Self-Regulated Strategy Development (SRSD) and the Reading Process: Effects on Reading and Metacognitive Awareness

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Abstract

The present study was an attempt to investigate the effects of self-regulated strategy development (SRSD) on L2 learners' reading and metacognitive awareness. More specifically, this study aimed to introduce a self-regulated reading intervention as a means of fostering reading comprehension of L2 learners in the Iranian context and to investigate the metacognitive learning of the participants in this study, who were 60 female Iranian EFL learners at the upper-intermediate level in two groups of experimental and control. The learners in treatment group met twice a week and were taught on the basis of SRSD during the course. The control group learners, however, received a conventional classroom instruction as traditional or explicit method of reading instruction. After pretest and posttest in reading, the metacognitive awareness inventory (MAI) designed by Schraw and Dennison (1994) was distributed among the EFL learners in order to measure their metacognitive awareness. Based on the analysis of the data, it was concluded that using SRSD as a strategy to foster learners' reading comprehension was effective, but it did not have significant effects on metacognitive awareness of the learners.

Keywords: self-regulated strategy development (SRSD), reading comprehension, metacognitive awareness

INTRODUCTION

Reading is regarded an important skill, especially in EFL contexts where there is not enough oral contact between L2 learners and native speakers. In such contexts, the single purpose of education and an essential input is reading. Therefore, any factor which has an effect on reading is also considered to have the same significance as the reading skill, and consequently, any study on reading, reading components and reading factors will be of great importance. Reading as a critical skill and as a lifelong learning skill goes beyond decoding and comprehension to interpretation and development of new knowledge. Grabe and Stoller (2002, p. 9) state that "reading is the ability to draw meaning from printed page and interpret this information appropriately". It means

comprehending and interpreting the information of the text are important. It implies that students need to learn a considerable amount of information from the text. But this learning can happen easily if it is integrated with useful techniques in appropriate contexts without anxiety. As it is axiomatic, reading has special place among the learning skills, and definitely each study that has been done in the area of reading and instructional reading techniques like Self-Regulated Strategy Development (SRSD) is of paramount importance.

Furthermore, although in the area of reading, various studies have been done and reading has been studied with different aspects of affective and social factors like attitude and motivation (Zarei & Elekaie, 2013), autonomy (Chan, Humphreys & Spratt, 2002) (Thanasoulas, 2000), anxiety (Zarei, 2014), self-esteem and self-regulation (Ertmer & Schunk 1999) and critical thinking (Gokhale, 1995), to name just a few, not much research has reported the effectiveness of teaching reading strategy to L2 learners due to the discrepancies of results. This study focused on a type of reading-based strategy which helps L2 learners to understand reading texts better. In addition, educational researchers have found that there is a strong correlation between reading and academic success (Zimmerman, 1989). The present study was an attempt to see whether the self-regulation skills are effective for L2 learning and attainment of reading in an L2 context like Iran. This study attempted to investigate the effects of Self-Regulated Strategy Development (SRSD) on L2 Learners' Reading and Metacognitive Awareness. More specifically, the study aims to introduce a self-regulated reading intervention as a means of fostering reading comprehension of L2 learners in the Iranian texts and to investigate the metacognitive learning maintained over time.

Based on the aim of the study, the following research questions were formulated:

1. Does the SRSD instruction, which uses the TWA procedure, lead to better comprehension of argumentative texts as compared with non-SRDS instruction?
2. Is there any significant difference in the metacognitive awareness of the EFL learners in the SRSD group and those in the non-SRSD group?

LITERATURE REVIEW

Self- regulation refers to individuals' active involvement in different learning activities as designing goals; monitoring and evaluating progress; and when necessary adjusting strategies for meeting their goals (Bandura, 1986, 1991; Schunk, 2001; Zimmerman, 2000). To date several studies have been carried out in order to theory into practice. For instance, Pintrich and DeGroot (1990) conducted a study in order to explore the relationship between the components of self-regulated learning and academic achievement. They found that instruction of self-regulated strategies is related to academic achievement. Moreover, the found that self-regulated learning is necessary for academic achievement and classroom learning.

Bergin (2005) attempted to explore the relationship between use of self-regulated learning strategies and academic achievement, and they concluded that there is a

positive relationship of students' use of strategies, such as metacognitive strategies and resource management strategies to academic achievement. In his study, Nash-Ditzel's (2010) demonstrated that teaching techniques based on reading strategies and self-regulation could significantly develop reading abilities in college students. Nash-Ditzel by using informal observations, interviews, document analysis, and think-aloud protocols, revealed that the knowledge and ability to use reading strategies contributed to the students' ability to self-regulate while reading.

As it is clear from the literature, and also to the best of the researcher's knowledge, no study so far has been done in investigating the effect of Self-Regulated Strategy Development (SRSD) on L2 Learners' Reading and Metacognitive Awareness. In addition, no study tried to explore two important concepts of Self-Regulated Strategy Development and metacognitive awareness in a study to introduce a self-regulated reading intervention as a means of fostering reading comprehension of L2 learners in the Iranian texts and to investigate the metacognitive learning maintained over time. The findings can offer insights for syllabus designers, material writers and more primarily language teachers to reconsider their responsibilities so that they can employ appropriate plans, designs, strategies and classroom conduct based on learners' ability to cope with stress and anxiety hidden in high-pressure conditions such as reading comprehension texts.

METHOD

Participants

The participants of this study were 60 female Iranian EFL learners at the upper-intermediate level. These 60 participants were upper-intermediate learners as the institute reported their homogeneity based on the student's previous achievements in a private English Language institute in the city of Isfahan. They all had already passed 8 semesters and were studying at the upper-intermediate level. They were divided into two groups, i.e. the treatment group and the control group. The participants in the treatment group were 30 females (within the age range of 17-24), and the participants in the explicit group were 30 females (within the age range of 19-26). Two experienced teachers completed the instruction procedure in the experimental and control groups. The experimental group was instructed by the researcher herself and the control group was instructed by one of the teachers in the institute.

Materials

The materials used in present study were the course book *Cause and Effect* by Akert and Lee (2005). In fact, the learners were required to summarize the argumentative text after reading thoroughly and cover the main idea, the pros and cons of the text and give their ideas about the text. *Top Notch* series authored by Ascher and Saslow (2011) published by Pearson Education Inc.

Procedure

At the onset of the study and before the treatment, a pretest was run to the learners at the institute under study. It is worth mentioning that the sampling was originally based on convenience sampling since the researcher as the instructor at the institute under study was able to take the tests from the learners and make the changes to the design of the classrooms. Another important point to be mentioned is that since the capacity of each classroom was limited and there should be just 15 to 18 learners in each classroom, then there were four intact classrooms with 15 students in each that the researcher randomly divided the classes into two groups of control and treatment since for a quasi-experimental like the present one, there should be 30 participants in each group. In order to manage the time, the researcher distributed the MAI inventory among the subjects as at the same session when the learners completed the pre-test in reading and summarization. After this phase, treatment started.

The SRSD implementation for the experimental group occurred in two phases. First, the researcher tried to clarify the practice by getting the participants familiar with the required SRSD strategies and skills in one session before the onset of the study. The researcher introduced and elaborated the entire SRSD and its comprehension strategies to the learners in order to explain the overall picture. Then, the instructor introduced SRSD's stages to the participants and provided explicit instruction on how to use each strategy through modeling which was used as the essential elements of the research which enables the students to successfully use the strategies during the research process.

Once the researcher made sure that the participants had enough knowledge to use the strategies of SRSD, six instructional sessions were conducted. The learners at the treatment group were assigned to read an argumentative text; they were taught in detail how to monitor their reading and make sure they were reading for understanding. L2 participants were taught the TWA strategies. TWA is a kind of reading comprehension instruction in SRSD. By this strategy, the readers have to think before they read, while they read, and think after they read. TWA includes nine components. These components are taught through three stages (Hoyt, 2010):

Stage 1. Before the L2 learners read, they should (a) identify the author purposes, (b) reflect on what they know, and (c) determine what they want to learn.

Stage 2. While the L2 learners were reading, they (a) monitored their reading speed, (b) linked their own knowledge to what they read, and (c) re-read parts that were confusing.

Stage 3. After that the L2 learners read, they needed to (a) establish main idea for each paragraph, (b) summarize with supporting details, and (c) identify what they had learned.

The control group received a conventional classroom instruction as traditional or explicit method of reading instruction. The procedure was as follows:

At first the teacher read the texts. After reading the passage by the instructor, students were required to guess the meaning of unfamiliar words using contextual clues. In the case that they could not guess the meaning, they looked up the word in their dictionaries. After this phase, the teacher read the text again. Then students did the related exercises.

The length of the course was the same for both the experimental and the control groups. It lasted for 6 sessions and one session after completion of the treatment, the same test that was administrated in the pre-tests (both pre-test in reading and pre-test in MAI) was conducted to the treatment and control groups as post-test. The difference between pre-test and posttest reading was just in the topics that were elaborated above. The tests were scored and the results of pre-tests and post-tests were compared with each other in order to investigate the differences (if there is any).

Data Analysis

The analysis of the data was carried out in SPSS Version 21. To determine the effectiveness of the TWA intervention, a systematic visual comparison (like bars or line graphs) of responding within and across conditions of study was used to look for changes in the written summarization rubric score. For the data analysis, descriptive statistics (means and standard deviations) and inferential statistics i.e., t-test was used to check the effectiveness of TWA on their reading ability and metacognitive awareness.

RESULTS

Before treatment a reading comprehension test as pre-test was administered to the participant under study in order to investigate the learners' knowledge in text summarization. The results are represented in Table 1.

Table 1. Descriptive Statistics of the Pretest

Pretest Writing	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Control	30	7.00	2.00	9.00	167.00	9.5667	.35455	1.94197	3.771
Experimental	30	8.00	1.00	9.00	166.00	8.9333	.36745	2.01260	4.051

Table 1 reveals that the mean scores of students in control group is 9.56 with the standard deviation of 1.9; while the mean score of students in treatment group is 8.93 with the standard deviation of 2. After treatment a posttest was conducted to the learners in order to see whether or not the treatment was effective. Table 2 shows the results of posttest.

Table 2. Descriptive Statistics of the Posttest

Posttest Writing	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Control	30	7.00	3.00	10.00	197.00	11.566	.35455	1.94197	3.771
Experimental	30	7.00	12.00	19.00	467.00	15.563	.35455	1.94197	3.771

Table 2 reveals that the mean scores of students received SRSD instruction is 15.5 with the standard deviation of 1.9. While the mean score of students received traditional instruction is 11.5 with the standard deviation of 1.9. As stated above, understanding the means or standard deviations of the groups under study is not enough for final conclusion to ensure the homogeneity or heterogeneity of the groups under study after the treatment. So, there is a need for running a t-test between groups. The results of an independent sample t-test are illustrated in Table 3.

Table 3. Tests of Between-Subjects Effects

Dependent Variable: Posttest Writing						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1292.920a	1	646.460	261.682	.000	.902
Intercept	220.294	1	220.294	89.173	.000	.610
Group3 * Pretest	1292.920	1	646.460	261.682	.000	.902
Error	140.813	57	2.470			
Total	8782.000	60				
Corrected Total	1433.733	59				
a. R Squared = .902 (Adjusted R Squared = .898)						

The results represent the significant level of experimental or SRSD group is .000 while, the significant level of explicit group is .902 which is more than the p-value of 0.05. Therefore, the null hypothesis stating that the SRSD reading-based course does not improve the reading comprehension of EFL learners is rejected. It can indicate that there is a significant difference between the two groups regarding their scores. Hence, it is concluded that the students who received SRSD instruction outperformed the group who received traditional instruction. The second research question focused on metacognitive awareness inventory. The results of pretest of MAI are represented in Table 4.

Table 4. Descriptive Statistics of MAI

Pretest MAI (metacognitive awareness inventory)	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Control	30	7.00	101.00	108.00	3137.00	104.5667	.35455	1.94197	3.771
Experimental	30	8.00	101.00	109.00	3138.00	104.6000	.36703	2.01032	4.041

Table 4 reveals that the mean scores of students in control group is 104.5 with the standard deviation of 1.9 and the mean score of students in treatment group is 104.6 with the standard deviation of 2. After treatment, the same MAI inventory was distributed among the participants. Table 5 shows the descriptive statistics of MAI posttest between groups.

Table 5. Descriptive Statistics of Posttest of MAI

Posttest MAI	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Control	30	7.00	101.00	108.00	3137.00	104.8667	.35455	1.94197	3.771
Experimental	30	8.00	101.00	109.00	3138.00	104.9000	.36703	1.81032	4.041

Table 5 reveals that the mean scores of students in control group is 104.8 with the standard deviation of 1.9 and the mean score of students in treatment group is 104.9 with the standard deviation of 1.8. To understand whether there is a significant difference between groups, an independent sample t-test for metacognitive awareness is illustrated in Table 6.

Table 6. Tests of Between-Subjects Effects of MAI

Dependent Variable: Posttest MAI						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	226.583a	1	113.292	61.682	.060	1.000
Intercept	.000	1	.000	59.173	.070	.
Group * Pretest MAI	226.583	1	113.292	41.682	.090	1.000
Error	.000	57	.000			
Total	656487.000	60				
Corrected Total	226.583	59				
a. R Squared = 1.000 (Adjusted R Squared = 1.000)						

As the Table shows, paired sample t-test between pre and posttest of MAI shows the sig value of .090. Since the sig level is larger than 0.05, it can be concluded that the changes in MAI is not significant. Then, the difference between pre and posttest of MAI is not significant. So the null hypothesis which claimed there is no significant difference in the metacognitive awareness of the EFL learners in the SRSD group and those in the non-SRSD group is accepted.

DISCUSSION AND CONCLUSION

In this study we provided the reading program of SRSD to upper-intermediate EFL learners in order to investigate the effect of this program in learners' reading performance and metacognitive awareness via the pretest and posttest. The quantitative evaluation demonstrated that there was a significant difference in the SRSD posttest scores of the experimental group (M=44.69, SD=8.61) and the control group (M= 51.45, SD= 8.05), $F(1, 61) = 80.96$, $p= .00$. Also there was no significant difference in the effectiveness of the program on metacognitive awareness.

The results of the present study were in line with the different studies (Graham & Hebert, 2010; 2011; Graham et al., 2012; Saddler, 2006; Straub & Alias, 2013) which reported to improve the students' reading skill. Furthermore, the SRSD instructional method has evidenced improvements for high and low achieving students and those with emotional and behaviors disorders (Ennis et al., 2013). SRSD has helped to improve students' quality of writing, knowledge of writing, approach to writing, and self-efficacy (Harris et al., 2008).

The second research question tried to answer the existence of any significant difference in the metacognitive awareness of the EFL learners in the SRSD group and those in the non-SRSD group. The null hypothesis claimed that there is no significant difference in the metacognitive awareness of the EFL learners in the SRSD group and those in the non-SRSD group. The results revealed that is no significant difference in the metacognitive awareness of EFL learners in two groups, then the null hypothesis is approved. One assumption about the result can be the low level of the learners. It is assumed if the levels of the learners were advanced, then there would be a place for the metacognitive awareness of the learners. Because it could challenge advanced level learners more than upper-intermediate learners. Actually, this is a hunch and more elaborated and detailed studies can be explored as further studies.

The current study highlighted our understanding by considering the effectiveness of SRSD program. One of the obvious implications of the present study concerns the role of TWA in the area of reading comprehension and the effect of using strategies like SRSD in overcoming the big problem of reading comprehension among EFL learners as non-native students. The results of this study indicated that SRSD was effective in increasing learners' reading skill in the case that it instructed step by step based on the strategy's guidelines. The teacher as researcher in experimental group or SRSD classroom clearly observed that learners' attitude about the so-called strategy was positive and they were not reluctant to use SRSD in their instructions in the field of reading comprehension since the skill of reading is one of the most important skills that leads students to higher levels of performance both in the institute and in out of the classroom.

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