

The Impact of Self-Regulated Strategies on Iranian EFL Learners' Reading Comprehension Skill

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ABSTRACT

Reading is an essential skill and probably the most important skill for second or foreign language learners (Grabe, 1991). It is an interactive and complex process influenced by linguistic and cognitive, social and cultural, and affective and motivational factors (Lu, 1989). To empower this skill, EFL learners can make use of self-regulated learning strategies which are good predictors of EFL learners' attainment. The present study attempted to investigate the impact of self-regulated strategies on promoting Iranian intermediate EFL learners' reading comprehension skill. To this aim, 72 Iranian EFL learners from four intact classes in an English language school in Ahvaz took part in the study. Two classes were randomly selected to form the experimental group and the other two classes were randomly chosen as the control group. To check their reading proficiency, all 72 EFL learners took a TOEFL reading test with a reliability coefficient of 0.86. Subsequent to that, the experimental group received instruction on SRL strategies to promote their reading comprehension skills and the control group just followed a non-SRL type of instruction on their reading comprehension skill. All of the participants were male EFL learners whose ages varied from 24 to 37. All participants came to their reading class twice a week for three months. The results of the posttest revealed that the participants of the experimental group outperformed their counterparts in the control group. Therefore, it should be pointed out that self-regulated strategies had a significant impact on Iranian intermediate EFL learners' reading comprehension skill. This study recommends the use of self-regulated learning strategies in teaching English textbooks in Iran's Educational system.

KEYWORDS: Metacognition, Self-Regulated Learning, Self-Regulated Strategy, Self-Evaluation, Self-Monitoring, Goal-Setting, Reading Comprehension Skill.

INTRODUCTION

Reading comprehension has always been quite important for both language learners and teachers. Technically speaking, reading is a process which encompasses activating relevant knowledge and related language skills to accomplish an exchange of information from an individual to another (Chastain, 1988). To promote the reading comprehension skills, language learners can make frequent use of learning strategies such as metacognitive ones. Through the application of metacognitive strategies in reading comprehension, language learners would be able to monitor their understanding of the text and also to evaluate the degree of their understanding. Thus, the role of strategies for reading comprehension needs to be taken into fastidious consideration and the importance of strategies must be clarified to language learners at all levels (Zimmerman, 2000, 2001). Thus, to achieve reading proficiency, language learners are required to set their learning goals, make learning plans, choose learning strategies, monitor learning processes, and evaluate their learning outcomes. To illuminate the point, they need to become self-regulated learners. Moreover, language teachers can be of great contribution to help their students develop an awareness of learning strategies and enable them to use a wider range of appropriate strategies which can be in close connection with reading comprehension skills (Zimmerman & Campillio, 2003).

SELF-REGULATED LEARNING

Self-Regulated Learning (SRL) is as an active, constructive process through which learners set goals for their learning and they try to monitor, regulate, and control their cognition, motivation, and behavior which are then guided and constrained by their goals and contextual features of the environment (Pintrich, 2000). Zimmerman (2000) defined it as the degree to which students are motivated, use metacognitive strategies, and become behaviorally active in their learning process and in accomplishing their goals. Wolters, Pintrich, and Karabenick, (2003) pointed out that self-regulation concerns monitoring, management, and control of cognition, motivation, and behavior in order to achieve

self-set goals. As regards reading comprehension skill, it should be pointed out that it is a multi-factor, complex process which involves word recognition and comprehension. As reading is a meaning constructing activity, readers need to utilize their linguistic, cognitive, and sociocultural resources when they interpret a written text (Delbridge, 2008). Reading requires self-regulation because it challenges language learners to coordinate multiple types of information about, say, a topic, reading tasks, what learning entails in a given subject area, and planning and managing the use of multiple strategies (Zimmerman & Campillio, 2003).

Self-regulated learners are said to set goals, create plans to reach their goals, monitor progress toward their learning goals, and reflect on the effectiveness of their process once their learning goals have been achieved. It is argued that self-regulated learners are proactive in their efforts to learn by becoming aware of their strengths and limitations as learners and monitoring their behavior to improve effectiveness. Self-regulated learners are motivated intrinsically to improve their method of learning (Zimmerman, 2002). The investigations conducted on self-regulated learning offers several process models that describe the actions which learners take to achieve their goals (e.g. Greene & Azevedo, 2007; Perry & Hutchinson, 2008). There are five fundamental assumptions about learning and regulating that are shared by all SRL models:

1. Learners are active, constructive participants in the learning process. They construct their own meanings, goals, and strategies from the information available in their internal environment (cognitive system) and the external environment (task conditions, learning context).
2. Learners are capable of monitoring, controlling, and regulating aspects of their own cognition, motivation, behavior, and context.
3. Behavioral, developmental, contextual, and individual differences can inhibit learner's ability to monitor his or her cognition, motivation, behavior, or context.
4. The learning process is one in which the learner sets goals or standards to strive for, monitors the progress toward them and adapt (regulate) cognition, motivation, behavior, and context in order to achieve these goals.
5. Self-regulatory activities are mediators between personal characteristics and contextual features, and actual performance in the learning process. Achievements and learning are influenced by the learner's self-regulation of his or her cognition and behavior, which mediates between his or her personal and the contextual (learning environment) characteristics (Zimmerman, 1990).

There are several SRL strategies that can be used to support learners' development of self-regulated learning skills: self-evaluation, organizing and transforming, goal setting and planning, keeping records and monitoring, and elaboration (Zimmerman & Martinez-Pons, 1988). Additionally, many interventions have been developed to implement instructional approaches aimed at developing students' self-regulated learning skills. Although there are differences in instructional approaches for developing self-regulated learning skills, researchers agreed that students benefit from self-regulated learning strategy instruction that includes goal setting and planning, applying appropriate strategies to learning goals, monitoring progress toward goals, and self-evaluation of one's learning process (Burchard & Swerdzewski, 2009; Cho, 2004). The comprehensive approach to teaching self-regulated learning skills supports learners' adoption of the forethought, performance, and reflection phases of the self-regulated learning process, outlined in models of self-regulated learning (Schunk & Zimmerman, 2007).

Ross (1999) developed the mnemonic learning strategy GAME plan to provide a clear reminder for students of the steps to follow in the self-regulated learning for the process. The acronym GAME stands for Goal, Action, Monitor, and Evaluate (Ross, 1999). Goal refers to the forethought phase of the SRL model that typically takes place before learning where task analysis, goal setting, and outcome expectations are set by the learner. Action or Monitor refers to the performance phase of the SRL model where learners engage in learning strategies and metacognitive monitoring of their progress toward goals. Evaluate refers to the self-evaluation phase of the SRL model in which learners reflect on outcomes in relation to their goals and make plans for adjustment as necessary. Ross' (1999) initial interest in self-regulated learning was specific to utilizing course design and enhanced technology to support student learning. The GAME plan was used to structure learning activities in the course appropriate for each stage of the plan and provides tools for student use, for example, to support student goal setting, tools provided included topic outlines, study guides, and goal checklists used to create time dependent goals identified by the individual student. Students were offered several practice tests and exercises to monitor their knowledge acquisition. Students were provided feedback regarding both right and wrong answers with prompts to ensure that the students knew where in the course material to reference accurate information. Finally, students evaluated their actions by completing an online quiz for credit and reviewing their grades.

Ross (1999) compared students' scores on the Motivated Strategies for Learning Questionnaire (MSLQ) from the beginning and end of the course, and the results indicated that students significantly increased their metacognitive self-regulation abilities, decreased their test anxiety, and increased their self-efficacy for learning and performance. No statistical data were provided, however, in this study to indicate the numerical statistical significance of these

findings. In addition, qualitative data were collected through semi-structured interviews conducted by members of the course design team to assess the effectiveness of GAME plan as a useful strategy for increasing self-regulated learning competence and supporting learning in a web-based course.

Research on self-regulated learning and strategy use has focused primarily on identifying which specific strategies contribute to students' self-regulation, differences in levels of strategy use between high- and low-achieving students, examining the relationship between learner motivation and strategy use, and analyzing the process by which students engage in self-regulation throughout a course. Overall, findings suggest that students as agents of their own learning can use effectively self-regulated learning strategies to affect positively their motivation for learning and academic success (Artino, 2009; Chang, 2007; Fadlilmula & Ozgeldi, 2010). Students' approach to self-regulated learning strategy use differs in different learning scenarios (Zimmerman, 1998). Even though there are the differences in approach, researchers have found that metacognitive learning strategies are the most effective for helping students develop self-regulated learning skill in support of student success (Arsal, 2010; Chang, 2007).

Metacognitive strategies emphasize learners' self-observation of cognitive processes and strategic actions used to support their academic success. Consistent monitoring of strategic actions taken to support learning goals supports learners' self-regulated learning skill by focusing on feedback, reflection, and adaptation, which are all attributes of the self-regulated learning process outlined in Zimmerman's model (2002) of self-regulated learning. Since Borkowski and Carr & Pressley's (1987) early research on metacognitive strategy use in children with disabilities, research indicates that students' metacognitive strategy use is an effective component in developing self-regulated learning skills in school-age children (Cleary & Zimmerman, 2004), secondary school-age students (Matuga, 2009), and adults (Arsal, 2010), within several domains such as, mathematics (Cleary & Zimmerman, 2004), Teach English as a Second Language (TESOL) (Wang, 2004), and writing (Nuckles, Hubner, & Renkl, 2009), and several learning environments: traditional classrooms (Kramarski & Michalsky, 2009), and hypermedia (Greene & Azevedo, 2007).

GOAL SETTING AND PLANNING FOR SELF-REGULATED LEARNING

Goal setting and planning for self-regulated learning as a metacognitive strategy is an essential part of the forethought phase of the self-regulated learning model (Vrugt & Oort, 2008). Goal setting and planning learning activities are often the catalyst for actions that students take to work toward achieving academic success in their courses. Previous research in the area of goal setting and planning has focused on outlining a process for developing achievable goals (Gerhardt, 2007) and specifying goals and monitoring progress. Overall findings suggest that clear goals and expectations will increase intrinsic motivation, the use of self-regulated learning strategies, and academic success (Quince, 2013). Specifically, Gerhardt (2007) found a statistically significant increase in students' overall self-regulated learning skill as a result of tutorials and guided practice using the characteristics of effective goals: specific, measurable, attainable, realistic, and time-oriented (SMART). Fleming (2002) found mixed results when examining the effectiveness of goal setting and monitoring activities on exam performance of both first-year psychology students and upper class psychology students. For first-year students, the treatment groups consistently outperformed the comparison groups on every exam. Although the upper class comparison group outperformed the upper class treatment group on the final exam.

Gerhardt (2007) examined goal setting as the key component for developing self-regulated learning in an undergraduate course including 223 students. Students participated in four short tutorials to determine the effect of targeted training in self-management strategies. Of the four tutorials, goal setting was the second and most extensive tutorial. Gerhardt (2007) collected results from a 4-item custom assess to determine self-regulated learning skills before and after the tutorials. Results indicated a statistically significant increase in self-regulated learning scores following the self-management training. One of the limitations of the Gerhardt (2007) study was the decision to use a general measure of overall skill development to measure the effectiveness of the self-regulated learning tutorials. Specifically, there were four individual tutorials and only one overall measure of effectiveness. Therefore, it is difficult to assess the individual effectiveness of the four tutorials and how the different levels of effectiveness might influence overall learning outcomes and increases in self-regulated learning skill development. Based on this decision, it is not clear what portion of the statistically significant increase in self-regulated learning skill development can be attributed solely to the goal-setting tutorial.

The second limitation of the study was the researcher's decision to only focus on the first two levels of training evaluation: reactions and learning after the training. There are two additional levels of training evaluation that were not explored in this study: learner behavior and organizational results. Adding investigation of the last two training evaluations would provide greater depth to assess the effect of the self-regulated learning tutorials and the success of students transferring and implementing the skills of self-regulated learning obtained during the tutorials. Fleming (2002) examined goal setting as a key component of self-regulated learning skill development. Fleming (2002) was interested in whether teaching metacognitive learning strategies, specifically, goal setting, and performance reporting

had positive effects on students' exam performance. Working with two sections of 65 undergraduates in introductory Psychology courses, Fleming introduced goal setting worksheets and monitoring-activity forms to one section (treatment group). Goal setting forms queried students on daily goals and intended learning activities necessary to work toward their daily goals. Students indicated the number of minutes they planned to spend on each activity and circled the box containing the strategy they planned to use.

Monitoring activity forms queried students about the actual learning activities utilized and the effectiveness of those activities on goal completion. Students in the treatment group completed both goal setting forms and monitoring activity forms consecutively for 5 days. The comparison group received standard course material without goal setting and monitoring learning strategies. Exam performance results of the two groups (treatment and comparison) from four exams taking throughout the duration of courses were compared and analyzed (Fleming, 2002). Goal setting as a metacognitive strategy for developing self-regulated learning skill is a reflective process in which students must consider goals and actions and reflect on their Self-regulated Learning (SRL) process before, after, and during the goal setting and planning process (Kitsantas, Winsler, & Huie 2008).

To investigate the significance of using goal planning and weekly monitoring and evaluation forms within an online class to promote the use of self-regulated learning strategies, Anderton (2006) hypothesized that supporting learners in focusing on the behavioral, motivational, and metacognitive aspects of their learning processes in an online class would result in higher achievement at the end of the course. Anderton (2006) also explored the relationship between students' academic achievement and their use of goal planning, weekly monitoring, and evaluation forms to promote self-regulated learning. Cennamo, Ross, and Rogers (2002) designed and developed a web-based course in human development for undergraduates. The course was designed to scaffold students' online course experience while they learned self-regulated learning skills, critical for active, self-directed, autonomous learning. Their curriculum-embedded instructional approach included developing the mnemonic learning strategy GAME plan to provide a clear reminder for students of the steps to follow in the self-regulated learning process.

SELF-REGULATED LEARNING AND LANGUAGE LEARNING

To trace the development of learning strategies, it can be asserted that due to the movements away from teacher-centered approaches to language teaching, more attention has been directed toward the individual learners' attempts as a more determining factor accounting for success in their learning. Rubin (1975) and Stern (1975) are two of the earliest researchers who advocated the learner-centered approaches to learning and emphasized the facilitative role of employing language learning strategies in enhancing the quality of students' learning. O'Malley and Chamot (1990) define learning strategies as "special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information" (p. 1). However, Schmitt (2010) believes that it is the creative effort of learners while engaged in the learning process and their self-regulatory capacity that enable us to pass judgment and consider them as good language learners with a repertoire of strategies or not.

The concept of self-regulation is in line with the idea of autonomy and autonomous learners who attempt to develop independent capacity for learning. In most of the studies conducted in domain of vocabulary learning strategies, the emphasis has been upon cognitive strategies and less attention is directed towards metacognitive and affective factors; however, self-regulated learning emphasizes the essential links between learners' motivational beliefs and the cognitive and metacognitive strategies they apply (Duckworth, Akerman, MacGregor, Salter, & Vorhaus, 2009). Self-regulation capacity is a concept which is broader than learning strategies and encompasses a variety of initiatives and actions on the part of learners. Accordingly, the present study attempts to investigate the impact of self-regulated strategies on promoting Iranian intermediate EFL learners' reading comprehension skill. It is generally believed that learner-related variables, especially the use of learning strategies, can enhance the effectiveness of students' performance on the educational tasks and can lead to success in language learning. To support this idea, Oxford (1990) is reported as stating that "learning strategies are operations employed by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (p. 8). The majority of the works conducted in the domain of learning strategies have had practical goals such as finding ways to empower and make the learners more self-directed and independent in their learning process (Tseng, Dornyei & Schmitt, 2006). Thus, it should be mentioned that internalizing a repertoire of learning strategies can facilitate the learning process and possibly lead to higher language proficiency. However, some scholars have questioned the validity of such conclusions and have pointed to the fact that the research conducted under the umbrella term of language learning strategies suffers from a number of problems which stem from either fuzziness of definitions of the terms used (e.g., diverse conceptualizations of 'learning strategies') or inherent psychometric characteristics of the assessment instruments (i.e., how to operationalize and measure the constructs) which are applied to collect the necessary data (e.g., Ellis, 2008).

Accordingly, Tseng et al (2006), based on the notion of self-regulation, have outlined and elaborated on a new approach in conceptualizing and assessing strategic learning which emphasizes “the importance of the learners’ innate self-regulatory capacity that fuels their efforts to search for and then apply personalized strategic learning mechanisms” (p. 79). In fact, because of lack of theoretical clarification about the concept and nature of language learning strategies, research on self-regulation capacity for learning has gained importance (Dornyei, 2005). The main justification for conducting research on self-regulated learning has been shedding lights on the learners’ personal initiatives, resourcefulness, persistence and sense of responsibility and the main concern is how and why the learners select and use particular strategies (Zimmerman & Schunk, 2001). As mentioned earlier, self-regulation refers to learners’ self-generated ideas and actions which are systematically directed towards achieving educational goals and require learners’ active participation in the learning process. This concept is broader in nature and encompasses learning strategies and other related micro-processes such as goal setting, strategic planning, self-motivational beliefs (self-efficacy), evaluation and self-reflection, receiving and processing feedback, and establishing a congenial environment (Zimmerman & Bandura, 1994). In order to accurately and appropriately operationalize and measure this new concept, Tseng et al. (2006) have developed a new system consisting of five facets:

1. commitment control which helps learners preserve and enhance their original goal commitment,
2. metacognitive control that assists the learners in monitoring their concentration and reducing any inhibiting factors,
3. satiation control which avoids boredom and adds interests to the task,
4. emotion control which is related to the management of emotional states or moods,
5. environment control which helps the learner control negative environmental influences.

Self-regulation is considered as an aptitude which is improvable and can be influenced by experience and instruction (Winne, 1996). The studies which have examined the relationship between the learners’ self-regulatory behavior and their achievement in various domains of learning (e.g., Kitsantas, Steen, & Huie, 2009) have found a positive relationship between these two constructs. More specifically, Magno (2011) states that academically self-regulated learners and students are “independent in their studies, diligent in listening inside the classroom, focused on doing their task inside the classroom, get high scores in tests, able to recall teacher’s instruction and facts lectured in class, and submit quality work” (p. 56). In the same vein, it is believed that “learners’ previous learning experience can have an effect on the developmental level of self-regulating capacity and the magnitude of self-regulating capacity will depend on the instigation of the initial appraisal of vocabulary learning experience, with its related motivational state” (Tseng & Schmitt, 2008, p. 362).

On the whole, successful reading comprehension depends on the effective use of such strategies as making inferences, predicting, looking for relationships, understanding meanings, rephrasing text, and monitoring (Martinez, 2011) which are regarded as self-regulated learning strategies by Byrnes (2008) and Zimmerman and Campillo (2003). Among these strategies, making inferences which is a top-down (Hudson, 1988) and a higher-level process (Grabe & Stoller, 2002) in second/foreign language reading is an important micro skill that makes second/foreign language learners efficient readers (Brown, 2001). In other words, an EFL reader should be able to identify the relations between ideas and events in the text as well as the relations between the text and his general background knowledge. It should also be noted that these relations are often not presented explicitly and must be inferred (Horiba, 1996).

Some empirical studies have targeted at inferencing in second/foreign language reading. Kern (1989) found a positive, though not significant, effect on ability to infer meaning from context after having taught reading strategies to university-level Second Language (L2) French students. Hopkins and Mackay (1997) also found that good readers were active in making inferences. Likewise, the results by Hammadou Sullivan (1991) showed that beginner students of French drew more overall inferences from the texts than more advanced readers did, and that the advanced readers who had greater familiarity with the topic of the text made fewer incorrect inferences. In a case study by Hammadou Sullivan (2002), ten advanced learners of French were found to be aware of their thought processes as well as their inferencing while reading authentic texts.

Generally, research suggests that self-regulation is correlated with higher levels of academic achievement (e.g., McClelland, Morrison, & Holmes, 2000) and facilitates reading comprehension (e.g. Collins, Dickson, Simmons, & Kameenui, 2001). In addition, self-regulatory behaviors and skills in reading include drawing inferences (Zimmerman & Campillo, 2003) and asking inferencing questions while reading (Schraw, 1997). Nevertheless, only a few researchers have provided empirical evidence on the ways self-regulation training can contribute to second/foreign language development and acquisition in general (e.g. Magno, 2011; Rose & Harbon, 2013) and second/foreign language reading ability in particular (e.g. Finkbeine, Knierim, Smasal, & Ludwig, 2012). Reviewing the previous studies and investigations, one can arrive at such a conclusion that reading comprehension skill is deemed a prominent concern of almost all EFL classes, especially in Iran’s educational system and it appears an essential need for EFL learners in social and academic contexts as well. When EFL learners face predicaments in reading comprehension skills and they do not know how to remove them, undoubtedly they get demotivated and consider reading activities

as problematic and useless. In many EFL classes and language institutes in Iran, EFL learners feel bored and disappointed since they may not be given the opportunities to self-regulate their reading comprehension skill. Thus, taking these educational hurdles into account, this investigation has made attempts to investigate the impact of self-regulated strategies on promoting Iranian intermediate EFL learners' reading comprehension skill. Since reading comprehension is quite important in our schools and appears problematic for both EFL learners and teachers, the present study aimed to scrutinize the impact of self-regulated strategies on the development of reading comprehension skill. Therefore, introducing these strategies to language learners to empower their reading ability may be of great contribution in that they feel more motivated to continue their language learning.

METHOD

PARTICIPANTS

The participants of the study were 72 available Iranian EFL learners from four intact classes in an English language school in Ahvaz. Each class had 18 EFL learners. Two classes were randomly selected to form the experimental group and the other two classes were randomly chosen as the control group. To check their reading proficiency and homogeneity, all 72 EFL learners took a reading test from the Official Guide to the TOEFL (McGraw-Hill, 2013), whose reliability coefficient had been already obtained in a pilot test run to 20 EFL learners other than these 72 EFL learners and it was 0.86 through the Cronbach's Alpha. Based on the results obtained, all 72 learners had almost the same proficiency in reading comprehension. Since their scores were one standard deviation below the mean and one standard deviation above the mean, they were deemed intermediate EFL learners. Subsequent to that, the experimental group received instruction on SRL strategies to promote their reading comprehension skills and the control group just followed a non-SRL type of instruction on their reading comprehension skill. All of the participants were male EFL learners whose ages varied from 24 to 37.

INSTRUMENTATION

The instruments and materials presented below were employed in the study:

1. A reading proficiency test from The Official Guide to the TOEFL (McGraw-Hill, 2013) was used as a pretest to enable the researcher to check the participants' reading proficiency. The test was piloted and run to 20 EFL learners to check its reliability coefficient. Through the Cronbach's Alpha, the reliability coefficient of the test was 0.86.
2. Another reading proficiency test based on the test of The Official Guide to the TOEFL (McGraw-Hill, 2013) was applied as a posttest. Also, this test was run to those 20 EFL learners in another time to check its reliability. The reliability coefficient of the posttest was calculated through the Cronbach's Alpha (0.84).

MATERIALS

The present study enjoyed the following materials:

1. The book both the experimental group and the control group were studying in their reading course was Mosaic 1 (Silver Edition). It includes reading selections of various topics as well as pre-reading and post-reading activities and exercises which, among other things, focus on different reading strategies as well. Silver Edition reading books are organized into three parts: reading skills and strategies, building vocabulary and study skills, and focus on testing. Vocabulary and critical thinking skill-building activities provide the opportunity to practice necessary skills for standardized testing (Wegman & Knezevic, 2007).
2. The SRL strategies, goal setting, self-monitoring, and self-evaluation, were the other tools used for just the participants in the experimental group to enhance their reading ability with (Zimmerman, 2000).

PROCEDURE

The study was conducted in a language school in Ahvaz. The study made use of 72 EFL learners from four intact classes. All of them were male and their ages varied from 24 to 37. The researcher randomly divided them into two experimental group and two control group. Before checking the participants' reading comprehension proficiency, the researcher administered a TOEFL reading test (McGraw-Hill, 2013) to 20 EFL learners to check its reliability. After calculating the results, the reliability coefficient of the test was 0.86 through the Cronbach's Alpha. This test was used as a pretest. A few days later, these 20 EFL learners took part in another TOEFL reading test (McGraw-Hill, 2013) and the reliability coefficient for this pilot test was 0.84 through the Cronbach's Alpha and it was used as the posttest. Then, to check their reading proficiency, the pretest was administered to the 72 EFL learners in the experimental and control groups. The results of the pretest showed that all participants had almost the same proficiency in reading comprehension. They were considered intermediate EFL learners in that their scores were one standard deviation below the mean and one standard deviation above the mean.

The present study pursued the assumption that instructing EFL learners in SRL based on Zimmerman's (2000) self-regulation model would promote EFL learners' reading comprehension skill. Zimmerman (2002) is of the belief that the three phases of his self-regulation model keep students active and aware of their reading process. That is, during its three phases, students set goals, monitor and evaluate their progress toward goals, and their future use of strategies. This study followed the model introduced by Zimmerman (2000). This model of self-regulation consists of three cyclic phases: forethought, performance, and self-reflection. The first phase, forethought, is important because of its motivational effects and also because individuals evaluate their upcoming performance and learning progress against it (Cleary, Callan, & Zimmerman, 2012). This phase includes some sub-processes such as goal-setting and personal interest. Goal-setting which refers to the aim of a behavior in a period of time influences action (Locke & Latham, 2002). The second phase, performance, contains such sub-processes as record-keeping, metacognitive awareness, and self-monitoring that occur during learning and influence attention and action.

Record keeping, as a self-observational technique, is "a person's tracking of specific aspects of their own performance, the conditions that surround it and the effects that it produces" (Zimmerman, 2000, p. 19), and it helps to increase self-regulated learners' awareness (Zimmerman & Paulsen, 1995). In this way, they can keep track of cognitive and metacognitive processes during learning. For example, teachers can have students use self-recording forms in order to know the reasons for problems and then to find solutions to them (Cleary & Zimmerman, 2004). Likewise, self-regulated learners have a large store of metacognitive knowledge about learning strategies (Zimmerman, 1986), and this metacognitive awareness could improve their self-regulation in return (Zimmerman, 2001). In other words, metacognitive strategies lead to higher levels of self-regulated strategy use (Turner, 1995). Self-monitoring refers to a process through which students systematically monitor their performance to check if they have progressed toward their goals (Zimmerman, 2002). Self-monitoring involves "cognitive tracking of personal functioning, such as the frequency of failing to capitalize words when writing an essay" (Zimmerman, 2002, p. 38) as well as techniques such as "self-questioning, writing down grades for exams to keep track of and gauge learning success" (Cleary & Zimmerman, 2004, p. 539). It can also take the form of "checking the content of study, judging learning difficulties, assessing progress and predicting learning outcomes" (Cheng, 2011, p. 1). Overall, the application of performance phase in reading is reflected in learners' using their background knowledge, selecting strategies to understand and comprehend the text, and working with others to understand texts better (Davis & Gray, 2007). In the self-reflection phase, that follows the performance phase, learners evaluate their progress and adjust their strategies (Zimmerman, 2008). In self-evaluation, a sub-process of this phase, students evaluate themselves against standards such as one's previous performance or another student's performance (Zimmerman, 2002). They evaluate the effectiveness of their strategies and methods. For example, they examine their answers to questions and compare them with those of another person (Zimmerman, 1989). In this phase, teachers' feedback in the form of non-threatening evaluations helps students to see errors as learning opportunities to improve self-regulation (Perry, Hutchinson, & Thauberger, 2007). Self-reflection phase can, in turn, encourage the students to set some goals for the subsequent learning task (Moos & Ringdal, 2012).

To carry out the cyclic self-regulation process of Zimmerman's (2000) model in the experimental group of this study, at first, the teacher in the experimental group provided two briefing sessions for the EFL learners in this group before the treatment and then performed the three phases of Zimmerman's (2000) cyclic self-regulation and their sub-processes on sample practice reading passages so that the participants in this group became familiar with the procedures in the treatment. Then, the teacher in the experimental group began the forethought phase and collected professional reading passages and resources to support her efforts. She asked the EFL learners to write down their prior knowledge about all reading selections and made the purpose of reading clear, for instance, through explaining the need for finding unfamiliar vocabulary and writing them down.

As for implementing goal-setting, she tried to increase the amount of time the EFL learners would spend on reading. In addition, she adopted a question from Cleary and Zimmerman (2004) and addressed it to the students: Do you have a goal you are trying to achieve in your reading? Explain. The next sub-process of forethought phase that the teacher implemented was personal interest. In order to put it into practice in the class on the basis of Housand and Reis (2008), she told them to create a "The Reading selections I Want to Read" list in their Reading Log and provided them with interest-based reading selection opportunities. In other words, they could choose from among reading selections of their textbook. Following Cleary and Zimmerman (2004), she also asked them the questions: How interesting is reading for you? How much do you enjoy reading?

The second phase, performance, included the use of class-based metacognitive strategies and monitoring. In this phase, exhibiting self-regulated behavior of the teacher in Davis and Gray (2007), the teacher monitored and adjusted her behavior and initiatives as needed to support their learning and asked them to use metacognitive strategies to monitor and repair their understanding during reading. As regards record-keeping which is a sub-process of the

performance phase, she followed Housand and Reis (2008) and told them to record minutes they had spent reading as well as the pages and the titles of reading selections they had read in their Reading Log in order to track their progress.

In order to put metacognitive awareness into practice, the teacher metacognitively prompted the EFL learners on the basis of Hoffman and Spatariu's (2008, cited in Housand & Reis, 2008) guidelines. That is, the teacher provided them with bookmarkers for writing unfamiliar vocabulary, required them to have weekly reflection on their Reading Log, provided them with open-ended weekly writing prompts, and asked them open-ended questions related to the reading selections at hand. Moreover, she followed Housand and Reis (2008) and wanted them to use the reading strategies modeled and explicitly taught to them (e.g., drawing inferences from reading selections, and identifying author's purpose and main idea).

In the self-monitoring sub-process of performance phase, the teacher adapted self-questions in Cheng (2011) and wanted the learners to ask themselves the following questions:

1. Can I summarize the main idea of the text?
2. Can I list the five important reading points in this session?
3. Can I write a short comment on this reading selection?
4. Can I discuss the topic addressed in this reading selection?
5. Are the important reading points I have listed the same as those listed by my classmates and teacher?

The teacher also adapted some questions from Wilawan (2012) and presented them to students. They are as follows:

1. Does the reading selection make sense to you?
2. Do you have any problems with the section we have just read?
3. What is this reading selection about?
4. What does the author mainly discuss?
5. What does he most often mention?

The third phase, reflection, included self-evaluation and conferencing using Reading Logs. In order to conduct self-reflection phase, the teacher followed Davis and Gray (2007), reflecting on and setting new goals for herself and the learners at various points during the treatment. To achieve this goal, she asked the learners to collaborate with a partner to discuss prior knowledge and new knowledge under her supervision. In addition, she asked the EFL learners to evaluate their own performance, discuss their understanding of texts and assignments with peers under the teacher's supervision, keep weekly reflections in Reading Log, and participate in conferences with the teacher because conferences could promote teacher-student discussion of student progress. As for the participants in the control group, they studied the same reading materials as the participants in the experimental group did. However, they followed a non-SRL type of instruction for their reading course. The EFL learners in this group just answered pre-reading questions, read the text for comprehension, summarized or paraphrased it, and answered post-reading questions. All participants came to their reading class twice a week. The whole experiment lasted three months. After the treatment, a posttest on reading adopted from *The Official Guide to the TOEFL* (McGraw-Hill, 2013) was administered to all participants. As stated before, this test was piloted and its reliability coefficient was calculated through the Cronbach's Alpha (0.84).

RESULTS

As regards the performance of both the experimental and control groups on the pretest, the mean scores of both groups' participants were close to each other. The mean score of the experimental group is 93.36 and that of the control group is 92.61. According to table 1, the Sig. (2 tailed) value is .673, referring to the fact that it is more than 0.05. Thus, there remained no statistically significant difference between the two groups in terms of their reading comprehension ability in the pretest.

Table 1

Descriptive Statistics for Both Groups' Performances on the Pretest

Groups	N	Mean	SD	Sig. (2 tailed)	t
Experimental	36	93.36	6.92058	.673	.423
Control	36	92.61	8.07210		

The results of the posttest revealed that the participants of the experimental group outperformed their counterparts in the control group. Therefore, it should be pointed out that self-regulated strategies had a positive impact on Iranian intermediate EFL learners' reading comprehension skill. Based on table 2, the Sig. (2-tailed) value which is .000 is less than 0.05, revealing that the instruction of self-regulated strategies was quite fruitful to the EFL learners in the experimental group.

Table 2
Descriptive Statistics for Both Groups' Performances on the Posttest

Groups	N	Mean	SD	Sig. (2 tailed)	t
Experimental	36	97.22	4.56140	.000	5.281
Control	36	82.75	15.79580		

Concerning the pretest-posttest performances of the participants in the experimental group, it is worth mentioning that there was a statistically significant difference between the results obtained in the pretest and the posttest through the calculation of paired sample t-test. The mean of the pretest in this group was 93.36 and the mean of the posttest was 97.22. Table 3 has the details.

Table 3
Descriptive Statistics for the Experimental Group

Tests	N	Mean	SD	Std. Error Mean
Pretest	36	93.36	6.92058	1.15343
Posttest	36	97.22	4.56140	.76023

Table 4
Paired Samples Test (Experimental Group)

	Paired Differences		Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2 tailed)
	Mean	Std. Deviation		Lower	Upper			
Pair 1 Pretest-Posttest	-3.86111	7.12401	1.18734	-6.27153	-1.45069	-3.252	35	.003

According to table 4 given above, figures showed that the participants of the experimental group not only outperformed their counterparts in the control group but this time they excelled themselves in the posttest compared with their performance in the pretest. As for both performances of the control group's participants on the pretest and the posttest, table 5 vividly show that the mean scores of the pretest (92.61) and the posttest (82.75) were not statistically different. However, it should be stated that their performance on the pretest was much better than that of theirs on the posttest. Table 6 depicts that there was a significant difference between the pretest and the posttest performances of the control group.

Table 5
Descriptive Statistics for the Control Group

Tests	N	Mean	SD	Std. Error Mean
Pretest	36	92.61	8.07210	1.34535
Posttest	36	82.75	15.79580	2.63263

Table 6
Paired Samples Test (Control Group)

	Paired Differences		Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2 tailed)
	Mean	Std. Deviation		Lower	Upper			
Pair 1 Pretest-Posttest	9.86111	18.84243	3.14041	3.48575	16.23647	3.140	35	.003

DISCUSSION

This investigation endeavored to examine the impact of self-regulated strategies on promoting Iranian intermediate EFL learners' reading comprehension skill. Respecting self-regulated learning and the use of such strategies, Pintrich (2000) contends that such learning is an active, constructive process through which learners set goals for their learning and they try to monitor, regulate, and control their cognition, motivation, and behavior which are then guided and constrained by their goals and contextual features of the environment. The findings of the present study proved such a fact and the participants in the experimental group had much more performance than their counterparts in the control group. As Wolters, Pintrich, and Karabenick, (2003) pointed out, the experimental group could monitor, manage, and control their cognition, motivation, and behavior so as to achieve self-set goals. The findings of this study are in line with Ayatollahi, Rasekh, and Tavakoli's (2012) findings which confirmed the idea that part of the achievements in L2 academic reading ability can be the result of SRLSs and epistemological beliefs. Also, Zarei and Hatami's (2012) study revealed that the relationships between self-regulated learning (SRL) components and reading comprehension knowledge of learners are mixed. In addition to these results, the study carried out by Al Asmari and Mahmoud Ismail (2012) showed that some of the SRLSs are predictors of reading comprehension. Along the same line, Yigzaw and Fentie (2013) revealed that elaboration, organizing and transforming, and also rehearsing and memorizing strategies are significant predictors of students' reading performance. Regarding reading and writing skills, the investigation conducted by Ghonsooly and Shirvan (2010) displayed a significant positive correlation between EFL learners' motivational self-regulatory strategies and their L2 reading and writing attainments. Also, James' (2012) study revealed a positive correlation between students' use of self-regulated reading strategies and an increase in their reading performance. However, the study conducted by Gelbar (2013) showed that SRLSs are not predictors of reading comprehension over and above oral reading fluency and cognitive ability. Based on the above findings concerning SRL, good readers are said to use various strategies to monitor and overcome reading problems. They can easily construct meanings from the text if they know when and how to apply learning strategies. Language learners should ask themselves why, how, when, where, and with whom they will learn these skills. The responses to such questions depend on their motivational beliefs or broadly on their self-regulation practices (Linnenbrink & Pintrich, 2002; Metallidou & Vlachou, 2007). Finally, Housand and Reis (2008) claimed that "some environmental conditions, such as organization of materials and clear expectations, support the development and use of self-regulated learning strategies in reading" (p. 109).

Grounded upon the results of the study, it was revealed that the EFL learners in the experimental group performed much better on the posttest than the EFL learners in the control groups. Therefore, it should be pointed out that self-regulated strategies promoted Iranian intermediate EFL learners' reading comprehension skill. The findings of the present study are supported by the theoretical suggestions regarding the instruction in self-regulatory strategies. For instance, Paris and Paris (2001) believe that instructing learners to apply self-regulated learning strategies is quite useful, and Moos and Ringdal (2012) contend that teachers must support students' development of self-regulation. The findings of this study are also in line with the investigations carried out by Palinscar and Brown (1984), Schunk and Rice (1987), and Souvignier and Mokhlesgerami (2006), all believing in the effectiveness of SRL strategy instruction to improve reading comprehension ability.

The results provided by the present study may in fact be an experimental contribution to Zimmerman's (2000) theoretical model of self-regulation and confirm its applicability to the EFL context, particularly to EFL reading as well. For example, this study can afford empirical evidence in the EFL context for Zimmerman's (2002) contention that the three phases of his self-regulation model keep readers active and aware of their reading process. Zimmerman (2002) argued that two aspects of the forethought phase of his model of self-regulation, namely the reader's goals and interests, play a crucial role in making inferences while reading. It is also noteworthy that self-regulated learners' great metacognitive knowledge of cognitive strategies (Zimmerman, 1989) was evident in the experimental group's ability to make inferences while reading in English. Based on this investigation, self-regulation strategies may cause higher levels of academic achievement and facilitate EFL learners' reading comprehension skill. One can state that training EFL learners in self-regulatory reading strategies may indirectly contribute to their general EFL reading ability as well. The findings of this study showed that self-regulatory reading processes such as selecting and using strategies were effective complements to the L2 reading comprehension strategies in enhancing EFL reading comprehension. To support the use of self-regulated learning strategies, it should be said that skilled and advanced readers can employ inferences from texts.

Reading comprehension is considered a quite complex skill and attempts are made to teach it in a best way possible. To help EFL learners overcome their reading comprehension problems, the use of strategies can be a good option. Self-regulated learning strategies through explicit or implicit instruction may be of great contribution to EFL

learners in this regard. EFL teachers may ask their learners to use some strategies and techniques to empower their reading comprehension skills. However, EFL learners may not be shown why and when learning strategies especially self-regulated ones can be used. Self-regulated learning strategies can also be employed to strengthen other modes and areas of language. For instance, EFL learners can employ them to increase their lexical knowledge which in turn contributes to the reading comprehension development. Following their development in the language skills, they probable gain academic achievements. Self-regulated learning can make EFL learners enjoy autonomy and control in their reading comprehensions skill. They can monitor, direct, and regulate their comprehension and achieve some goals in language acquisition. Furthermore, they would be able to improve other language skills. EFL self-regulated learners can be aware of their academic strengths and weaknesses since they have some strategies at their service to appropriately apply to deal with the challenges of academic tasks. EFL self-regulated learners can control their learning context as well. This is done through directing and regulating their own actions toward their learning goals. The findings of the present study are also in line with Pratontep and Chinvonno's (2008) study which demonstrated that there were significant differences between learners' reading mean scores after 10 weeks of training in self-regulated strategies. The study carried out by Mirhassani, Akbari, and Dehgan (2007) revealed that there was a significant relationship between language proficiency and self-regulatory components. In addition, Shang (2010) provided empirical support for a significant positive relationship between perceived self-efficacy and using reading strategies although there was no significant relationship between reading strategies and reading attainment.

However, the study conducted by Zarei and Hatami (2012) displayed no significant relationship between self-regulated components and vocabulary knowledge, but the relationships between the same components and reading comprehension knowledge of Iranian EFL learners were mixed. The findings of their study were not in line with many previous studies (e.g., Magno, 2011). Zarei and Hatami (2012) furthermore stated that although these studies did not investigate the relationship between self-regulated learning strategies and vocabulary and reading comprehension specifically, their results showed that there was a significant positive relationship between self-regulated learning strategies and learners' achievement. Additionally, it is worth mentioning that reading comprehension and vocabulary knowledge are two major language components. Elsewhere, they mentioned that "if there is a positive relationship between self-regulated learning strategies and language proficiency, the self-regulated learning strategies ought to have a direct relationship with reading comprehension and vocabulary knowledge" (p. 1942). Generally speaking, successful readers' reading comprehension skill may depend on the effective application of such strategies. For example, they can make frequent use of strategies such as making inferences, predicting, looking for relationships, understanding meanings, rephrasing text, and monitoring. It is argued that making inferences which is a top-down (Hudson, 1988) and a higher-level process (Grabe & Stoller, 2002) in L2 reading is an important micro-skill that makes L2 learners efficient readers (Brown, 2001). In other words, an EFL reader should be able to find the relations between ideas and events present in the text as well as the relations between the text and one's own general background knowledge. It should also be noted that these relations are often not presented explicitly and must be inferred.

CONCLUSION

The results of the posttest revealed that the participants of the experimental group outperformed their counterparts in the control group. Therefore, it should be remarked that self-regulated strategies had a positive impact on Iranian intermediate EFL learners' reading comprehension skill. Concerning the pretest-posttest performances of the participants in the experimental group, the findings displayed a statistically significant difference between the results obtained in the pretest and the posttest through the calculation of paired sample t-test. This showed that the participants of the experimental group not only outperformed their counterparts in the control group but this time they excelled themselves in the posttest compared with their performance in the pretest. According to the two performances of the control group's participants in the pretest and the posttest, the results showed that there was some difference between both the pretest and the posttest performances. However, the difference between these two performances was not statistically significant. The use of self-regulation reading strategies significantly increased learners' reading comprehension. In other words, it can be concluded that teaching techniques based on self-regulation can significantly promote reading performance in college students, and it develops students' independent skills in reading. The findings are in line with earlier research on self-regulation (e.g., Nash-Ditzel, 2010). Nash-Ditzel (2010) which found that teaching techniques based on self-regulation and reading strategies can significantly promote reading abilities in college students. McMahon and Dunbar (2010) also reported that empowering learners through self-regulated on-line learning develops students' independent skills in reading and understanding academic texts. Finding a positive impact of self-regulated learning on reading ability, Swalander and Taube's (2007) study showed that academic self-concept significantly influenced reading ability. Academic self-concept showed a direct and strong influence on goal-oriented strategies and on reading ability in Swedish participants. They argue that one of the important duties of educators at school is strengthening students' trust in their own ability to succeed in literacy activities and to assign a positive value

to reading. The results of the present study can shed light on the ways in which EFL teachers can help their students enhance their self-regulatory reading strategies. The results afforded by this investigation can be an incentive for EFL educators to make use of the self-regulatory processes in teaching reading comprehension. Essentially, having diagnosed their learners' deficiencies in reading, EFL reading teachers can launch investigations into self-regulatory strategies so as to remove the educational obstacles. To this aim, EFL teachers are advised to employ SRL strategies in all language skills especially reading comprehension. EFL authorities in Iran are suggested to include SRL strategies in EFL reading materials and textbooks so as to promote opportunities for learners to self-regulate because when SRL strategy training is combined with reading strategy instruction, reading comprehension can improve greatly (Souvignier & Mokhlesgerami, 2006). Thus, applying tasks and activities which include self-regulation in textbooks can foster EFL learners active participation in their learning process, help them view themselves as agents of their learning, and develop their autonomy which entail some conditions such as motivation (Schunk & Zimmerman, 2007).

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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