

## **On the Relationship between Metacognitive Reading Strategies, Reading Self-Efficacy, and L2 Reading Comprehension\***

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### **Abstract**

The present study was conducted to investigate the relationship between metacognitive reading strategies, reading self-efficacy, and reading comprehension of Iranian EFL learners. The participants were 119 Iranian B.A and M.A students majoring in English at Imam Khomeini International University and Islamshahr Azad University. A Michigan Test of English language Proficiency was given to the participants to determine their language proficiency and reading comprehension. Then, they were asked to respond to the two questionnaires of MARS (Metacognitive Awareness of Reading Strategies Inventory), and RSEQ (Reading Self-Efficacy Questionnaire). To analyze the data, multiple regression analyses and correlation procedures were used. The results revealed a significant relationship between the use of reading strategies and reading comprehension. Also, a significant relationship was found between the use of reading strategies and reading self-efficacy. Moreover, the findings showed a positive relationship between reading self-efficacy and reading comprehension of Iranian EFL learners. The results of this study may have implications for teachers, learners, and materials developers.

**Key words:** metacognitive reading strategies, reading self-efficacy, reading comprehension

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### **Introduction**

Reading plays an important role in getting information from original sources. Reading is not a passive process of obtaining meaning from the text; rather, it is a complex cognitive process in which readers should take active control of their comprehension processes (Soleimani & Hajghani, 2013). According to Zainol Abidin (2012), EFL and ESL students need to acquire abilities to read academic texts. Reading strategy instruction helps learners to enhance reading ability (Sung, Chang, & Haung, 2008). Skilled readers know how to use effective strategies to function better in constructing meaning from text, but poor readers have problem in using reading strategies (Lau & Chan, 2003). Reading strategies are of interest in teaching programs, because they show readers how to interact with the text and how to use strategies to comprehend the text effectively (Anastasion & Griva, 2009). Afflerbach, Pearson, and Paris (2008) define reading strategies as deliberate and goal-oriented processes which enable learners to construct meanings out of text.

Mokhtari and Reichard (2002) classify reading strategies into three broad categories: (a) global reading strategies, defined as generalized reading strategies used in setting the stage for the reading act (e.g., setting purpose for reading, predicting what the text is about, using text structure, etc.); (b) problem-solving reading strategies, which are considered as localized strategies used for solving problems when problems develop in understanding the text (e.g., rereading, visualizing information read, reading text out loud, etc.); and (c) support reading strategies, which provide support mechanisms in sustaining responses to reading (e.g., use of reference materials, taking notes, etc.).

At the same time, one way of affecting learning is increasing learners' self-efficacy. Self-efficacy refers to "People's judgments of their capabilities to organize and execute courses of action required to attain designated types of performance" (Bandura, 1986, p. 391). Learners' self-efficacy helps them to choose tasks which suit their abilities. Perceived self-efficacy affects the way people choose

activities and how much effort they expend to deal with tasks (Bandura & Adams, 1977).

The importance of the above variables coupled with the importance of developing a clearer understanding of the nature of the relationships between such variables as well as the effect they might have on EFL learners' reading comprehension signify the need for this and other similar studies. In recent years, a number of studies have been conducted to investigate the effects of metacognitive reading strategies, and reading self-efficacy on reading comprehension (Anastasiou & Griva, 2009; Keskin, 2014; Li & Wang, 2010; Mahmoudi, 2014; Naseri & Zaferanieh, 2012; Shang, 2010). However, there seems to be a paucity of research on the relationships among these variables. Therefore, the present study aims to explore the relationship between these variables and their effects on reading comprehension.

### **Literature Review**

#### **Reading comprehension**

In the field of teaching English as a foreign language, reading is a valuable skill, because the ability to read and make sense of a text is regarded essential for students' comprehension progress (Khoshsima & Rezaeian Tiyar, 2014). Rivers (1981) believes that reading is a pleasurable activity for obtaining information and extending readers' knowledge about language. Reading is a kind of problem-solving activity which requires effort, planning, self-monitoring, and the use of strategies (Rastakhiz & Roudgar Safari, 2014).

Anderson (2004) defines reading as a combination of four factors: the text, the readers, fluency, and strategies. He argues that reading is a process in which readers combine their background knowledge with the text to build meaning. A number of factors may affect learners' reading achievement. The focus of the present study is on three factors including metacognitive reading strategies, self-regulated learning strategies, and self-efficacy.

### **Reading Strategies**

In the context of reading, reading strategies are defined as deliberate and goal-oriented processes which enable learners to construct meanings out of text (Afflerbach, Pearson, & Paris, 2008). Li (2010) refers to reading strategies as deliberate plans and skills with mental and behavioral characteristics which readers employ consciously to comprehend a text.

Reading strategies help learners to manage their reading process. According to Sheorey and Mokhtari (2001), high proficient students use significantly more strategies in reading than low proficient students. Good readers use sophisticated strategies such as summarization, monitoring, and identifying the main idea to comprehend a text better. However, poor readers are only able to use simple strategies such as deleting unimportant sentences, and understanding surface information in text (Lau & Chan, 2003). Therefore, more strategy training is needed for improving reading abilities of poor readers.

Although reading strategy instruction is an effective way of enhancing reading abilities, there should be a proper environment for teachers to create better conditions for implementing strategies in the classroom, and to provide opportunities for students to apply reading strategies outside the classroom (Sung, Chang, & Huang, 2008). In addition, the effectiveness of strategy instruction is related to differences in the learning styles of students (Carrell, Pharis, & Liberto, 1989). Therefore, different students with different learning styles learn strategies differently.

Sheorey and Mokhtari (2001) classify reading strategies into three categories including metacognitive, cognitive, and support reading strategies. Metacognitive reading strategies are those deliberate and planned techniques that readers employ to monitor and enhance their reading. They include planning, previewing the text, having a purpose in mind, self-monitoring, etc. Cognitive reading strategies are more limited to the specific reading tasks. They are localized and focused actions employed for solving problems when understanding the text becomes difficult. These strategies include guessing the meaning of

unknown words from context, rereading the text for enhancing comprehension, etc. Support reading strategies are support mechanisms used by readers to provide responses to reading problems, such as using dictionaries and reference materials, taking notes, underlining or highlighting the text, etc.

Mokhtari and Reichard (2002) further classify metacognitive reading strategies into three subcategories: global, problem-solving and support reading strategies. Global reading strategies are intentional and carefully planned techniques used by learners to set the stage for the reading act. Typical examples of these strategies are having a purpose in mind for reading, making prediction about the text, and using text structure. Problem-solving reading strategies refer to localized and focused actions and skills that readers employ when problems arise in the comprehension of the text. Readers use these strategies while working directly with the text, especially when the text becomes difficult. Some examples of problem-solving strategies are rereading to increase comprehension, reading the text out loud, adjusting one's reading rate, and visualizing the information read. Support reading strategies are what readers use to aid their comprehension. In fact, they are support and functional mechanisms which provide responses to reading problems. Some examples of these kinds of strategies include using reference materials such as dictionaries, taking notes, and highlighting textual information.

### **Reading self-efficacy**

An important factor which affects learning achievement is perceived self-efficacy. The concept of self-efficacy was first introduced by Bandura (1977). He believes that people's sense of self-efficacy affects their motivation, behavior, and actions (1982). Bandura (1986) defines self-efficacy as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391).

According to Bandura (1999), self-efficacy is a key component in social cognitive theory. Social cognitive theory introduces the triadic reciprocal determinism model. Based on this model, human behavior is

shaped and controlled by behavioral, cognitive, and environmental factors (Bandura, 1989). Bandura asserts that there is a bidirectional interaction between cognition, behaviors and environmental factors, in which the reciprocal influence of these factors is not of equal strength. In social cognitive theory, environmental structures include three forms of imposed environment, selected environment, and constructed environment (Bandura, 1999).

Self-Efficacy beliefs are multidimensional forms, which differ on the basis of the domain functioning, and can be measured on the dimensions of magnitude (dependence on the level of difficulty of the particular task), generality (transferability of self-efficacy belief across activities), and strength (amounts of ones' certainty about the performance on a particular task)(Bandura, 1977; Zimmerman, 2000). Similarly, Zimmerman (2000) states that self-efficacy beliefs differ from closely related constructs, such as outcome expectations, self-concept, and perceived control.

Perceived self-efficacy is concerned with how people judge their capabilities in the production of appropriate actions in difficult situations (Bandura, 1982). Bandura and Adams (1977) claim that perceived self-efficacy has directive influence on the choice of activities and settings, and it also determines how much effort people will put into dealing with problems. They maintain that efficacious individuals eradicate their inhibitions through successful experience of doing threatening activities, but those who avoid threatening activities sustain their defensive behaviors.

Moreover, self-efficacy beliefs affect students emotionally by reducing their anxiety (Bandura, 1977). A high sense of self-efficacy reduces learners' stress and helps them to cope with threatening situations. In contrast, learners with a low sense of self-efficacy cannot control their stress in the face of obstacles and worry about possible threats, so their performance will be undermined (Bandura, 1999). Learners who have a high sense of efficacy approach difficult lessons with more cognitive effort, but when the lessons are easy, they make less cognitive effort (Bandura, 1982).

Shell, Colvin, and Bruning (1995) note that self-efficacy beliefs affect learners' achievement in reading and writing by influencing their motivation. In addition, self-efficacy beliefs are vital forces in learners' success or failure, because they affect learners' performance through influencing their choice, effort, thought patterns, and emotional reactions (Pajares, 2003).

Many studies have been conducted to explore the relationship between metacognitive reading strategies, reading self-efficacy, and reading comprehension. Anastasiou and Griva (2009) carried out a study which had three purposes: to explore students' awareness of reading strategies, to identify possible differences between poor and good readers, and to investigate the relationship between reading strategy awareness and reading comprehension. The sample of the study consisted of 18 poor readers and 18 good readers, aged between 11 and 12. Both groups utilized a variety of cognitive strategies, but poor readers were less aware of the more sophisticated cognitive strategies in comparison with good readers. In addition, both cognitive and metacognitive strategy awareness made a unique contribution to reading comprehension, reading accuracy and reading speed.

Karbalaei (2010) investigated the metacognitive reading strategies used by EFL and ESL learners. 190 undergraduate students (96 Iranians and 93 Indians) were selected to answer the Metacognitive Awareness of Reading Strategies Inventory (MARSI) and a reading comprehension test. Both groups reported a similar pattern of strategy awareness. However, Indians reported using most types of strategies more often than Iranians. Indians were more interested in using top-down strategies while Iranians were more focused on using bottom-up strategies. Furthermore, it was concluded that including metacognitive reading strategy instruction within reading curricula in both countries may play a vital role in enriching students' awareness of the mental processes involved in reading processes.

Vaez Dalili and Tavakoli (2013) compared two groups of EFL students of humanities and engineering in terms of their metacognitive awareness and use of certain reading strategies. 70 lower-intermediate

students (35 engineering students and 35 students of humanities) were chosen to respond to the Metacognitive Awareness of Reading Strategies Inventory (Mokhtari & Reichard, 2002) in order for the researchers to measure their metacognitive awareness of ESP reading strategies. The results showed that the two groups reported strikingly similar patterns of reading strategy awareness, and confirmed having used almost all of the strategies while reading ESP materials. However, the engineering students reported using certain types of reading strategies (including paraphrasing for better understanding, re-reading for better understanding, trying to stay focused on reading, summarizing text information, using reference materials, and discussing reading with others) more frequently than did the humanities students.

To explore the level of metacognitive awareness of reading strategies among university students, Mahmoudi (2014) conducted a study with 115 EFL students. The MARSII was used to measure the participants' level of strategy use. The results showed that while all the participants reported medium use of strategies overall, there were some differences in the reported use of each subscale of the inventory. The problem-solving reading strategies were found to be used more than global and support reading strategies.

Amer, Al Barwani, and Ibrahim (2010) conducted a study to investigate the online reading strategies of Omani EFL student teachers. A sample of 123 first-year student teachers and 97 fourth-year student teachers answered the Online Survey of Reading Strategies. This survey classified reading strategies into three categories: global, problem-solving, and support strategies. The findings indicated that high proficient students used significantly more global strategies; in contrast, low proficient students used less global strategies and used more support and problem-solving strategies. However, there was no significant difference between males and females in either group in the overall use of strategies as well as in the three categories.

Rastakhiz and Roudgar Safari (2014) investigated the relationship between global reading strategies and support reading strategies and



Iranian Intermediate level EFL learners' reading comprehension ability. To do so, 100 learners were homogenized using a Preliminary English Test (PET) test, and 40 learners were selected at the intermediate level in two intact classes. The Survey of Reading Strategies (SORS) was administered. The results indicated that EFL learners use support reading strategies more than global reading strategies.

In another study, Li and Wang (2010) integrated reading self-efficacy with reading strategies, and explored the relationship between reading self-efficacy and the use of reading strategies. 180 Chinese students completed the Reading Self-Efficacy and Reading Strategies Questionnaires. The results of MANOVA analysis showed a positive relationship between reading self-efficacy and the use of reading strategies in that highly self-efficacious readers used reading strategies more than those with low self-efficacy. In addition, the participants used metacognitive reading strategies more frequently than other sub-categories of reading strategies.

Shang (2010) investigated the relationship between the use of three types of reading strategies (cognitive, metacognitive, compensation strategies), reading self-efficacy, and English reading comprehension with 53 Taiwanese learners. The results indicated that the most frequently used reading strategies were metacognitive strategies, followed by compensation and cognitive strategies. In addition, there was a significant positive relationship between the use of reading strategies and perceptions of self-efficacy. However, reading strategies had no significant effect on the reading achievement of the learners in the Taiwanese context.

To investigate the relationships among reading self-efficacy beliefs, reading strategies use and reading comprehension level of Iranian EFL learners, Naseri and Zaferanieh (2012) carried out a study with 80 EFL students. The sample answered the Michigan reading comprehension test, a self-reported Reading Strategy Use Questionnaire, and a Reading Self-efficacy Questionnaire. The results showed significant positive correlations between reading self-efficacy beliefs and reading

comprehension and also between reading self-efficacy beliefs and reading strategies use.

Keskin (2014) carried out a study to explore the correlations among metacognitive reading strategies, reading self-efficacy, and reading task value. A sample of 370 students completed the MARS and the Motivations for Reading Questionnaire. The results suggested that awareness and use of metacognitive strategies in reading were positive predictors of reading self-efficacy and that reading self-efficacy was a significant predictor of reading task value.

In another study, Salehi and Khalaji (2014) investigated the relationship between Iranian EFL learners' self-efficacy and reading comprehension performance. A sample of 48 learners was selected to answer Longman reading comprehension tests, and Reading Self-efficacy Questionnaire. The results indicated a positive relationship between reading self-efficacy beliefs and reading comprehension of Iranian EFL learners.

Alimoradi, Jahandar, and Khodabandehlou (2013) examined the impact of self-efficacy on Iranian EFL learner's reading comprehension ability at pre-intermediate level. 120 learners were selected and assigned into experimental and control groups. Both groups were pretested using a reading comprehension test. The experimental group received self-efficacy treatment. Results suggested that self-efficacy had a positive effect on Iranian EFL learner's reading comprehension ability at pre-intermediate level. In addition, the findings suggested no significant difference between male and female learners regarding the effect of self-efficacy on the reading comprehension ability.

Solheim (2011) studied the impact of reading self-efficacy and task value on reading comprehension scores of Norwegian primary school students. To conduct the study, a sample of 217 fifth graders aged 10–11 was selected. Results of Multiple Regression Analysis revealed that reading self-efficacy was a significant positive predictor of reading comprehension scores. In addition, differences in reading comprehension scores between students with high and low reading self-

efficacy were greater in multiple-choice reading comprehension than in constructed-response reading comprehension.

To conclude, although many studies have been done to explore the effects of metacognitive reading strategies and reading self-efficacy on reading comprehension, few have dealt with the direct relationships among them. Therefore, the present study is aimed at examining the relationships among these variables and their effects on reading comprehension. It attempts to answer the following research questions:

1. Are there any significant differences among metacognitive reading strategies as predictors of reading comprehension?
2. Are there any significant differences among metacognitive reading strategies as predictors of reading self-efficacy?
3. Is there a significant relationship between reading comprehension and reading self-efficacy?

## Method

### Participants

The participants of the present study included 160 male and female Iranian B.A. and M.A. students majoring in Teaching English as a Foreign Language, and English Translation at Imam Khomeini International University and Islamshahr Azad University. All of the participants were native speakers of Persian. The Michigan Test of English Language Proficiency (MTELP) was administered to homogenize the participants in terms of their level of English language proficiency. After the administration of the Michigan and taking the results into account, the number of participants was reduced to 119. 41 participants were excluded from the study because they had a different level of proficiency.

### Instruments

To collect data for the present study, the following instruments were utilized:

**Michigan Test of English Language Proficiency (MTELP)**

To homogenize the participants, MTELP was administered. MTELP is one of the popular tests for measuring ESL or EFL learners' level of language proficiency. It includes 100 items in multiple choice format containing 40 grammar items, 40 vocabulary items and reading passages followed by 20 comprehension questions. Also, to measure the reading comprehension of the sample, the reading comprehension part of the MTELP, which contains 20 reading comprehension items in multiple-choice format, was used. It includes four reading comprehension passages each followed by five questions.

**Metacognitive Awareness of Reading Strategies Inventory (MARS)**

In this study, students' reading strategy use was checked using the MARS Questionnaire, which was validated by Mokhtari and Reichard (2002), using a large sample representing students with equivalent reading abilities ranging from middle school to college. It included 30 items consisting of three subcategories: Global Reading Strategies (12 items), Problem Solving Strategies (9 items), and Support Strategies (9 items). All the participants were asked to read the statements and write the number which best indicated their perceived use of the strategies described in the statement using a Likert type scale ranging from 1 (= I never or almost never do this) to 5 (= I always or almost always do this). To estimate the reliability of the questionnaire in the context of this study, Cronbach's alpha was checked, which turned out to be 0.71.

**Reading Self-Efficacy Questionnaire**

Reading Self-Efficacy Questionnaire (RSEQ), which was adapted from Ghezlou, Kordi, and Nasri (2014), was constructed based on Li and Wang's (2010) Reading Self-Efficacy Questionnaire, Ghonsooly and Elahi's (2010) EFL Learners' Self-efficacy in Reading Comprehension, and Horwitz's (1988) Beliefs about Language Learning (BALL) Reading Strategies Questionnaire. RSEQ contained 16 Likert-scale items ranging from (1=strongly disagree) to (5=strongly agree). The participants were required to read the items and decide on the extent to which they agreed with each statement. To estimate the reliability of

the questionnaire in the context of this study, Cronbach's alpha was checked, which turned out to be 0.79.

### **Procedure**

To conduct the present study, the following procedure was followed:

First, 160 participants majoring in English translation and English teaching at Imam Khomeini International University and Islamshahr Azad University were selected. Then, the MTELP was administered to make sure that there was no significant difference among learners in terms of their proficiency level. The participants were allotted 60 minutes to answer the test.

To homogenize the participants, their scores on MTELP were summarized, and the mean and standard deviation were computed. The scores of those who had scored more than one standard deviation above or below the mean were excluded from all subsequent analyses. Also, the reading comprehension of the participants was checked using the Reading Comprehension section of the MTELP. As a result, the number of participants was reduced to 119.

In the next stage, the participants were asked to respond to the MARSI, and RSEQ questionnaires. The participants had 45 minutes to answer the questionnaires. The collected data were then summarized and submitted to statistical analysis.

### **Data Analysis**

To analyze the collected data and to answer the research questions, multiple regression analyses and correlation procedures were used. Multiple regression analysis was used to see which types of reading strategies and self-regulated learning strategies were better predictors of reading comprehension and reading self-efficacy. In order to find out the relationship between reading comprehension and reading self-efficacy of the participants, Pearson Correlation procedure was utilized. The significance level of analyses was set at  $p \leq 0.5$ .

## Results and discussion

### Investigation of the first research question

The first research question sought to investigate which types of reading strategies are predictors of reading comprehension. To answer this question, a stepwise multiple regression was used (Table 1) which showed that global and problem-solving strategies were the predictors of reading comprehension. Support strategies did not contribute to the regression model.

**Table 1** Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	Global	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Problem-solving	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: reading comprehension

Based on the model summary (Table 2), it can be seen that global reading strategies and reading comprehension share over 23% of the variance. Global and problem-solving strategies together share just above 25% of the variance with reading comprehension. In other words, global and problem-solving strategies explain 25% of the total variance in reading comprehension.

**Table 2** Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.490 <sup>a</sup>	.240	.233	8.23932
2	.514 <sup>b</sup>	.265	.252	8.13747

a. Predictors: (Constant), global

b. Predictors: (Constant), global, problem-solving

c. Dependent Variable: reading comprehension

The result of the ANOVA (Table 3) indicates that both F-values are statistically significant ( $F_{(1,117)} = 36.86$ ,  $p < .05$ ;  $F_{(2,116)} = 20.87$ ,  $p < .05$ ). The results show that the predictive power of both models is significant.

**Table 3** ANOVA<sup>a</sup> on reading comprehension

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2502.875	1	2502.875	36.869	.000 <sup>b</sup>
	Residual	7942.713	117	67.886		
	Total	10445.588	118			
2	Regression	2764.247	2	1382.124	20.872	.000 <sup>c</sup>
	Residual	7681.341	116	66.218		
	Total	10445.588	118			

a. Dependent Variable: reading comprehension

b. Predictors: (Constant), global

c. Predictors: (Constant), global, problem-solving

To find out how strong the relationship between reading comprehension and each of the predictors is, the standardized coefficients and the significance of the observed t-value for each predictor were checked. Table 4 shows the results. Based on Table 4, global and problem-solving strategies both account for a statistically significant portion of the variance in reading comprehension. The first model indicates that for every one standard deviation change in global reading strategies score, there will be .49 of a standard deviation change in reading comprehension score. The second model shows that when global and problem-solving strategies are taken together, for every one standard deviation change in global and problem-solving score, there will be .36 and .20 of a standard deviation change in reading comprehension score, respectively.

**Table 4** *Coefficients<sup>a</sup> of reading strategies*

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.696	4.308		-.858	.393
	Global	.798	.131	.490	6.072	.000
2	(Constant)	-8.227	4.828		-1.704	.091
	Global	.599	.164	.367	3.655	.000
	Problem-solving	.320	.161	.200	1.987	.049

a. Dependent Variable: reading comprehension

It can be concluded that two types of reading strategies including global and problem-solving strategies are predictors of reading comprehension.

### Investigation of the second research question

The second research question of the present study aimed to find out which types of reading strategies are predictors of reading self-efficacy. To answer this question, another multiple regression procedure was used. The result of the stepwise multiple regression is presented in Table 5. It shows that from among the three types of reading strategies, global strategies were the only predictor of reading self-efficacy. The other types of strategies did not contribute to the self-efficacy score.

**Table 5** *Variables Entered/Removed<sup>a</sup>*

Model	Variables Entered	Variables Removed	Method
1	Global	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: self-efficacy

The result of the model summary (Table 6) indicates that global reading strategies share .24% of the variance with reading self-efficacy.

**Table 6** *Model Summary<sup>b</sup>*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.505 <sup>a</sup>	.255	.249	5.08046

a. Predictors: (Constant), global

b. Dependent Variable: self-efficacy



The result of the ANOVA, presented in Table 7, shows that the predictive power of the model is significant.

**Table 7** ANOVA<sup>a</sup> on reading self-efficacy

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	1034.358	1	1034.358	40.074	.000 <sup>b</sup>
Residual	3019.891	117	25.811		
Total	4054.250	118			

a. Dependent Variable: self-efficacy

b. Predictors: (Constant), global

**Table 8** Coefficients<sup>a</sup> of reading strategies

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.110	2.657		6.064	.000
	Global	.513	.081	.505	6.330	.000

a. Dependent Variable: self-efficacy

Table 8 contains the unstandardized as well as standardized coefficients of the model, along with the observed t-values and the significance levels. The model shows that for every one standard deviation change in global reading strategies score, there will be .50 of a standard deviation change in self-efficacy score. The results indicate that global reading strategies are the best predictor of reading self-efficacy.

### Investigation of the third research question

The third research question sought to investigate the relationship between EFL learners' reading comprehension and their reading self-efficacy. To answer this question, a correlation procedure was used. Table 9 shows the results of the correlation procedure for reading comprehension and reading self-efficacy.

**Table 9** *Correlation between reading comprehension and reading self-efficacy*

		Reading comprehension	self-efficacy
Reading comprehension	Pearson Correlation	1	.421**
	Sig. (2-tailed)		.000
	N	119	119

\*\* . Correlation is significant at the 0.01 level (2-tailed)

As Table 9 shows, there is a significant relationship between reading comprehension and reading self-efficacy of EFL learners ( $r = .42, p < 0.01$ ).

### Discussion

The present study investigated the relationship between reading strategies, reading self-efficacy, and reading comprehension. One of the findings of the present study was that global and problem-solving strategies were predictors of reading comprehension. In the present study, metacognitive reading strategies were classified into three sub-categories of global, problem-solving, and support reading strategies. The participants employed more global and problem-solving strategies in their reading compared to support strategies. This result is in line with that of Mokhtari and Reichard (2002), who argue that highly skilled readers use global and problem-solving strategies more frequently than less skilled readers. This finding also partially supports Amer, Al Barwani, and Ibrahim's (2010) findings that high proficient readers use more global strategies. Furthermore, the findings of the present study partially confirm those of Mahmoudi (2014), who reported that problem-solving strategies were used more than global and support reading strategies. On the other hand, the results of the present study are different from those of Rastakhiz and Roudgar Safari (2014), who found that EFL learners use support reading strategies more than global reading strategies.

Another finding of the present study was that from among three types of reading strategies, global reading strategies were the only predictor of reading self-efficacy. Highly self-efficacious participants used global reading strategies more than other categories of reading

strategies. This result lends support to those of Keskin (2014), who found that the use of metacognitive reading strategies was a positive predictor of reading self-efficacy. Furthermore, the finding is partially in accordance with the findings of Li and Wang (2010), Shang (2010), and Naseri and Zaferanieh (2012), who reported a significant positive correlation between reading self-efficacy and reading strategies use.

Another finding of this study was that there is a significant relationship between reading comprehension and reading self-efficacy of EFL learners. This finding lends support to that of Salehi and Khalaji (2014), who found a positive relationship between reading self-efficacy and reading comprehension. Furthermore, this finding corroborates those of Alimoradi, Jahandar, and Khodabandehlou (2013). They showed that self-efficacy had a positive effect on the reading comprehension ability of the learners. It also supports those of Solheim (2011), who reported that reading self-efficacy was a significant positive predictor of reading comprehension score. In addition, this result is in line with one of the findings of Naseri and Zaferanieh (2012), based on which there was a significant positive correlation between reading self-efficacy beliefs and reading comprehension.

A number of factors might have contributed to the results obtained in this study. This study was conducted with a small sample size of participants (119). A small sample might be one reason for differences between the results of the present study and those of other studies. Another reason may be the Iranian socio-cultural context in which students are used to following teachers' instructions and where classes are predominantly teacher-centered.

The other possible reason could be the participants' level of proficiency. The participants were all at intermediate proficiency level. Therefore, their perceptions of their self-efficacy might have been influenced by their proficiency. At the same time, they were not so much aware of the use of strategies.

Gender differences may be considered as another factor contributing to such differences in the findings. In the present study,

gender differences were not taken into account. However, studies such as Ghezlou, Kordi, Nasri Nasrabady (2014) have suggested that gender may have significant effect on the reading self-efficacy and the use of reading strategies.

Furthermore, the level of self-confidence and opportunities to use the target language in real environments can be addressed as other possible factors which may have brought about such findings. Iranian students have little (if any) opportunity to speak with native speakers of English. Therefore, these factors influence the students' self-efficacy and the choice of reading strategies.

### **Conclusion**

The present study was set out to investigate the relationship between metacognitive reading strategies, reading self-efficacy, and reading comprehension. Based on the findings of the first research question, global and problem-solving strategies were predictors of reading comprehension. Good readers employed more global strategies (e.g. having a purpose in mind, making prediction about the text, and using text structure) and problem-solving strategies (e.g. rereading, reading text out loud, and visualizing the information). Therefore, it may be concluded teachers can employ instructional techniques which may increase learners' understanding of strategies that have direct effect on reading comprehension. In addition, teachers can provide learners with activities which encourage them to use more strategies in their reading.

The results of the second question indicated that from among the three types of reading strategies, global strategies contribute to predicting reading self-efficacy. This means that using global strategies helps learners to increase their self-efficacy while reading. From this, it can be concluded that learners need to be encourage to make more frequent use of global strategies to improve their reading self-efficacy, which may in turn, improve their reading comprehension.

Finally, the finding of the third research question showed a significant relationship between reading self-efficacy and reading comprehension. Learners with a high sense of self-efficacy

comprehended the text better than learners with a low sense of self-efficacy. Therefore, teachers can provide learners with activities and strategies which increase learners' self-efficacy.

To sum up, the findings showed that metacognitive reading strategies can be predictors of reading self-efficacy and reading comprehension of Iranian EFL learners. Furthermore, the findings suggested that there is a significant relationship between learners' reading self-efficacy and their reading comprehension. Therefore, teachers and materials developers can employ instructions which increase learners' self-efficacy and encourage them to use more strategies in their reading.



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