Effects of Self-Regulated Strategy Development on EFL Learners' Reading Comprehension and Metacognition

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ABSTRACT

In most academic courses, success in school depends, in large part, on students' ability to read effectively and implement the reading content to their future learning. Nevertheless, the lack of evidence-based instructional strategies in reading makes reading comprehension in a foreign language more difficult. In this light, learning about reading strategies has become an important issue because it provides the basis for a substantial amount of learning in literacy education and foreign language teaching/learning. This study then examined the effectiveness of a reading comprehension instruction (self-regulated strategy development, SRSD) on Iranian EFL learners' reading comprehension of argumentative texts, and compared the effectiveness of such an instruction with nonstrategic-based (i.e., traditional) instruction. Additionally, it examined the metacognitive effects of participation in the nonstrategic-based instruction and strategic-based one, drawing on the TWA strategy (i.e., thinking before reading, thinking while reading, and thinking after reading). To achieve of this study aims, 70 Iranian EFL learners from a language school participated in the study with a pre-test and post-test control-group design. To collect data, reading summaries and a metacognitive awareness inventory (MAI) were used. Also, eht Oxford Placement Test was used to ensure the homogeneity of the participants at the entry phase, in terms of the target language (English) level. The analysis of covariance on the data indicated that the strategic-based i.e., SRSD, instruction had a positive impact on the participants' reading comprehension of argumentative texts in the experimental group (i.e., SRSD group). Also, the effect of SRSD instruction on the participants' reading comprehension of argumentative texts was significantly greater in the SRSD group than the non-SRSD (control) one. In addition, SRSD instruction significantly improved the L2 participants' metacognition (including metacognitive awareness and regulation). The results draw L2 teachers' attention to the importance of teaching self-regulated strategies as a way to improve argumentative reading and metacognition of L2 learners.

Keywords: reading; Self-Regulated Strategy Development (SRSD); metacognition; TWA strategy; EFL teaching

INTRODUCTION

Reading is a crucial skill for professional success and academic learning (Pritchard, Romeo, & Muller, 1999). In some academic subject areas, school success is dependent on knowing how to read, understand what was read, and apply the content to future learning. Reading is a basic and sometimes complementary skill in second/foreign (L2) language learning, and it is perceived as the most important academic skill for university students (Noorizah Mohd Noor, 2006). Moreover, as Levine, Ferenz and Reves (2000, p. 1) state, "The ability to read

academic texts is considered as one of the most important skills that students of English as a second language (ESL) and English as a foreign language (EFL) need to acquire".

Furthermore, one of the most important factors in L2 learning is the method or type of instruction L2 teachers use in their teaching to facilitate the learning of target language, in general, and English, in particular (Grabe & Stroller, 2002). A type of instruction which is put forward for success in learning to read in L2 is strategic reading (Kolić-Vehovec, Rončević, & Bajšanski, 2008). Teaching/learning reading strategies, "tactics that readers use to engage and comprehend text", has been introduced as a way to develop L2 reading comprehension (Paris, Wasik & Turner, 1996, p. 610). This concern might arise from the belief that reading strategies and strategic reading can activate L2 learners' autonomy and make them aware of constructing meaning process (Druitt, 2002). Accordingly, some researchers (e.g., Cohen, Weaver & Li, 1998) have recommended to systematically introduce and reinforce strategies to help learners develop as strategic readers; L2 readers may need strategy knowledge to help themselves to be independent and competent readers (Jafarigohar & Khanjani, 2014). This issue has made self-regulated learning an important topic in educational and psychological research in the last two decades (Steffens, 2008). In fact, self-regulation is "an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior guided and constrained by their goals and the contextual features in the environment" (Pintrich, 2000, p. 453).

In addition, the awareness and monitoring of one's comprehension process have been deemed as important aspects of skilled reading (Mokhtari & Reichard, 2002), and recent trends have emphasized the role of the metacognitive awareness for L2 readers (Alexander & Jetton, 2000). Such awareness and monitoring processes are related to metacognition, which can be thought of "as the knowledge of the reader's cognition about reading and the self-control mechanisms they exercise when monitoring and regulating text comprehension" (Mokhtari & Reichard, 2002, p. 250).

In light of the above issues, this study was an attempt to examine the effects of a self-regulated strategy instruction on the reading comprehension and metacognition of EFL learners and compared its effectiveness with a traditional (the type of reading instruction which is not specifically aimed at developing self-regulated strategies) instruction. More specifically, it explored whether self-regulated strategy development (SRSD) could improve argumentative reading and metacognition (including both metacognitive awareness and regulation) of EFL learners. In fact, SRSD is an approach which can guide language learners toward self-regulated routines, intending to foster language skills (Graham & Harris, 2003). Considering the nature and importance of reading comprehension courses in L2 syllabi in some Asian countries such as Iran or Malaysia (see Nambiar, 2007; Noorizah Mohd Noor, 2006), and the problems L2 university students have in engaging with reading and analyzing argumentative texts in their reading comprehension courses, the results of this study can be of paramount importance for those who are looking for an alternative to traditional methods in reading courses in which L2 students are exposed to reading materials that include extensive arguments. As Chambliss (1995) states, comprehending argumentative texts is difficult for L2 learners because of dialogical nature of this genre, so the related research should consider instructional techniques and effective methods in teaching this genre; the effective reading of argumentative texts is, in fact, important not only for academic success, but also for making real life decisions (Larson, Britt, & Larson, 2004).

LITERATURE REVIEW

Reading strategies are one of the important tools that have received a special focus in language learning. Some researchers (e.g., Li & Kaur, 2014) believe that strategy instruction can help language learners to be strategic readers and can promote their reading comprehension; good learners use strategies during the learning process to facilitate language learning. In fact, being a strategic learner can help to plan, organize, assess language learning, and become more autonomous (Jafarigohar & Khanjani, 2014). As to the reading skill, Li and Kaur (2014) state that reading strategy instruction can raise students' awareness of various reading tactics that can be at language learners' disposal in different reading situations.

Empirical research also shows that strategy instruction in reading can facilitate language learners' reading comprehension. For instance, Caverly, Nicholson, and Radcliffe (2004) examined the performance of 36 college students enrolled in reading developmental course before and after a strategic reading intervention called PLAN (Predict Step, Locate Step, Add Step, and Note Step). The results showed that many L2 learners were successful in improving their learning comprehension by using PLAN; they applied their reading strategies in the correct context and transferred strategic reading skills to other contexts. In addition, Li and Chun (2012) investigated the effects of strategy use on Hong Kong university students' reading literacy performance. Their results demonstrated a positive effect of learning strategy use on the students' English reading performance.

Although some students may be able to critically read and draw correct conclusions from texts in the classroom, regrettably, many students have difficulty understanding their texts and organizing ideas into comprehensible language. These struggling readers may need specific instruction in reading comprehension (including comprehension strategy) to confront challenges as they attempt to meet future demands of education. As Taylor, Pearson, Clark, and Walpole (2000) state, L2 reading classroom includes very little instruction that directly addresses reading comprehension; reading comprehension is often tested, but is rarely taught. Thus, in search of effective reading instruction, some researchers have directed their focus towards self-regulated development (including SRSD). For example, in the context of Egypt, Ismail Ammar (2003) conducted an experimental study to see the effect of self-regulated reading (SRR-based) program on the critical reading skills and reading motivation of prospective Egyptian EFL learners. SRR is concerned with defining instructional strategies that help students develop the knowledge and skills required to direct their own reading activities across contexts and time; it includes four basic phases: planning, meta-comprehension activation, comprehension monitoring and control, and reflection. In his study, the experimental group had the self-regulated reading paradigm, whereas the control group was taught reading using the traditional approach. In the traditional approach, the instructor posed a general question about the reading selection, and his students read silently in trying to find answers, merely through skimming and scanning the passage. Difficult words were discussed and the instructor asked follow-up questions to check the students' understanding. The findings indicated that the participants' self-regulation of their reading behaviors resulted in greater gains in their critical reading skills, as well as motivation to read. Antoniou and Souvignier (2007) used an instructional program that involved the explicit teaching of reading enriched with the use of self-regulation strategies to improve the reading comprehension of learners with learning disability. The program included recognizing and activating prior knowledge by thinking, identifying text structures, and making prediction; it also focused on monitoring for comprehension and finding meaning of unknown words, summarizing based on text genre, and self-regulation via a checklist plan. The results showed that the participants with learning disabilities benefited from implementation of the reading-strategy program in the long term. More recently, Nabavi

Ekhlas and Shangarffam (2012) conducted a study on Iranian L2 learners to find out if there was a relationship between self-regulated strategies with the four language skills. Their findings showed that behavioral self-regulated strategies i.e., self-evaluation strategies which helped provide information about the learners and their language accuracy, positively correlated with four language skills, including reading.

Furthermore, by providing a specific instruction in effective reading comprehension, L2 teachers may be able to change not only the content knowledge of their students, but also their ways of reading. Reading is a complex skill, impacted by varied contributing factors, resulting in various outcomes in L2 education. One factor demonstrated to be significant in the contribution to language learning and its outcome is language learners' metacognition (Burchard, 2002). Metacognition is a "prerequisite for self-regulation, the ability to monitor and check one's own cognitive activities while reading" (Baker & Brown, 1984, p. 376). Some of the investigations into classroom interventions which incorporate metacognition as a part of their programs considered the relationship between reading skill and language learners' metacognition and the impact of reading instructions on language learners' metacognition i.e., one's ability to understand, control, and manipulate his/her own cognitive process to maximize learning (Schraw & Dennison, 1994). For instance, Phakiti (2003) investigated the relationship between Thai learners' metacognitive strategy use and L2 reading test performance. The results showed that there was a positive relationship between metacognitive awareness and reading test performance of Thai students. The findings also revealed that the use of metacognitive strategies improved the L2 students' reading performance. Moreover, Cubukcu (2008) investigated the effects of training with metacognitive reading strategies on L2 Turkish university students' reading comprehension. The L2 participants wrote their reflections about their thinking processes while doing reading tasks. Results revealed that systematic direct instruction in metacognitive language learning strategies could enhance their reading comprehension to become not only better readers, but also autonomous and strategic learners.

To conclude, the close review of the related literature demonstrates that self-regulated learning or instruction was investigated with regard to L2 learners' reading skill (e.g., Ammar 2003). Attempts were also made to introduce self-regulated instruction to overcome the reading comprehension of learners with learning disability (Antoniou & Souvignier, 2007). However, few studies have shown the effects of SRSD instruction on L2 reading skill. Most studies on SRSD were done with regard to L2 learners' writing skill (e.g. Graham & Harris, 2003; Graham, Harris & Mason, 2005). The review of literature also shows that almost, to the best of our knowledge, no studies have examined the effectiveness of a self-regulatory strategy-based instruction such as SRSD on L2 learners' reading on argumentative texts within an EFL context. The effective reading of argumentative texts is important not only for academic success, but also for making real life decisions (Larson, Britt & Larson, 2004, cited in Haria, 2010). EFL learners often have problems with argumentative texts as these texts are dialogic in nature and learners often fail to critically evaluate or analyze arguments, which entail several cognitive processes; argumentative texts also put added responsibility on our readers to be aware of their own attitudes on a topic and to approach a text objectively to fully understand the author's argument (Haria, 2010).

Thus, a gap is felt to see whether strategy-based instruction such as SRSD intervention, as compared with non-strategy-based one (more traditional reading instruction in which students have a more passive role and do not receive treatments specifically target self-regulated strategy development in reading), can improve EFL students' reading comprehension of argumentative texts. SRSD is a flexible instructional framework that can help students explicitly learn language strategies such as developing background knowledge, planning learning and setting goals, self-questioning and self-monitoring, peer-mediating, and

independent-modeling (Graham, Harris & Mason, 2005). Though it was originally developed to address difficulties with the writing skill in the first language, it would include procedures for goal setting, self-monitoring, self-instruction, and self-reinforcement in other skills and settings (Harris et al., 2008). Furthermore, there exists no strong empirical evidence in EFL contexts showing the comparative effectiveness of SRSD and non-SRSD instructions on EFL learners' metacognition (including awareness and regulation). Thus, there is a need to investigate strategy-based and non-strategy-based programs to build the metacognitive awareness and regulation in EFL learners. If EFL learners achieve gains in metacognitive awareness and regulation, the specific approach to the reading course may be recommended as a worthy consideration at language schools. In light of the above issues, this study sought to address the following research questions:

1. What is the effect of SRSD and non-SRSD instructions on EFL learners' reading comprehension of argumentative texts?
2. What is the effect of SRSD and non-SRSD instructions on the metacognition (i.e., metacognitive awareness and regulation) of EFL learners?

METHOD

PARTICIPANTS

The participants of the study included 70 Iranian EFL learners who had enrolled in the intermediate level in an English institute in Neyriz, a city in Fars Province in Iran. All the participants were females, and their age varied from 16-26. This study was conducted during the academic semester in 2013-2014 in two classes, each with 35 EFL learners; the participants were homogenous in term of the scores on Oxford Placement Test (OPT, 2007). The present study had a quasi-experimental design as complete randomization of the participants was not possible to be implemented i.e., non-random sampling was used.

INSTRUMENTS

To collect data, this study made use of three instruments. The first instrument was Oxford Placement Test (OPT, 2007) to investigate the homogeneity of the participants at the entry phase. According to Edwards (2007), the test provides a reliable and efficient means of placing students at different levels of language ability. OPT is capable of being utilized with any number of students of English to ensure efficient, reliable and accurate grading and placing of students into classes at all levels, and has been calibrated against the proficiency levels based on the Common European Framework of Reference for Languages (CEFR) and the Cambridge ESOL Examinations (Allen, 2004). Having utilized the OPT to determine the proficiency level of participants, Birjandi and Sayyari (2010) also established the concurrent validity of the OPT with TOEFL scores. The results revealed a high correlation between the OPT and TOEFL scores. Meanwhile, the reliability of the test as measured by Cronbach's alpha in the current study was found to be 0.85. The test had 50 multiple-choice questions, which assessed the participants' knowledge of grammar and vocabulary, a reading text with 10 graded comprehension questions, and an optional writing task that assessed the participants' productive skill. The test was designed to be done within 65 minutes.

The second instrument was reading summaries (summarization) to assess the reading ability of the participants. It is one of the most effective methods to assess reading. Through this assessment tool, a reader should be able to reduce a text to its main points, recognizing and eliminating unnecessary information. Three summaries were used before and after the interventions to examine the effectiveness of the instructions (see Appendix B for a sample).

Care was taken to select the intermediate-level argumentative reading texts with controversial topics which would encourage the EFL learners to consider different points of views while reading. For instance, arguments on topics related to the environment (e.g., "Should marine mammals be in captivity?") and policy issues (e.g., "Should there be a school all year-round?") generated several views. Besides, the present researchers selected the texts which included the basic structural elements of an argument (i.e., author's belief or position, supporting reasons or corresponding evidence, opposing views, and conclusion). Moreover, the readability indices of the texts, calculated through Flesch-Kincaid readability test, displayed the Flesch Reading Ease scores ranging from 60 to 70, which were neither very easy nor very difficult for the intermediate level participants. Moreover, the texts were neither very short nor very long (they contained 275 to 375 words with the average sentence length of 17 words).

Each summary was scored by two raters using Hoyt's (2010) Summarization Scoring Rubric; that is, each participant's summary was scored "2" if they completely supported the idea, they received "1" if they mentioned the idea but not fully supported, and "0" if idea was not included in summary. Each participant scored (-1) for writing extraneous information that was not identified in the text. This removed the possibility of a perfect score if the participants had simply copied the text. Meanwhile, the interrater reliability coefficients of the reading summary tests, used as the pre-test and post-test, were 0.95 and 0.97 respectively. In summary, the aggregate of interval-scale scores from the reading summaries made up the participants' scores for assessing reading ability in the present study.

The third instrument was the full version of Metacognitive Awareness Inventory (MAI; Schraw & Dennison, 1994) to measure both metacognitive awareness and regulation. This valid self-report questionnaire was a 52-item test coded on a 5-point Likert-type scale ranging from 1 to 5. The test consisted of statements describing the process of learning in general. The participants were asked to indicate the extent to which they agreed or disagreed with each statement (see Appendix A). MAI assessed two separate dimensions of metacognition: metacognitive awareness and metacognitive regulation. Metacognitive awareness included three subscales of declarative knowledge (i.e., awareness of one's strengths, weaknesses, and resources), procedural knowledge (i.e., steps for actual strategies), and conditional knowledge (understanding when and why to use specific strategies). Metacognitive regulation included five subscales: planning, information management, monitoring, debugging, and evaluation. The internal consistency of the metacognitive awareness (.72) and regulation (.72) and the whole test (.79), measured through Cronbach's alpha, was found to be acceptable.

PROCEDURES

This quasi-experimental research had a control group pre-test post-test design. A sample of 70 EFL learners registered for intermediate-level English classes in a Language Institute in Neyriz (which could be accessed by the one of the present researchers) was selected. To further ensure the homogeneity of the EFL participants, the OPT was administered to the EFL learners. Following guidelines of the test, those who scored above 31 on grammar and language use and above 8 on reading and writing parts were considered as intermediate-level EFL learners. Then, 70 EFL learners whose scores were between 47 and 70 (with the mean of 57.78) were selected as the participants of the current study; none of the participants were excluded from the study. They comprised of 70 EFL learners who were randomly assigned to experimental group (n = 35) and control one (n = 35). At the beginning of the course, the participants in both groups were required to summarize three argumentative texts (see a sample in Appendix B) as the pre-test. More specifically, the L2 participants were asked to

summarize each text in at least 10 sentences following what they had read. They were allotted 30 minutes to read and summarize each argumentative text, in total time of one hour and half (i.e., one class period) for all three texts. Every participant's summary was scored on an interval scale by two raters, following Hoyt's (2010) Summarization Scoring Rubric; the average scores of the two raters constituted each participant's summary score. The aggregate of interval-scale scores from the three reading summaries made up the participants' total scores for assessing reading ability in the present study. Also, to collect data on the metacognitive effects of the interventions (including metacognitive awareness and regulation), MAI was administered as the pre-test in both experimental and control groups in a separate session at the entry phase.

The interventions were then implemented in both experimental (i.e., SRSD) and control (i.e., non-SRSD) groups for more than a month (six weeks) by one of the present researchers (an M.A. student who was the teacher in the language institute). The control group received the non-SRSD (more traditional reading) instruction in which students did not receive the treatment which would specifically target self-regulated strategy instruction in reading. In the control group, a couple of brief discussion questions (as a warm-up) were provided by the instructor before reading the argumentative texts. Then, the instructor asked the EFL students to read the assigned text silently in the classroom; the teacher later selected one of the students in the classroom to read a paragraph from the text aloud. The teacher read the paragraph again and began to give the definitions or synonyms of difficult words in the reading material. In order to keep their attention, she paused at random spots in the text and asked several EFL learners to continue reading the text. Next, the key vocabulary in the argumentative text was explained by the instructor. Then, several comprehension questions were asked in the context of classroom. The L2 participants in the control group were occasionally invited to guess the meaning of words while reading, skim (rapidly move the eyes over the texts), and scan the text (cover a great deal of materials to locate a piece of information in the text).

In the experimental group, the EFL participants were instructed how to monitor their reading through the TWA strategy, which is an instructional technique used to improve reading comprehension through self-regulation before, during, and after reading; in other words, it is a self-regulatory strategy that has the reader thinking before reading, thinking while reading, and thinking after reading (TWA). It guides the reader in identifying structural elements of written arguments and in summarizing the content of argumentative texts; this strategy, which is commonly used within SRSD framework, can establish self-regulation and management procedures, while encouraging readers to think about their reading task at three points i.e., before, during, and after reading (Rogevich & Perin, 2008). TWA strategy consists of different components taught through three stages (Hoyt, 2010):

- Stage 1. Before L2 learners read, they will (a) identify the author's purposes, (b) reflect on what they know, and (c) determine what they want to learn.
- Stage 2. While L2 learners are reading, they will (a) monitor their reading speed, (b) link their own knowledge to what they read, and (c) reread parts that are confusing.
- Stage 3. After L2 learners read, they will (a) establish main idea for each paragraph, (b) summarize with supporting details, and (c) identify what they have learned.

This study utilized TWA strategy, following Hoyt's (2010) descriptions and guidelines. In the reading texts, the participants in the experimental group were asked about the structure of the texts, the main idea(s), and supporting ideas for each paragraph. They were instructed to identify the text writers' positions, supporting reasons for the writers' positions on a topic in the text, corresponding evidence, and the opposing positions. The teacher herself sometimes began the session with modeling the text, and then the participants were asked to practice

either in pairs or independently; they were taught to use a graphic organizer to support themselves when implementing the TWA technique. Also, the participants were asked to highlight the important information in the texts with their own highlighters so that they themselves could learn to dispose extraneous information while reading. Participants were additionally instructed on how to use annotations such as writing their own comments and interpretations, relevant experiences, and definitions of key terms into the margins to better identify main ideas. This was done with the teacher modeling, paired practice and then independent modeling (by the individual participants). They were sometimes invited to prepare a self-evaluation checklist after they practiced a short text independently to keep track of their progress.

After the instructions, a post-test was done. Similar to the pre-test, each participant was given three other medium-sized texts (each containing 275 to 375 words) with similar readability indices (with the score range of 60-70 using a Flesch formula) to write a summary for each text in a 90-mintue class period. Like the pre-test, the score for each summary could range from 0 to 20. The same scoring procedure, which was used in the pre-test, was applied to obtain the EFL participants' post-test scores on reading; that is, the aggregate of interval-scale scores from the three reading summaries made up the participants' total scores for assessing reading in the post-test. Moreover, the MAI test was administered again as the post-test in another 20-minute session to assess the L2 participants' metacognition gain. In sum, both the summarizations and MAI were used as post-tests.

At the end, given the pre-test-post-test design of the study, ANCOVA (analysis of covariance) was used as a statistical tool for the analysis of reading gains (summarization scores). Also, to address the effectiveness of the instructions on the participants' metacognitive awareness and regulation, MANOVA (multivariate analysis) was conducted.

RESULTS

Descriptive statistics of both (summary) reading scores in both SRSD and non-SRSD groups were obtained and summarized in Table 1.

TABLE 1. Descriptive Statistic of Reading Scores in Both Groups

Group	Variable	*N*	Min	Max	Mean	Std. Deviation
SRDS	Pre-test	35	9	53	32.50	8.46
	Post-test	35	34	60	45.88	6.16
Non-SDSR	Pre-test	35	11	52	30.37	8.55
	Post-test	35	18	53	34.61	9.21

As Table 1 shows, the pre-test means score in the SRSD and non-SRSD groups were 32.50 and 30.37, respectively. That is, the mean score in the SRSD group was slightly higher, but the difference was not very great. According to Table 1, the difference in the post-test mean scores of the SRSD (45. 88) and non-SRSD (34.61) groups was more, with the SRSD group receiving higher reading gains. Also, the data shows that the mean scores increased from the pre-tests to the post-tests in both groups, indicating the better performance of two groups after the instructions.

To find out the answer to the first question of study, concerning the comparative effects of SRSD and non-SRSD instructions on the participants' reading performance, ANCOVA was conducted after checking the homogeneity of the groups in terms of reading scores, equality of variance in the groups (See Appendix C, Tables C1 and C2), and the lack of a significant interaction between the covariate (i.e., pre-test) and treatment. The results

manifested the normality of distribution of the reading scores ($p > .05$), similar score variances in both groups ($p > .05$), and no significant interaction between the treatment and the pre-test reading scores, F (1, 66) = 3.275, $p = .075$. Since none of the assumptions were violated, ANCOVA was then performed to investigate the comparative effectiveness of the instructions i.e., treatments on the participants' reading performance between the two groups (see Table 2).

TABLE 2. Analysis of Covariance for the Treatment Effect on the Post-test Reading Scores

Source	Sum of Squares	*df*	Mean Square	*F*	*Sig.*	Partial Eta Squared
Corrected Model	4012.07	2	2006.04	56.37	.000	.627
Intercept	2105.67	1	2105.65	59.17	.000	.469
Pre-test	1788.78	1	1788.78	50.27	.000	.429
Group	1717.96	1	1717.96	48.27	.000	.419
Error	2384.30	67	35.59			
Total	119800.75	70				

The results, as demonstrated in Table 2, revealed that the treatments of the study had a significant effect on the participants' post-test reading scores, F (1, 67) = 48.27, $*p \leq .05$. The partial eta squared, indicating the effect size of the treatment, was found to be large (.419), meaning that about 42% of variance in the post-test scores were due to the treatment effect. According to the results, the SRSD group in the post-test (with adjusted mean score of 45.24) performed better than the non-SRSD group (with adjusted mean score of 35.26) on the summary reading post-tests. That is, the mean difference (9.98) between the SRSD and non-SRSD groups was significantly different on the post-tests ($*p \leq .05$). These statistics point to the conclusion that the SRSD group significantly performed better than the non-SRSD group on the reading after the treatment.

Furthermore, the MAI test was employed to measure both metacognitive awareness and metacognitive regulation of the participants in the two SRSD and non-SRSD groups. Descriptive statistics of the two variables, i.e., metacognitive awareness and regulation, are summarized in Tables 3.

TABLE 3. Descriptive Statistics of Metacognitive Awareness and Regulation Scores in Both Groups

Variable	Group		*N*	Min	Max	Mean	Std. Deviation
Awareness	SRSD	Pre-test	35	75	123	94.63	9.08
		Post-test	35	128	151	139.49	5.85
	Non-SRSD	Pre-test	35	75	119	95.54	9.11
		Post-test	35	89	125	103.51	8.41
Regulation	SRSD	Pre-test	35	46	69	54.54	4.40
		Post-test	35	74	89	80.31	3.75
	Non-SRSD	Pre-test	35	45	73	55.37	5.70
		Post-test	35	48	70	59.71	6.59

As Table 3 displays, the pre-test mean scores of the metacognitive awareness in the SRSD and non-SRSD groups were 94.63 and 95.54, respectively, indicating a very small difference before implementing the treatments. Similarly, the pre-test mean scores of the metacognitive regulation in the SRSD and non-SRSD groups did not show much difference, suggesting little pre-treatment difference between the two groups. But, the post-tests mean scores in the SRSD and non-SRDS groups for the metacognitive awareness (139.49 and

103.51, respectively) and regulation (80.31 and 59.71, respectively) indicated greater differences between the two groups at the post-test phase.

To answer the second research question, intending to examine the comparative effectiveness of the SRSD and non-SRSD instructions in terms of both metacognitive awareness and regulation, MANOVA was carried out (with the post-test scores of the metacognitive awareness and regulation as dependent and the groups of the study as independent variables). The assumption of the equality and homogeneity of variance/covariance for the metacognitive awareness and regulation scores were also checked (see Appendix C, Table C3). The test of equality of error variance showed that the metacognitive awareness and regulation scores had similar variances in both groups ($p > .05$), giving further assurance with proceeding with the MANOVA analysis. The results of MANOVA for the treatment effects on the metacognitive awareness and regulation scores are presented in Table 4.

TABLE 4. Result of MANOVA for Group Effects on Metacognitive Awareness and Regulation Scores

Effect		**Value**	***F***	**Hypothesis *df***	**Error *df***	***Sig.***	**Eta Squared**
Intercept	Wilks' Lamba	.003	10211.90	2	67	.000	.997
Group	Wilks' Lamba	.13	223.19	2	67	.000	.869

As displayed in Table 4, the results revealed a statistically significant difference, F (2, 67) = 223.19, $p \leq .05$ (Wilks' Lambda = .13; partial eta squared =.869); the p value for the group variable, i.e. the type of instruction or treatment, was not found to be statistically significant ($*p \leq .05$). In other words, there was an interaction between the treatment and the post-test scores. Given the large eta square, this means that the performance of the participants significantly depended on the type of the instruction that the participants had. Additionally, the results of the post-hoc test (Tukey's HSD post-hoc test) showed that the mean differences in the metacognitive awareness (35.97) and regulation (20.6) between the SRSD and non-SRSD groups were significantly different at the post-test phase (see Table 5); the SRSD group (M = 139.49) performed better than non-SRSD group (M = 103.51) on the metacognitive awareness. Similarly, the performance of the SRSD group (M = 80.31) was better than that of non-SRSD group (M = 59.71) on the metacognitive regulation. In sum, the results of the multivariate analysis indicated the type of instruction i.e., treatment, had a significant impact on the metacognition (i.e., awareness and regulation) gains of the participants; the SRSD group performed significantly better than non-SRSD group.

TABLE 5. Comparison Test of SRSD and Non-SRSD Groups on Metacognitive Awareness and Regulation Scores

	(I) Group	**(J) Group**	**Mean Differene (I-J)**	**Std. Error**	***Sig.***	**%95 Confidence Interval**	
						Lower Bound	**Upper Bound**
Awareness	SRSD	Non-SRSD	35.98	1.73	.000	32.51	39.43
	Non-SRSD	SRSD	-35.97	1.73	.000	-39.42	-32.51
Regulation	SRSD	Non-SRSD	20.60	1.28	.000	18.04	23.16
	Non-SRSD	SRSD	-20.60	1.28	.000	-23.15	-18.04

DISCUSSION

The result of current study indicated that the EFL participants in both the non-SRSD (traditional) and SRSD groups had gained from the instructions given in comprehending main ideas and identifying argumentative elements in the reading texts. Explicit and strategic

instruction given by the teacher and engaging the EFL students in reading through questioning provided useful insights to address the existing gap in EFL reading and improvement of their performance on reading comprehension. Thus, the above results confirm our hypothesis that reading instruction could improve the participants' skills to comprehend the argumentative texts. The instructions provided the opportunity for the EFL students to analyze and evaluate the texts through questioning, particularly probing questions (e.g., "Why do you think the author is telling us that?", "What does this mean?", "Is the author's position clear?", "Why or why not?", "What makes it clear?", "Is the author's argument strong?", "Why or why not?"); evaluating the author's and the reader's standpoint on the issue helped them interact with the texts better and connect their own information and experiences with what the author has said; in other words, the instructions assisted them to identify structural parts of an argument (e.g., identifying the author's intent: "I strongly believed that …", identifying reason: "one reason for it is that …", evidence: "for example, they …", and conclusion: "therefore, we must do something to …"), decipher between more and less important parts of the text (e.g., main idea and supporting details), and notice keywords/phrases (e.g., "I think", "I believe", or "the evidence suggests"). This finding is consistent with the results of previous research on expository texts (e.g., Li and Chun, 2012), which reported that reading instruction, including strategy instruction, was closely linked to success in L2 reading, and could improve the reading comprehension of L2 learners.

Furthermore, the results obtained in the current study showed that the EFL participants in the SRSD group, as compared with the non-SRSD group, made greater gains in comprehending the argumentative texts. It is most likely that the EFL participants who used SRSD reading instruction, performed better in planning, monitoring, and regulating their reading comprehension. In the SRSD group, the metacognitive strategies such as planning and monitoring were implemented within the TWA technique, particularly in the first and second stages of the instruction. Before the learners started reading the texts, they were engaged in metacognitive planning, where participants were asked about the author's purpose or what they wanted to know and learn, monitoring, where participants were involved in self-questioning, paraphrasing, activating relevant background knowledge, making connections between new and previously learned content, and writing marginal annotations to enhance comprehension during reading, and regulating, which involved participants attending to and being aware of comprehension and reading task performance. This strategy could be involved in the third stage in which they could use self-regulation tools such as a self-evaluation checklist to keep track of their progress and check their reading comprehension. As Pintrich and De Groot (1990) argue, the use of these metacognitive strategies (planning, monitoring, and regulating) can be linked to achievement and better performance in reading comprehension.

Another plausible reason for the improvement of reading comprehension in the SRSD group can be due to their improvement in strategic behaviors by the EFL learners to make their reading easier and more self-directed. That is to say, the SRSD instruction, drawing on the TWE strategy, might have enabled the EFL learners to be less dependent and be more autonomous. According to Graham and Harris (2005), accomplishing a task through a strategy involves, deciding on a course of action to meet the goal; procedural knowledge of how to accomplish this goal; desire to actually go through with the actions necessary for accomplishing this goal, and making the effort to accomplish all of these actions. The SRSD instruction in this study intended to teach the EFL learners to be aware of strategic behavior so as to apply it independently. The EFL learners were equipped with self-regulatory techniques to take responsibility of their own reading and move from guided practice to independent practice so that they would be able to learn how to read argumentative texts effectively and independently. As the EFL students became more adept at using the strategy,

the instructor gradually withdrew input and support until the students were able to read the argumentative texts independently. The previous research (see Antoniou & Souvignier, 2007; Ismail Ammar, 2003) also support the use of strategic behaviors to guarantee success in the process of L2 learning.

Furthermore, the EFL participants in the experimental group experienced strategic instruction (SRSD) in several consecutive steps on a gradual basis. The steps were setting goals, monitoring use of the strategy, using the strategy, using self-statements, and finally reading independently. Goal setting occurred when the EFL participants learned to set specific reading goals to accomplish specific reading tasks in the first stage of SRSD instruction. These EFL participants learned to model the SRSD for themselves in various sample texts, and followed the steps in TWA. At the same time, the EFL teacher and learners worked together collaboratively and practiced using the self-regulatory techniques in reading until the learners felt independent in implementing them. During the consecutive stages in the SRSD instruction, the teacher and learners repeatedly discussed how, when, and why to use the strategy. These EFL learners learned to be strategic readers through mastering to monitor their reading tasks. They learned how to prime background knowledge by asking questions at different times, predict what the text was going to be about before reading a passage, discuss their thoughts on a given topic, monitor their reading, keep a good rate in reading, and re-read if they did not understand. As Cubukcu (2007) state, strategic readers "construct, examine, and extend meaning before, during, and after reading for a variety of texts (p. 106). All the aforementioned elements are associated with the development of reading, particularly for the argumentative texts. As Reidand and Lienemann (cited in Jacobson & Reid, 2007) argue, using SRSD model can assure that the teachers follow all the steps needed for students to successfully master a strategy and, consequently, derive maximum benefit from the strategy. Additionally, the EFL participants in the experimental group, due to step-by-step intervention within the framework of the SRSD instruction, benefited from support, prompts, constructive feedback (information about when they did well and when they needed improvement), encouragement, all leading to their confidence in reading comprehension. As Graham and Harris (2003) state, the step-by-step processes of the SRSD model can help learners gain confidence in self-monitoring strategies and using them for more independent learning.

Moreover, the better performance of the EFL participants in the experimental group at the post-test phase may reveal that they included more appropriate content by paying attention to relevant ideas (e.g., main idea) and representing the text writer's message (e.g., protecting endangered species) in their summaries. This issue indicates the better engagement of the participants with their intervention. Besides, the examination of the intervention in the experimental group revealed that the SRSD condition principally focused on the components which are important in reading comprehension such as text structure, background knowledge, evaluating performance on a task, self-questioning, and cooperative learning. These reading components, as Hoyt (2010) asserts, can increase L2 students' motivation and encourage them to have a deeper engagement with a text; hence, progress in reading skill may occur. It is very likely that the SRSD instruction orchestrated the utilization of cognitive side of reading and increased the EFL students' motivation. As stated by Chung (2000), the interaction between these components can increase L2 students' involvement and engagement in reading texts, resulting in enhancing reading comprehension.

The results of the present study also demonstrated that instruction in both non-SRSD (traditional) and SRSD groups improved the participants' metacognition. This means that implementing an explicit mode of instruction helped the EFL participants in both groups, to some extent, to become aware of the argumentative genre-specific reading and its structural elements (such as reason, opposing position, and conclusion). The EFL readers' awareness of text structure was related to metacognition effect. More importantly, the results showed that

the change in metacognition was statistically more significant in the SRSD group, as compared with the non-SRSD group. The reason for the greater improvement of metacognitive awareness and regulation might be due to more explicit mode of practice that the experimental group received on how to plan and monitor their own reading process through the TWA technique. As Schraw and Dennison (1994) state, metacognitive awareness includes knowledge about strategies and knowing when and why to use strategies, and metacognitive regulation involves the ability to think strategically, solve problems, plan, set goals, organize ideas, and evaluate. In the present study, both dimensions of metacognition were involved more in the development of self-regulatory instruction. To this effect, some researchers such as Zimmerman (2000) describe self-regulation as the learning that is guided by metacognition, strategic action and motivation.

Another reason might be that the EFL participants who self-regulated their reading process could use the given strategies to help themselves think about and solve new problems in various contexts; self-regulation could help them have self-knowledge of their strengths and weaknesses. As Pintrich (2002, p. 222-223) argues, the L2 learners who know their strengths and weaknesses and have self-knowledge can "adjust their learning strategies to be adaptive to further their learning" since they are aware of their knowledge of strategies and are able to transfer their metacognitive knowledge to various contexts. For instance, the EFL students were sometimes confronted with new tasks that required knowledge or skills they had not learned. In this circumstance, they could not rely on previous knowledge. Those students who were self-regulated could better use the given strategies to solve problems. Cohen, Weaver, and Li (1998) also assert that SRSD can raise awareness of the importance of strategic reading. This awareness is so important for improving reading comprehension. Meanwhile, the above findings find support from the results of studies by Cubukcu (2008) and Phakiti (2003), who concluded that metacognition could be considered as part of training programs which could have an impact on EFL learners' language learning performance.

CONCLUSION AND IMPLICATIONS

The current research sought to target the traditional instruction (non-SRSD) and strategic instruction (SRSD) in EFL reading comprehension of argumentative texts and metacognitive experience. One outcome of this study is that the use of reading instruction can enable EFL learners to make gains in ability to read and comprehend argumentative texts. More importantly, the use of self-regulatory strategy instruction incorporating goal-setting, self-monitoring, self-reinforcement can make EFL learners identify main ideas and critical elements in argumentative texts effectively, demonstrating a significant increase in comprehension of argumentative texts. The EFL participants who received the SRSD instruction in the present study performed better; this explicit instruction drawing on the TWE strategy (as an organizational tool) in the self-regulated framework helped them with the knowledge and skills needed to better understand what they read and engage more effectively with the argumentative reading.

The aforementioned results highlight that argumentative reading is an active process, requiring EFL students to monitor understanding; there is more to the reading than decoding of words; therefore, considerable emphasis should be placed on EFL students' effort in using strategies to make gains in reading. Moreover, the results suggest that L2 teachers can use the explicit instruction drawing on the TWE strategy as an accommodation or modification of the curriculum for L2 learners having reading difficulties; it can provide assistance in reading comprehension and make reading tasks easier for L2 students.

Furthermore, the results of the current study revealed that self-regulatory strategy use was more effective in enhancing metacognition (metacognitive awareness and regulation) of

the EFL participants; therefore, the main conclusion that can be drawn is that using SRSD as an instruction appears to be beneficial for L2 reading courses. The aforementioned results underscore the need for a strong emphasis on more explicit metacognitive strategy instruction in reading comprehension. As Akkakoson (2012) states, providing EFL readers with metacognitive reading strategy instruction is a pedagogically-rich method that can replace the traditionally teacher-dominated classroom. Metacognitive strategy instruction can provide EFL learners with the knowledge and skill to better understand their reading materials; it may also allow teachers to support EFL readers' efforts to make sense of texts and lead them to be independent learners. L2 teachers are then encouraged to develop and maintain effective self-regulatory strategy use across the curriculum by having a complete curriculum guide (i.e., lesson plans, authentic and controlled texts, activity packets, a glossary of argumentative terms) on the argumentative genre, and practicing the strategy before implementing it in the classroom. However, as language learners are different in their use of such strategies and learner factors may affect reading performance, self-regulatory strategy instruction may not be equally effective for all L2 learners; thus, further research is needed to identify those learners who benefit most and less from the self-regulatory strategy instruction in L2 reading classes.

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APPENDIX

APPENDIX A: METACOGNITIVE AWARENESS INVENTORY (MAI)

Always false	Sometimes false	Neutral	Sometimes true	Always true
1	2	3	4	5

1. Ask myself periodically if I am meeting my goals.
2. I consider several alternatives to a problem before I answer.
3. I try to use strategies that have worked in the past.
4. I pace myself while learning in order to have enough time.
5. I understand my intellectual strengths and weaknesses
6. I think about what I really need to learn before I begin a task.
7. I know how well I did once I finish a test.
8. I set specific goals before I begin a task.
9. I slow down when I encounter important information.
10. I know what kind of information is most important to learn.
11. I ask myself if I have considered all options when solving a problem.
12. I am good at organizing information.
13. I consciously focus my attention on important information.
14. I have a specific purpose for each strategy I use.
15. I learn best when I know something about the topic.
16. I know what the teacher expects me to learn.
17. I am good at remembering information.
18. I use different learning strategies depending on the situation.
19. I ask myself if there was an easier way to do things after I finish a task.
20. I have control over how well I learn.
21. I periodically review to help me understand important relationships.
22. I ask myself questions about the material before I begin.
23. I think of several ways to solve a problem and choose the best one.
24. I summarize what I've learned after I finish.
25. I ask others for help when I don't understand something.
26. I can motivate myself to learn when I need to.
27. I am aware of what strategies I use when I study.
28. I find myself analyzing the usefulness of strategies while I study.
29. I use my intellectual strengths to compensate for my weaknesses.
30. I focus on the meaning and significance of new information.
31. I create my own examples to make information more meaningful.
32. I am a good judge of how well I understand something.
33. I find myself using helpful learning strategies automatically.
34. I find myself pausing regularly to check my comprehension.
35. I know when each strategy I use will be most effective.
36. I ask myself how well I accomplished my goals once I'm finished.
37. I draw pictures or diagrams to help me understand while learning.
38. I ask myself if I have considered all options after I solve a problem.
39. I try to translate new information into my own words.
40. I change strategies when I fail to understand.
41. I use the organizational structure of the text to help me learn.
42. I read instructions carefully before I begin a task.
43. I ask myself if what I'm reading is related to what I already know.
44. I reevaluate my assumptions when I get confused.
45. I organize my time to best accomplish my goals.
46. I learn more when I am interested in the topic.
47. I try to break studying down into smaller steps.
48. I focus on overall meaning rather than specifics.
49. I ask myself questions about how well I am doing while I am learning something new.
50. I ask myself if I learned as much as I could have once I finish a task.
51. I stop and go back over new information that is not clear.
52. I stop and reread when I get confused.

APPENDIX B: A SAMPLE OF ARGUMENTATIVE TEXTS

Save Manatees!

Manatees are giant marine mammals that live in the oceans and rivers around Florida. Usually, adult manatees are about 10 feet long and weigh close to 1,000 pounds. They are often called as sea cows. They eat weeds in the rivers just like cows eat grass. Forty years ago, only 1,900 of these lovable animals were alive. Therefore, manatees were put on the endangered-species list. Although there are more manatees alive today, but manatees are still in danger from hunters and I strongly believe that manatees need protection. One reason for saving them is that the manatees are an important part of our eco-system. For example, they eat weeds and plants and keep rivers clean. A 1,000-pound manatee eats 150 pounds of river-clogging weeds in one day. They help keep rivers clean for boaters and fishermen.

Second, manatees are a great tourist attraction. They are fun to watch. For example, every year 70,000 people visit Crystal River in Florida to see and swim with manatees. The tourists help the local business. Third, manatees are beautiful and peaceful creatures so they are worth saving. .Recently, the Florida Fish and Wildlife Conservation Commission voted to take the manatee off the state's endangered-species list. They claim that at present 3,100 manatees are living in Florida's waters. Therefore, they say that the manatees are not an endangered species. However, the manatees are still in danger and need protection. In 2006, 416 manatees died. More than 65% of all manatee deaths were caused by people. Because manatees float just under the surface of the water, boats often run into them and kill them. Some manatees were shot. Others died from swallowing fishhooks and old fishing lines. Swimmers who hang onto their fins often harass manatees. Humans are responsible for most deaths of manatees. Therefore, we must do something to save the manatees. Manatees should stay on the endangered species list, which makes it illegal to shoot them or harass them. People can help save the manatees by obeying boating speed limits and slowing down in manatee areas. So let us all join hands to save manatees. *word count*: 353

A SAMPLE OF SUMMARIZATION SCORING RUBRIC

The Title of the Text: Save Manatees!
Position: − Manatees should be kept on the endangered species list. **OR** − Manatees need protection from hunters and harmful people. **OR** We need to save manatees
Reason # 1: − Manatees need to be saved because they are an important part of our eco-system. **OR** − Manatees are important because they help keep rivers clean for boaters and fishermen.
Evidence # 1 (Facts, examples, or life experience): − The manatee eats 150 pounds of river-clogging weeds in one day. **(Fact) OR** − They eat weeds and plants and keep rivers from getting choked with weeds.
Reason # 2: − Manatees are a great tourist attraction **OR** Tourists like to watch manatees. **Sub/ Partial Reason 2:** Manatees are fun to watch.
Evidence # 2: (Facts, examples, or life experience): − Every year almost 70,000 people visit Crystal River in Florida to see and swim with manatees − The tourists will help the local businesses.
Reason # 3: (Minor and personal reason) − Manatees are beautiful and peaceful animals
Evidence # 3: no evidence.
Opposing position: − Last year the officials (Wildlife Conservation Commission) voted to take the manatee off the state's endangered species list. **OR** The officials said that the manatees are not an endangered species. **OR** − Some people disagree with the author (acknowledge other people's position) **OR** − The student may include reason, "But now many manatees are found in Florida waters" not necessarily acknowledge the opposition. This may/may not get points—it will depend on the context.
Evidence: − At present 3,100 manatees are living in Florida's waters.

Rebuttal: − However, manatees are still in danger and need protection. **Rebuttal—Evidence or Support:** − In 2006, 416 manatees died (Facts). **OR** − More than 65% of all manatee deaths were caused by people (Facts). **OR** Some manatees were shot. **OR** Some manatees have died from swallowing fishhooks and old fishing lines. **OR** Swimmers who hang onto their fins often harass manatees
Score 0,1,2 **0** = Idea not presented in summary **1** = Idea is mentioned but not fully supported **2** = Fully supported idea **Minus:……** (-1 for each Extraneous information) **Students' No:** …….. **Rater:……..** **Total score:……**

APPENDIX C: ANCOVA and MANOVA Assumptions

TABLE C1. Tests of Equality of Variance on Reading Scores

Test	Variable	*F*	*df1*	*df2*	Sig.
Levene	reading	3.39	1	68	.070

TABLE C2. Tests of Normality of Reading Scores

Test	Variable	*F*	*df*	Sig.
SRSD	Pre-test	.155	35	.200
Non SRSD	Pre-test	.135	35	.106

TABLE C3. Tests of Equality of Variance on Metacognitive Awareness and Regulation Scores

Test	Variable	*F*	*df1*	*df2*	Sig.
Levene	Awareness	2.81	1	68	.098
Levene	Regulation	5.71	1	68	.057

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