.000

As the results indicate, a significant difference was found in the use of reading strategies between the review sessions 1 and 3, and also 2 and 3 ( $p < 0.001$ ). The significant difference points to the improvement in the students' strategy use and in extending the range of strategies students employed over time.

## 5.2 Interviews

The analysis of the contents of the interviews carried out with the students during the instruction period revealed that all students were satisfied with the instruction of the strategies. Interviews revealed that students had never been taught reading strategies before. Although they had employed some strategies in their reading activities, this was done subconsciously. In fact, interviews showed that the strategy instruction was able to raise the students' awareness of reading strategies. All of the students believed that the reading strategy training they had received as part of the study was useful. Almost everyone stated that they felt their reading skills had improved as a result of instruction and that they were now more confident in their reading abilities.

## 6. Results and Discussion

To sum up the final results of the study, this study attempted to seek answers to four research questions. The questions will be restated and the answers, based on the findings of the study, will be provided below.

### 6.1 *Does strategy instruction significantly enhance the learners' awareness of reading strategies?*

As Table 7 and Figure 3 indicate, the answer to this question is positive. Findings of this study pointed to a difference in the experimental group participants' consciousness of the reading strategies as shown by using the reading comprehension questionnaires at the initial and final stage of the experiment. Furthermore, the results obtained from the analysis of the interviews are consistent with those obtained from the statistical analyses.

The findings of this part of the study seeking the effect of teaching reading strategies on raising the awareness of the strategies on the students' part are consistent with those carried out by Wright and Brown (2006), Soonthornmanee (2002), Al-Melhi (2000), Carrell (1998), Auerbach and Paxton (1997), Benito et.al., (1993), Zhicheng (1992 as cited in Koda, 2005), and Carrell et. al. (1989). In all the mentioned studies, results indicate that the students' metacognitive awareness increased at the end of the awareness-raising programs.

**6.2** *Does strategy instruction significantly help learners in extending the range of strategies they employ to involve both top-down and bottom-up processing?*

Considering what Figure 2, and Table 8 present, the answer to this question is positive, too; that is, strategy instruction succeeded in extending the range of strategies the students employed to involve both top-down and bottom-up processing. In fact, there are some indications that the implementation of strategies which actively engage students (O'Malley and Chamot, 1990) and the repeated practice of such strategies may have been at least partially effective in developing some of the reading skills of the students who took part in the study. This practice appeared over the three stages of strategy review and pointed to some increase in use of various bottom-up and top-down processes.

The results of the interviews conducted with the students during the instruction period are consistent with the findings obtained from the questionnaires. In the interviews, the students themselves noted that the more reading they did and the more they used different reading strategies, the more their ability to comprehend improved. The greater use of top-down processing appears to be reflected among students in their reported use of guessing the meaning of unfamiliar vocabulary items or unclear points from the meaning of the rest of the text or from the first line, and through summarizing the main ideas. An apparent drop was observed in bottom-up processing strategies like strategies # 8, 9, and 11, as shown in figure 2. In fact, the number of those who read the text word by word in order to comprehend the main idea, and looked

every word up in a dictionary appeared to decline over the three review stages. This may reflect the students' effort to obtain a better overall understanding of the text by avoiding the use of bottom-up processing alone. However, the findings point to the problematic nature of reading strategy instruction. While strategy instruction appeared to raise the students' awareness of reading strategies and may have encouraged some students' use of certain top-down or bottom-up processing, some strategies seemed harder to acquire. In fact, as Figure 2 demonstrates, different strategies observed seem to have responded differently to the instruction. While an increase or decrease can be seen in some, there seems to be little change in others (e.g. strategy #10 *guessing meaning from context*, #12 *writing main words in one's own words*). In fact, some strategies seem to be easier to acquire than others. Some students, as Wright and Brown (2006), state "simply do not make the transition to more complex strategies" (p.30). The results of this facet of the present study are in line with those obtained by Wright and Brown (2006).

### **6.3** *Does strategy instruction significantly enhance the students' reading ability?*

According to the results of the analysis shown in Table 3, the answer is negative. In other words, although reading strategy instruction was successful in enhancing students' awareness of the reading strategies, it could not influence their reading ability sufficiently and did not make statistically significant improvement in the students' reading ability. This is, to a great extent, in line with Shang's (2010) study in which the researcher did not find any relationship between strategy instruction or use and reading achievement. Furthermore, there seems to be some justifications for this finding.

According to Kintsch & Kintsch (2005), reading comprehension is often discussed in terms of being a process involving the integration of decoding ability, vocabulary knowledge, prior knowledge of the topic considered, and relevant strategies to make sense of a text and understand it. Based on this view, reading strategy instruction could partially change the behavior of reading in the students. However, this is not the whole

story since there are other factors contributing to the success of the students during the reading activities. One of the most important factors is the vocabulary knowledge of the students. As it is apparent in the literature, there is a close relationship between reading comprehension performance and vocabulary knowledge. In fact, students' ability to comprehend reading texts depends on the amount of unknown vocabulary within the texts. It should be mentioned that there is no clear consensus regarding the amount of unknown vocabulary which makes the text comprehensible. According to Nation (2006), at least 98% text coverage would be needed for most students to gain adequate comprehension. Carver (1994 as cited in Nation, 2006) also believes that even 98% coverage does not make comprehension easy. He states that "when the material being read is relatively easy, then close to 0% of the words will be unknown" (p.60). Based on this view, it is likely that the amount of unknown vocabulary provided in the students' reading text-book hindered an adequate comprehension of the texts covered during the treatment. This is supported by the findings of a study conducted by Derahaki (2008) on the vocabulary coverage of the pre-university English book. The findings of his study revealed that although some words are glossed in the margin of each text, and some of unknown words are repeated through the texts, learners are not provided with enough opportunities to gain vocabulary knowledge through reading. In other words, the students lacked the required minimum vocabulary knowledge to read the texts with ease". According to this study "taking 98% coverage as the threshold level required for comprehension of a text, the pre-university English text-book seems to place a heavy burden on the students in terms of the vocabulary knowledge required for comprehending the texts"(p. 83).

The results of the interviews conducted in the present study are also in line with the findings of Derahaki's (2008) study since the interviews indicated that the students, especially the weak ones, could take advantage of the reading strategies presented to them only in easier texts while in reading more difficult texts they were overwhelmed by so many



new words, and even when these words were glossed in their text-book, they were not able to guess the meaning of the words through context or surrounding words.

In addition, the results might have been influenced by the topics of the texts. Based on the results of the interviews with the students, it was found that the texts appearing in the text-books were not based on the students' interests and background knowledge. Some of the texts had specialized topics and vocabulary on subjects like 'Space Exploration', 'Information Technology (IT)', and 'Global Warming' with which the students did not have enough familiarity to help them comprehend the texts and the researchers had no control over selecting or changing the texts in the students' text-book.

Another justification which is not unrelated to the previous one is the problem of language proficiency. Alderson (1984) believes that reading in a second language is a difficult task for most second language learners. However, it should be determined whether this difficulty stems from problems in learning the language or problems in reading. He introduces the concept of "threshold hypothesis" which suggested that low second language (L2) proficiency blocks the transfer of first language (L1) reading strategies to the reading of L2 texts. Threshold hypothesis explains that bilinguals must achieve minimum levels or thresholds of proficiency in both languages before the benefits of bilingualism can be observed. Accordingly, gaining a certain degree of L2 proficiency can enable students to read and actually comprehend what is being read and lack of language proficiency would render the text incomprehensible. A study of Korean students in middle school and the first year of high school done by Lee & Schallert (1997) revealed some evidence supporting the idea that a certain threshold must be surpassed in the L2 for the learner in order to become proficient in reading in the L2. Their study showed that L2 reading improves when a threshold has been met or exceeded. Carrell (1991) also conducted a study on the effects of both first language reading ability and second language proficiency on students' second language reading ability. She concluded

that it is possible that second language proficiency is a more important predictor of second language reading comprehension until a certain level of proficiency is attained, after which first language literacy becomes a more important predictor of comprehension. Mehrpour's (2004) findings also lend support to this research finding. In his study, he found a relatively high correlation between second language proficiency and L2 reading comprehension ( $r = .60$ ) suggesting that the higher the students' second language proficiency, the higher their L2 reading comprehension performance would be. Other studies by Clark (1979), Allen et al. (1988), Mosallae-pour (1997), and Yamashita (1999) confirm this matter. It is most likely that the performance of the students in the present study was mainly influenced by their low second language proficiency.

Another point which can be mentioned in this regard is that in teaching reading comprehension to the students in the schools or universities of Iran, according to Mehrpour (2004), the focus is on aiding students to master the content of the reading comprehension passages and no attention is paid to the teaching of reading strategies in order to help students comprehend the reading texts. In fact, in such a situation reading comprehension is taught through traditional method of translating the texts into Persian. As interviews with the students in the present study and the findings regarding strategy use revealed, the majority of the students were neither familiar with nor accustomed to employing the strategies in L2 reading activities. In fact, the present study was a very new experience for the students participating in it. Furthermore, lack of familiarity with the reading strategies in L1 reading activities was also revealed through interviews. Therefore, it can be concluded that the students' low performance in L2 reading in the present study might stem either from low second language proficiency or from lack of familiarity with the reading strategies in L1.

One last justification is based on the mean differences of the experimental group and the control group on the reading comprehension pre-test. In fact, as shown in Table 1 above, although the difference between the two means is not statistically significant, there is a difference

of about 2 points between them (experimental group mean = 13.26 and control group mean = 15.16). This initial difference might have been one of the basic factors not allowing the students in the experimental group to be able to significantly outperform those of the control group even after receiving instruction.

#### **6.4** *How is the effectiveness of the strategy instruction related to students' reading ability?*

The results of the analysis of variance shown in Table 6 revealed no significant difference among the three reading ability groups suggesting that all members of the experimental group including low, intermediate and high reading ability students benefited similarly from the strategy instruction. In other words, reading strategy instruction influenced the reading habits of all participants in the experimental group similarly. One point which needs to be added here is that according to the literature, the results of so many studies have revealed that reading comprehension strategy instruction has the capability to help learners become purposeful, and active learners who are in control of their own reading comprehension. However, such instruction must be long term, for there is much to teach and much for young learners to practice. Even so, there is little doubt that instruction is able to develop reading skill (cf. Connor, et.al., 2004; Pani, 2003; Salataci and Akyel, 2002; Khosravi, 2000, and Ayaduray and Jacobst, 1997). However, based on the findings of the mentioned studies, the fact which should be taken into account is that strategy instruction will improve learners' reading ability in case of implementing a long-term program. It is most probable that lack of a considerable change in the students' reading performance in the present study might be attributed to the short period of the instruction (15 sessions only). As Gaskins (1994) claims, if strategies are not taught and explained directly and if they are not modelled by teachers for a long period of time, they would have a short-term impact on the students and would not effectively help them develop as strategic readers. It is most likely that instruction could have shown a more positive effect in the long run.

### 7. Conclusion and Implications

Based on the limited data generated from and analyzed in this study, one cannot make big claims regarding the generalizability of the findings. The results show that reading strategy instruction can lead to the use of an extended range of reading strategies by the learner readers. Other factors such as the nature of the texts as well as problems in self-report data may intervene. However, the results pointed to the fact that learners' awareness of strategies and their ability to use them while reading did increase. The findings of this study offer several pedagogical implications for teaching reading comprehension in EFL contexts.

1. Consciousness-raising can play an important role in teaching reading comprehension strategies as the findings suggest. Therefore, teachers can implement this technique in the process of teaching reading and help the learners make significant improvements.
2. Readers with various reading abilities among general and lower level language proficiency students in particular, according to the results of the interviews, might benefit from an instructional procedure where they learn to monitor their comprehension and use the various strategies with the help of a teacher who models the steps of the instructional process, and where they discuss their strategies while reading the text.
3. The results of this study point to the need to teach reading in L2 by changing the focus, material, method, and attitude based on the readers' L2 proficiency level. In doing so, we should teach beginning L2 learners in a way that they can acquire the language proficiency in order to develop their L2 reading comprehension. This might be carried out through texts carefully chosen to support the development of language proficiency.
4. Regarding the advantages of reading strategy instruction, though the results of the present study indicated marginal effects of reading strategy instruction on learners' reading comprehension ability, it seems necessary for teachers to be trained in strategy instruction and assessment. They should actually receive direct instruction on how to teach strategies inside their classrooms. In addition, Cohen, Weaver, and Li (1998)

advise teachers to systematically introduce and reinforce learning strategies that help the students to use the target language more effectively and thus improve their performance and help them develop as strategic and independent readers.

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