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# Enhancement of Iranian EFL University Students' Reading Comprehension through Explicit and Implicit Strategy Instruction

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**Abstract**
The role of metacognitive processing in learning different language skills has been considered by scholars in the field of English Language Teaching. The present quasi-experimental study sought to investigate the effect of explicit and implicit strategy instruction on reading comprehension among Iranian university students. A total of 119 male and female English as a foreign Language (EFL) university students aged 20-28, enrolled in three reading courses, were selected conveniently from a university in the central part of Iran. The three classes were randomly assigned to two treatment groups: explicit group (n= 37), implicit group (n=39), and control group (n=43). The experimental groups received treatment in the form of explicit and implicit strategy instruction while the control group followed the conventional course of instruction. Two different validated reading comprehension tests were used to collect measures of reading ability, and some reading texts taken from *Diary of a Wimpy Kid: Old School* were used as the materials of the study. Data analysis using ANOVA showed that although the reading scores of both experimental groups improved from pretest to posttest, the explicit strategy instruction group outperformed the implicit group in reading comprehension. Pedagogic implications stemming from the findings are discussed.

**Keywords:** Explicit strategy instruction; Implicit strategy instruction; Metacognitive reading strategies; Reading comprehension

## INTRODUCTION

The inclusion of strategic competence as a non-linguistic component of language ability (Bachman & Palmer, 1996) and later specifying metacognitive strategies as the core of strategic competence (Backman & Palmer, 2010) led to more scholarly interest in the role of metacognitive processing in performing different language skills (e.g., Anderson, 2012; Daradkeh, 2020, Ghaith & Sanyoura, 2019; Grabe, 2014; Grabe & Stoller, 2011). Reading comprehension is a skill that has proved to be related to the use of meta-cognitive strategies (e.g., Pressley & Afflerbach, 1995; Pressley & Gaskins, 2006; Mokhtari & Reichard, 2002; Sheorey & Mokhtari, 2001). Metacognitive strategies are higher-level mental operations that occur when readers successfully approach the text in order to understand what they are reading (Oxford, 2011). Research on reading comprehension suggests that readers' awareness of metacognitive strategies and what is necessary for effective reading lead them to take appropriate actions to meet the demands of a reading situation (Afflerbach &

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Cho, 2009). On a more general level, as Schraw and Gutierrez (2015) argue, strategy training is a powerful educational instrument that contributes to learning and achievement in academic realms. Several meta-analyses on the effectiveness of strategy instruction on academic performance (e.g., Chen & McDunn, 2022; de Boer et al., 2018; Maeng, 2014; Plonsky, 2011) have found the positive effects of strategy instruction on students' academic performance. On the one hand as indicated by several studies (Ardasheva et al., 2017; Fathi & Afzali, 2020; Pressley & Gaskins, 2006; Zhang & Seepho, 2013; Yapp & van den Bergh, 2021), the development of reading needs explicit instruction, among other things (Gutierrez & Schraw, 2015; Nietfeld & Schraw, 2002). On the other hand, research revealed that effective readers are competent critical thinkers (Sheorey & Mokhtari, 2001; Vijavaratnam, 2012), which implies that enhancing higher-order thinking skills can improve reading comprehension. Students with poor reading comprehension can answer specific questions or remember details. However, one of the goals of reading is to make new connections to our lives and world. Readers who can apply higher-order thinking skills demonstrate knowledge and understanding of the text. They can also place the information in new contexts and establish relationships between ideas (Anderson et al., 2001). Consequently, teachers must develop teaching methods to enhance students' higher-order thinking skills (HOTS) instead of lower-order thinking skills.

Explicit strategy instruction and implicit strategy instruction are two distinct procedures for strategy instruction. In the words of Iwai (2011), explicit strategy instruction refers to the "direct explanation of strategies" (p. 158) and helps learners improve their understanding of a particular strategy. According to Chamot and O'Malley (1994), "the main objective of explicit strategy instruction is to provide L2 students with a set of strategies that can be employed depending on specific learning tasks" (as cited in Fathi and Afzali, 2020, p.477). This type of strategy teaching is supported by sociocultural theory, as well as Vygotsky's zone of proximal development, in which individuals learn through interactions with others, receiving much support in learning something new, with a gradual release of responsibility until the person is able to carry out the task independently (Iwai, 2011). Explicit strategy instruction in this study is well grounded within John Anderson's (1982) Skill Acquisition Theory. It follows the five steps of preparation, presentation, practice, self-evaluation, and expansion/transfer of the Cognitive Academic Language Learning Approach (CALLA) (Chamot, 2009; O'Malley & Chamot, 1990) to strategy-based instruction (SBI).

On the other hand, implicit approaches to strategy instruction, as Gu (2019) has stated are "indirect, bottom-up and interactive approaches to strategy instruction, … the teacher does not start by selecting a task, anticipating potential problems and identifying the strategies to be taught " (p.29). In this line, Anderson et al. (2001) encourage teachers to use peer interaction and team works to support social activities instead of direct instruction, modeling, and coaching. HOTS-enhancing reading activities refer to the reading activities designed by the researcher to encourage participants to incorporate higher-order thinking skills- analyzing, evaluating, and creating. It is an implicit strategy instruction approach compatible with the instructional guidelines of the Strategic Content Learning (SCL) model (Butler, 2002) and Construction-Integration (CI) Model **(**Kintsch, 1998) in which explicit strategy explanatory fashion has no status. These models have theoretical roots in constructivism and sociocultural theories of learning (Butler, 2002).

However, although research on reading strategies is rich, there is still research scarcity in explicit strategy instruction, HOTS-enhancing reading activities, and reading comprehension across the English as a foreign language (EFL) university population in Iran. More particularly, the issue has been scantly explored within a cause-effect approach. It cannot be readily accepted and justified under conditions where a large body of research has been devoted to the subject in the form of correlational studies that have revealed significant relationships between strategy awareness and the use of metacognitive reading strategies and reading

comprehension (e.g., Mokhtari & Reichard, 2002; Mokhtari, et al., 2018). This study examined the effect of explicit strategy instruction and HOTS-enhancing reading activities on reading comprehension among Iranian University students to fill this gap. In so doing, the following research question was formulated:

***RQ.*** *To what extent do explicit strategy instruction and implicit strategy instruction in the form of HOTS-enhancing reading activities have differential effects on the reading comprehension of Iranian EFL university students?*

## LITERATURE REVIEW

Several studies have investigated the impact of teaching reading strategies on reading comprehension ability in EFL/ESL contexts. Fan (2010) investigated the effect of Collaborative Strategic Reading (CSR) on Taiwanese engineering university students' reading comprehension. The results revealed that students receiving CSR instruction, performed better on getting the main idea, and finding the supporting ideas in comparison with the students in the control group. In another EFL context, Çubukçu's (2008) study aimed to determine the effectiveness of systematic direct instruction of multiple metacognitive strategies on reading comprehension of expository texts, and vocabulary. The results indicated significant differences between experimental and control groups supporting the effectiveness of teaching metacognitive reading strategies. Babapour et al. (2018) investigated the effect of two types of reading interventions, Collaborative Strategic Reading (CSR) and Shadow Reading (SHR), on EFL learners' reading comprehension. The results of study revealed that the groups receiving CSR outperformed the SHR groups and control groups.

Donker et al. (2014) in their meta-analysis examined the long-term effects of 48 metacognitive strategy instruction interventions on student academic performance. They found that interventions with instructions including the cognitive strategy practice had higher long-term effects compared to interventions without this component. In another meta-analysis study Okkinga et al. (2018) stated that reading-strategy instruction has been highly effective in fostering reading comprehension in small groups which were tutored by researchers. Their meta-analysis showed that effects of strategy intervention were larger for interventions in which the trainer was the researcher as opposed to teachers.

Ajideh et al. (2018) investigated the effect of explicit instruction of metacognitive reading strategies through the Cognitive Academic Language Learning Approach (CALLA) on ESP reading comprehension of Iranian university students. The results revealed that explicit instruction of meta¬cognitive reading strategies had a positive effect on the learn¬ers' reading comprehension ability in ESP texts. In another study, Fathi and Shirazizadeh (2020) explored the effectiveness of L2 reading strategy instruction, set within CALLA model, on young Iranian EFL learners' reading comprehension and reading anxiety. In consensus with other studies, the results revealed the effectiveness of CALLA in fostering L2 reading comprehension of the young Iranian EFL Learners.

Soodmand Afshar and Bayat (2021) investigated the effect of language learning strategy instruction on the enhancement of less successful Iranian EFL learners' L2 achievement. The results indicated that explicit strategy instruction had a significant positive impact on L2 achievement of less successful Iranian EFL learners.

Filderman et al. (2022) investigated the relative effects of various approaches to comprehension intervention for struggling readers in third through 12th grade. The results indicated significantly higher effects associated with background knowledge instruction, and strategy instruction. Contrary to the findings of the preceding studies, Mehrpour and Sadighi (2012) reported that explicit strategy instruction had no effect on improving students' reading comprehension.

## METHOD

### Design

This study used a quasi-experimental pretest-posttest control group design which took place in an authentic learning environment using intact genuine classes. The independent variable was strategy instruction with two levels of explicit and implicit strategy instruction and the

dependent variable was reading comprehension. The two experimental groups received two different methods of strategy instruction.

**Participants**

A total of 119 EFL learners enrolled in three reading courses were selected conveniently from a university in the central part of Iran. The participants were males and females in the 20-28 age range. The number of participants in experimental group 1, experimental group 2, and the control group were 37, 39, and 43, respectively. To reduce threats to internal validity caused by participant characteristics, the researcher used a semi-randomization procedure and arbitrarily assigned the classes to two treatment groups and one control group. The resulting groups were probably not equal in other respects. However, as Mostert and Loxton (2008) have asserted with careful analysis and careful interpretation, non-equivalent comparison group designs can still lead to some valid conclusions.

**Instruments**

The following instruments were used for data collection:

**Oxford Quick Placement Test (OQPT)**

The Oxford Quick Placement Test (OQPT) (2001) was used to check the homogeneity of the participants at the outset of the study. It contains 60 multiple-choice questions assessing vocabulary, grammar, and reading. Following the guidelines of Allan (2004), EFL students who scored between 50 and 60 were selected as participants in the present study.

**The Reading Comprehension Tests**

Two validated reading comprehension tests from the intermediate part of the book *Steps to Understanding* were given to the experimental and control groups as pre-and post-tests. The pretest consisted of 69 questions, including true/false: 18 items, answer the questions: 24 items, cloze test: nine items, matching the pictures with the sentences: eight items, and find words in the story: 11 items. The posttest consisted of 67 questions, including true/false: 18 items, answer the questions: 24 items, cloze test: eight items, match the pictures with the sentences: eight items, and find words in the story: nine items.

Raw scores were converted to weighted scores. Each question had one correct answer, each correct answer gained one score, and there were no points deducted for wrong answers. The correct answers were calculated and divided by the total scores possible. Then to convert the decimal score to a percentage, the result was multiplied by 100. The rate was divided by 100 to convert from percentage to decimal form.

**Diary of a Wimpy Kid: Old School**

Widodo (2009) has stated that one of the crucial roles of reading teachers is choosing suitable and interesting texts. Hence, the reading texts were selected from the phenomenally bestselling Diary of a Wimpy Kid series- *Diary of a Wimpy Kid: Old School*. *Diary of a Wimpy Kid: Old School* is a young adult novel written by American author and illustrator Jeff Kinney and first published in 2015. It is a 217-page graphic novel composed of Comics content.

**Procedures**

From the beginning of the research, ethical issues related to the choice of topic and the design and operationalization of the study were taken into account. Before starting the experiments, however, participants received adequate information about the purpose, methods, and intended use of the investigation. Confidentiality was also promised to protect participants' rights to privacy. All the participants in the two experimental groups and the control group participated in reading classes for 16 weeks and received 2 sessions of a 90-minute reading comprehension instruction class each week. The lesson in two experimental groups and the control group ran for 90 minutes. To reduce the threat of the teacher effect, the researcher taught all three students' reading classes in morning sessions (from 8 a.m. to 9.50 a.m.) in the autumn semester of 2018. One week after the start of the research project, the placement test was carried out in experimental group 1 (X1), experimental group 2 (X2), and the control group to homogenize the participants. Students who scored between 50 and 60 were selected to participate in the study.

As for the experimental group 1, the validated reading comprehension test selected from the book *Steps to Understanding* was administered to the experimental group (1) and the control group as the pretest. Then, the treatment period started, wherein ten weeks were allocated to teaching reading strategies explicitly. Two weeks after the end of treatment sessions, the posttests were administered.

The explicit strategy instruction used as a treatment for X1 is well grounded within John Anderson's (1982) skill acquisition theory and follows the five stages of preparation, presentation, practice, self-evaluation, and expansion/transfer of Cognitive Academic Language Learning Approach (CALLA) (Chamot, 2009; O'Malley & Chamot, 1990) to strategy-based instruction (SBI). The strategies used for explicit teaching were derived from Bouchard's (2005) guidelines and are aligned with "Goal 2" of the TESOL Goals and Standards. Based on Bouchard's (2005) classification, the reading strategies selected to teach explicitly were: 1) the "About-point" strategy, 2) the "think aloud" strategy; 3) the "QAR" strategy; 4) the "GIST: Generating Interaction between Schemata and Text" strategy; 5) "Question Guides" strategy; 6) the "Previewing Text" strategy; 7) the "Coding Text" strategy; 8) the "Guided Imagery" strategy; 9) the "Mapping" Strategy, and 10) the "Text organization/Structure" strategy.

In experimental group 1, the teaching procedure was conducted within three sections: (1) pre-reading, (2) while-reading, and (2) post-reading activities. In each session, during the pre-reading activity, the specific strategy was introduced and referred to by its name, and the purposes of the strategy used and its benefits were described. Then, during the while- reading activity, the strategy was taught, modeled, and practiced, and students were asked to practice using the strategy in pairs, groups of three, or individually. During the post-reading activity, students had to discuss strategies.

For experimental group 2, ten weeks were allocated to apply reading activities to enable students to incorporate higher-order thinking skills while reading. A three-stage approach was followed. Background knowledge relevant to the while-reading activities in the next phase was activated in the pre-reading stage. Predicting what they will read and finding synonyms or definitions were the reading activities used in this stage. In the while-reading stage, the researcher sought to increase student engagement in the classroom. To this end, the activities included tasks in which the students had to demonstrate their thinking skills. Higher-order questions, reading puzzles, deleted texts, and word cards were some reading activities applied in this stage. Finally, in the post-reading phase, student's reading comprehension was extended from the pre-reading and during-reading phases to other learning activities.

Meanwhile, the control group enjoyed no treatment. The researcher followed the conventional teacher-centered reading approach, in which the teacher led the lesson, initiated the questions, and students generated answers. The teaching approach focused on teaching vocabulary, analysis of the grammatical structures of the texts, and translation from the English text. Two weeks after the end of treatment sessions, the reading posttests were administered in the three groups.

**Data Analysis**

Descriptive and inferential statistics were carried out to analyze the collected data. The descriptive statistics included calculating mean, standard deviation, minimum, and maximum. The inferential statistics was a one-way between-groups ANOVA.

**RESULTS**

One-way ANOVA is robust to violations of the normality assumption, and for "large sample sizes (e.g., 30+), the violation of the normality assumption should not cause major problems" (Pallant, 2013, p.214). However, since the sample size was relatively small and the normality assumption is only needed for small sample sizes to determine the distribution of variables and to check if each variable follows a normal distribution, the Shapiro-Wilk test was applied. The results are shown in Table 1.

**Table 1**
***Normality Distribution of Pretest by Shapiro-Wilk Test***

| Variables | Statistic | DF | *P* |
|---|---|---|---|
| Reading pretest | .994 | 90 | .97 |

Table 1 did not show evidence of non-normality of data distribution (W (90) =.994, *p* =.97). The equality of variances was investigated using Levene's test. The results are shown in Table 2.

**Table 2**
***Results of Levene's Test***

| Variable | Levene Statistic | DF1 | DF2 | *P* |
|---|---|---|---|---|
| Reading pretest | 1.453 | 2 | 87 | .85 |

The results of Leven's test of homogeneity of variance confirmed that the variability of scores for each of the groups is similar ($p>.05$). Leven's test showed that the variances for the reading score pretest ($F$ (2, 87) = 1.453, $p$ =.85) were equal. Next, to run ANOVA, the descriptive statistics were run for the pretest scores. Table 3 presents the results.

**Table 3**
***Descriptive Statistics for the Pretest Scores***

| | | Control | | Experimental 1 | | Experimental 2 | |
|---|---|---|---|---|---|---|---|
| Variable | N | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Reading | 30 | 64.21 | 4.74 | 64.58 | 4.63 | 64.07 | 3.99 |

One-way between-groups ANOVA was conducted for the pretest scores to ascertain that there were no significant differences among the three groups and to ensure that all the subsequent effects were the result of the strategy instruction approach and did not occur due to primary intergroup differences. The results of this analysis are presented in Table 4.

**Table 4**
***One-Way ANOVA Results for Pretest***

| | | *SS* | *DF* | *MS* | *F* | *P* |
|---|---|---|---|---|---|---|
| **Reading** | Between Groups | 46.956 | 2 | 23.478 | 1.698 | .18 |
| | Within Groups | 1188.947 | 87 | 13.825 | | |

The results indicated no significant difference among the three groups before strategy intervention in terms of the mean scores of reading score ($F$ (2, 87) =1.698, $p$ =.18). The same procedures were followed for the post-test scores. First, to check if each variable follows a normal distribution, the Shapiro-Wilk test was applied. The results are indicated in Table 5.

**Table 5**
***Normality Distribution of Pretest by Shapiro-Wilk Test***

| Variable | Statistic | DF | *P* |
|---|---|---|---|
| Reading posttest | .979 | 90 | .15 |

Table 5 showed the normality of data distribution in the posttest (W (90) =0.979, $p$ =.15). Then, the equality of variances was investigated using Levene's test. The results are shown in Table 6.

**Table 6**
***Results of Levene's Test***

| Variables | Levene Statistic | DF1 | DF2 | *P* |
|---|---|---|---|---|
| Reading posttest | .86 | 2 | 87 | .15 |

Table 6 shows that the variances for reading score posttest were equal ($F$ (2, 87) = .86, $p$ = .42). Next, the descriptive statistics were run for the posttest scores, whose results are shown in Table 7.

**Table 7**
***Descriptive Statistics for the Posttest Scores***

| Variable | Control | | | Experimental 1 | | Experimental 2 | |
|---|---|---|---|---|---|---|---|
| | N | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Reading | 30 | 65.11 | 4.09 | 80.82 | 4.29 | 72.22 | 3.5 |

As shown in Table 7, the students in experimental group 1 achieved much higher mean posttest scores on the reading score ($M$=65.11, $SD$=4.09). Next, one-way between-groups ANOVA was run for the posttest scores. The results are shown in Table 8.

**Table 8**
***One-Way ANOVA Results for Posttest***

| | | *SS* | *DF* | *MS* | *F* | *P* |
|---|---|---|---|---|---|---|
| **Reading** | Between Groups | 3713.162 | 2 | 1856.581 | 117.575 | **.001 |
| | Within Groups | 1373.783 | 87 | 15.791 | | |

The results of Table 8 indicated a statistically significant difference between the reading mean scores (F (2, 87) =117.575, p<0.05), and the Tukey post-hoc test showed that the mean scores of reading in experimental group 1 ($M$=80.82, $SD$=4.29) were significantly different from experimental 2 ($M$=72.22, $SD$=3.5, $p$ <.05), and control group ($M$=65.11, $SD$=4.09, $p$<.05). Given that experimental group (1) outperformed experimental group (2), it can be concluded that explicit strategy instruction and Hots-enhancing reading activities have significantly differential effects on the reading comprehension of Iranian EFL university students in favor of explicit strategy instruction. That is, explicit strategy instruction was significantly more effective in reading comprehension of Iranian EFL university students than HOTS-enhancing reading activities.

## DISCUSSION

The significant difference between explicit strategy instruction and HOTS-enhancing reading activities in posttest displays that although both experimental groups were successful at improving reading scores, the significant difference in explicit strategy instruction is indicative of the superiority of explicit method of instruction in the context of the study. In the researcher's view, the most compelling explanation for the present superiority of explicit strategy instruction can relatively be the instruction procedure and students' educational expectations. As Carrell (1998) has pointed out, knowledge of cognition and cognition regulation are essential for effective strategy instruction. The introduction of a specific strategy by its name, the purposes of the strategy use, and the benefits of strategy use improved students' knowledge of cognition. Meanwhile, teaching, modeling, and practicing the strategies developed their regulation of cognition. Students received sufficient support from the researcher to know when each strategy is appropriate so that they could self-regulate their strategy use as needed. They were helped in selecting strategies that were appropriate in different contexts. The researcher introduced strategies and slowly removed support, moving from modeling to guided practice to independent reading.

Moreover, although there is a trend to change educational policies from teacher-centered learning to student-centered learning, the results of the present study indicated that a teacher-centered approach to strategy teaching was more effective. The findings illustrated that practically explicit strategy instruction was more acceptable and applicable in the Iranian English teaching system. The results supported the implementation of the teacher-centered process of developing reading comprehension among Iranian EFL University students. In justifying the findings, it can be said that this procedure to teach strategies is in line with Almasi

and Fullerton (2012), who emphasize that students need to be aware that strategies are beneficial (conditional knowledge) and use strategies, they need to learn to think and act strategically when they have problems in reading. Furthermore, explicit strategy instruction can increase learners' self-efficacy, independence, and autonomy and can lead to higher reading performance among them (Oxford, 1990). Moreover, probably, as a result of the increase in learners' self-efficacy, independence, and autonomy, their motivation and self-confidence also increase, and this may contribute to higher reading performance among them.

In justifying the results of this study, Oxford's (1990) argument can be referred to according to which integrating explicit strategy instruction into classroom instruction helps learners become more efficient when learning a foreign language. More particularly, this increased efficiency in learners may have mediated the effect of explicit strategy instruction on EFL learners' reading comprehension. Meanwhile, it can be argued, referring to the previous studies (Arslan, 2015; Çakici, 2018; Choy & Cheah, 2009; Gurcay & Ferah, 2018; Kuhn & Dean, 2004; Magno, 2010), that higher-order thinking skills should be taught in long-term since short instructional courses do not suffice for developing metacognitive ability in participants. Based on Choy and Cheah's (2009) claims, since higher-order thinking skills involve a higher level of metacognitive knowledge and involve the use of higher levels of cognitive skills such as metacognition in the information process, the effectiveness of such skills cannot be expected in the short term.

The findings agree with the previous studies (e.g., Brevik, 2019; Grab, 2009; Graesser, 2007; Peña-Ayala, 2015; Tavakoli & Koosha, 2015) showing that explicit strategy instruction can yield significant improvements in the reading achievement of learners.

## CONCLUSION

To sum up, the findings provided further evidence for the role of explicit strategy instruction in reading performance, confirming the fact that strategy instruction can have facilitative and positive effects on reading performance. Therefore, the results can provide more explanation for the active role of EFL learners in reconstructing ideas/knowledge within their own minds and opens the door for a new approach to teaching reading based on Flavell's (1979) model of Cognitive Monitoring, Almasi's (2012) Good Strategy User Model, and Pressley and Afflerbach's (1995) Constructively Responsive Reading Model, the results can also clarify the nature of Vygotsky's Zone of Proximal Development. Learners' strategy awareness will help focus instructors' choices for strategy instruction. To this end, an assessment of students' level of strategy awareness and use and their strength and needs is of vital importance. The enhancement of metacognitive reading strategies in reading courses must be carried out regularly at the university level of education in Iran. EFL university students equipped with metacognitive skills will have the competitiveness and motivation to face the challenges of the fast-paced and digital development era, skills and critical thinking skills. Results indicated that teaching reading comprehension strategies as an explicit reading goal is necessary for our EFL university context.

The findings can contribute to the field of EFL pedagogy by providing empirically-grounded insights into cognitive processes that can inform EFL reading strategy instruction, materials development, and teacher education. The present study revealed that explicit strategy instruction seems to be a more promising alternative to HOTS-enhancing reading activities and conventional methods of teaching reading. As Vandergrift (1999) stated, teachers need to broaden their knowledge of strategy-based instruction, and metacognition, so that, they can incorporate them into their teaching. In other words, to achieve the present goal of reading and to develop strategic competence in readers, the methods teachers use to teach reading must be reconsidered. EFL university students should be encouraged to consciously and intentionally engage in reading strategies, making strategic activation more internalized and less demanding. Simultaneous and autonomous use of strategies can to some extent guarantee better reading achievement. The improvement of metacognitive awareness necessitates some

modifications in the instructional and curricular approaches to reading comprehension.

The current research had some limitations which need to be acknowledged. Convenient selection of one university, and confining to university students with intermediate level of language proficiency may affect the generalizability of the results, also, gender differences were not taken into account.

Reading materials were selected from a young adult novel. Since different genres of reading materials would produce different results, the participants might have utilized different types of reading strategies with different frequencies when reading different genres of text. Furthermore, the development of learners' strategy awareness and reading improvement was tracked only within a fourteen-week period of time. However, this fourteen-week intervention study would have provided more information to better understand the nature and effectiveness of strategy instruction if it had been supplemented with some degree of qualitative data.

Further empirical research is needed in determining how the two approaches to strategy instruction used in this study can create a coherent approach to L2 reading strategy instruction from a theoretical perspective and how they can find their ways to our L2 educational system effectively from a practical standpoint. Future studies could fruitfully explore this issue further by longitudinal strategy instruction studies to provide a full picture of learners' conceptual and cognitive development.

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