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THE EFFECTS OF METACOGNITIVE STRATEGY INSTRUCTION ON EFL STUDENTS' READING PROFICIENCY: A STUDY AT A UNIVERSITY IN VIETNAM

Tác động của hướng dẫn chiến lược siêu nhận thức lên khả năng đọc hiểu của sinh viên tiếng Anh: nghiên cứu tại một trường đại học ở Việt Nam

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ABSTRACT

This research examined how metacognitive strategy training (MSI) affects the reading performance of 63 EFL non-major students at Hanoi University of Science and Technology. The quasi-experimental study included two groups of students: an experimental group (EG) receiving MSI and a control group (CG) without receiving MSI. Pre- and post-tests were used to assess reading scores. Findings indicate that the EG's reading scores increased significantly from pre-test to post-test, meanwhile, the CG's reading proficiency did not increase. These data indicate MSI's favorable effect on reading proficiency. The research underscores the necessity for explicit MSI in teaching English. The results have significance for educational officials and suggest more studies into MSI's long-term impacts on learners' capacity of studying English.

Keywords: *Metacognitive Strategy Instruction (MSI), quasi-experimental design, reading proficiency.*

TÓM TẮT

Nghiên cứu tìm hiểu ảnh hưởng của việc sử dụng chiến lược siêu nhận thức (MSI) đến khả năng đọc hiểu của 63 sinh viên không chuyên tại ĐH Bách Khoa Hà Nội. Sinh viên được chia làm 2 nhóm: nhóm thử nghiệm (EG) được hướng dẫn áp dụng MSI trong quá trình đọc hiểu và nhóm kiểm soát (CG) được dạy kỹ năng đọc theo cách truyền thống. Công cụ thu thập dữ liệu là bài kiểm tra trước và sau thực nghiệm để đánh giá điểm đọc hiểu của 2 nhóm. Kết quả cho thấy điểm đọc hiểu của nhóm EG tăng đáng kể sau thời gian được đào tạo sử dụng MSI, trong khi đó điểm đọc hiểu của nhóm CG không tăng. Nghiên cứu nhấn mạnh sự cần thiết của việc hướng dẫn người học sử dụng các chiến lược siêu nhận thức. Kết quả có ý nghĩa quan trọng cho các nhà chức trách giáo dục và đề xuất thêm nhiều nghiên cứu về tác động lâu dài của MSI lên khả năng học tiếng Anh của sinh viên.

Từ khoá: *hướng dẫn sử dụng chiến lược siêu nhận thức (MSI), nghiên cứu bán thử nghiệm, khả năng đọc thành thạo.*

1. Introduction

In Vietnam, the demand for English language proficiency has consistently increased (Mui & Quyen, 2021; Ngoc, 2022), especially in the context of international language exams such as the International English Language Testing System (IELTS). Due to its unique format

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and stringent requirements, the IELTS reading section poses significant difficulties for Vietnamese students. In light of this, there is a growing interest in investigating effective instructional strategies that can improve the IELTS reading skills of Vietnamese students.

According to Mui and Quyen (2021) IELTS reading tests evaluate the comprehension and time management skills of students. First, IELTS reading passages are protracted and intricate, spanning a variety of topics and employing specialized terminology. This may be difficult for students who lack sufficient language or subject knowledge (Ahmadian et al., 2016). To comprehend the passage's main ideas, supporting material, and organization, reading skills are required. Second, time is of the essence. The sections of the IELTS reading test include questions which students are required to peruse them quickly and answer queries. The pressure to read quickly may interfere with comprehension. It may be tricky for students to devote sufficient attention to each section and question. The reading section of the IELTS is made more complicated by the variety of question categories. Students must answer multiple-choice, matching, and sentence completion queries, among others. Students may find it hard to adapt their approach to various question types while maintaining class participation. Ahmadian et al. (2016) illustrate that reading passages on the IELTS often contain distractions, inaccurate information, or opposing viewpoints. This deliberate inclusion of challenging elements tests students' ability to distinguish between relevant and unimportant information, uncover hidden meanings, and evaluate the text critically. Complexity may hinder student learning and make answering queries more challenging. Lastly, IELTS reading anxiety and performance pressure may have an effect on students' overall performance. Anxiety can impair concentration, reading speed, and comprehension, making it challenging for students to comprehend and respond to inquiries.

Understanding the IELTS reading issues of students is crucial for developing effective instructional strategies and solutions. Metacognitive approaches are an innovative method of instruction (Anderson, 2003; Iwai, 2011; Meniado, 2016; Ha, 2022). During the study, one uses metacognitive strategies to keep their thoughts under control. These instruments aid students in reading comprehension planning, evaluation, and improvement (Lawrence, 2009; Mokhtari et al., 2018). It is necessary to investigate the effects of metacognitive strategy education on IELTS reading comprehension. Students can improve their reading comprehension by monitoring and managing their cognitive processes while reading using metacognitive strategies. This study may shed light on the effect of metacognitive-strategy instruction on students' reading comprehension. The research contrasts metacognitive-strategy training with traditional reading education in terms of reading comprehension.

2. Literature review

2.1. Metacognition

Metacognition is the awareness and comprehension of one's cognitive processes, such as reasoning, learning, and problem-solving (Kimmin & Rahman, 2010; Pammu et al., 2014: Scoot, 2008). It entails the capacity to ruminate on and

control one's thoughts, knowledge, and strategies in order to improve learning and attain specific objectives. Self-directed learning, critical reasoning, and problem-solving skills rely heavily on metacognition.

Shen (2003) confirms that metacognitive processes are comprised of two primary elements: metacognitive knowledge and metacognitive regulation. In addition, Yaemtui (2015) advocates that metacognitive knowledge is the comprehension of how an individual learns and thinks. It consists of knowledge of one's own assets and limitations, awareness of various learning strategies, and knowledge of task requirements and the conditions that support effective learning. In contrast, metacognitive regulation is the active surveillance and control of one's cognitive processes (Zare-ee, 2007; Wang et al., 2009; Zhang & Seepho, 2013; Chen & Chen, 2015). It includes the ability to plan, establish objectives, monitor progress, and adjust based on feedback. Monitoring one's comprehension and learning outcomes also requires the use of self-assessment, self-reflection, and self-evaluation (Anderson, 2003).

Metacognition is an effective aid for students because it enables them to take an active role in their own learning. Students can make informed judgments about how to approach a task, choose appropriate strategies, and track their progress if they are aware of their thinking and learning strategies. Metacognition enables students to recognize when they are grappling or encountering problems, allowing them to employ the most effective strategies to overcome obstacles.

2.2. Theoretical frameworks of metacognitive strategy use

Oxford (1990) and O'Malley and Chamot (1990) propose two influential theories that have contributed to the comprehension of the use of metacognitive strategies in language acquisition. These theories emphasize the function of metacognition in language acquisition and provide instructional frameworks for teaching metacognitive strategies. Table 1 displays a simplified comparison between Oxford (1990) and O'Malley and Chamot (1990) on metacognitive strategy use in language learning.

Table 1. Metacognitive strategy use framed by Oxford (1990) and O'Malley and Chamot (1990)

	Oxford (1990)	**O'Malley and Chamot (1990)**
Theory	Metacognitive strategy use	Cognitive-affective model of learning
Focus	Learners' awareness and control of cognitive processes	Learners' cognitive and affective aspects of language learning
Components	Planning strategies Monitoring strategies Evaluating strategies	Cognitive strategies Metacognitive strategies Socio-affective strategies
Examples	Setting goals Organizing tasks	Making connections Inferencing

	Oxford (1990)	O'Malley and Chamot (1990)
	Selecting learning resources Summarizing main ideas Self-assessment Reflecting on learning outcomes	Note-taking Goal setting Self-questioning Seeking help from peers/ teachers Managing anxiety Seeking opportunities for language use
Application	Enhancing metacognitive skills in language learning	Developing strategic and autonomous language learners
Benefits	Improved comprehension and learning outcomes Transferability to various tasks and subject areas	Enhanced learning outcomes Increased learner autonomy Motivated and confident learners

In this investigation, the metacognitive strategy theory proposed by Oxford (1990) serves as the guiding framework. The Oxford's (1990) theory emphasizes the significance of awareness and control over cognitive processes in language acquisition. By incorporating metacognitive strategies, learners can actively engage in learning planning, monitoring, and evaluation, resulting in enhanced comprehension and enhanced learning outcomes. Oxford's (1990) theory provides a comprehensive comprehension of the use of metacognitive strategies by classifying them into planning, monitoring, and evaluating components. This framework corresponds well with the study's objectives, which are to examine the influence of metacognitive strategy instruction on students' reading comprehension in the context of the IELTS. Using Oxford's theory, the study can examine how the use of metacognitive strategies influences students' reading proficiency and contribute to the existing corpus of research on the use of metacognitive strategies in language acquisition.

2.3. Metacognitive Strategy Instruction in reading classes

In reading classes, Metacognitive Strategy Instruction (MSI) entails teaching students specific strategies to improve their metacognitive awareness and control during the reading process (Chen & Chen, 2015; Hieu & Huong, 2021; Wang et al., 2009; Pammu et al., 2014; Ngoc & Nhung, 2022). The objective is to provide students with the knowledge and skills they need to become more active, strategic, and independent readers. MSI introduces students to a variety of metacognitive strategies that enable them to monitor their comprehension, regulate their cognitive processes, and make informed decisions regarding their reading approach. Among these techniques are goal-setting, activating prior knowledge, making predictions, asking questions, summarizing, visualizing, and self-monitoring.

A crucial component of MSI is teaching students explicitly how to use these

strategies and providing opportunities for guided practice (Phuong, 2022; Minh & Nga, 2019). Teachers model the application of metacognitive strategies, demonstrate their benefits, and provide step-by-step instructions on how to effectively employ them. Students progressively internalize and implement these strategies independently through scaffolded instruction. Iwai (2011) presents that MSI involves encouraging metacognitive reflection and self-evaluation. Students are encouraged to evaluate their reading experiences, comprehension, and the efficacy of their strategies. This reflective practice assists students in identifying areas for development and modifying their reading strategies.

MSI integration in literacy classes has been demonstrated to have numerous advantages (Chen & Chen, 2015; Ha, 2022; Duc & Tinh, 2011; Scoot, 2008; Zhang & Seepho, 2013). First, it improves students' comprehension by providing them with a toolbox of efficient reading strategies. These techniques assist students in actively engaging with the text, making connections, monitoring their comprehension, and clarifying misconceptions. Second, MSI empowers students to assume responsibility for their own education. Students become more self-directed and accountable for their own learning when taught how to set objectives and make strategic decisions regarding their reading strategies. In addition, MSI encourages the transmission of skills outside the classroom. As students become adept at employing metacognitive strategies, they are able to apply them to a variety of reading assignments and subject areas. This transferability facilitates lifelong learning and helps students become more independent readers and learners. Teachers must provide explicit instruction, guided practice, and opportunities for independent application in order to effectively implement MSI. Regular formative assessments can be used to monitor students' development and provide individualized feedback to further improve their metacognitive abilities.

In conclusion, MSI in reading classes is an effective method for enhancing reading comprehension and fostering metacognitive awareness among students. MSI empowers students to be active, strategic, and independent readers by teaching them specific strategies and encouraging reflection. This method not only improves their literacy skills but also equips them with skills for lifelong learning that extend beyond the classroom.

2.4. Current situation of teaching reading in Vietnam

In the field of English language instruction in Vietnamese contexts, the significance of MSI in enhancing language learning outcomes is becoming increasingly apparent. Metacognitive strategies refer to the awareness and control of learners over their own cognitive processes, which enables them to plan, monitor, and assess their learning. In response to the growing demand for proficient English language skills, educators are actively investigating novel methods to promote the use of metacognitive strategies among students. By providing students with metacognitive strategies, they can become more independent, strategic, and reflective language learners capable of navigating the complexities of language acquisition. In light of these developments, it is crucial to investigate the current state of MSI in the

English classroom and assess its effect on language proficiency and overall learning experience in Vietnam. This study seeks to contribute to this field of study by investigating the effects of metacognitive strategy instruction on English language learning outcomes, focusing on reading comprehension. Through a comprehensive examination of MSI implemented in various Vietnamese institutions, valuable insights can be garnered that can inform pedagogical practices and optimize English language instruction for learners.

In the study conducted by Duc and Tinh (2011), the researchers sought to identify the cognitive and metacognitive strategies used most frequently by 196 English majors at Can Tho University during the reading process. Via the questionnaire, the students reported utilizing both cognitive and metacognitive reading strategies, according to the findings of this study. The "understanding" cognitive strategy was the most frequently employed by students. This suggests that students prioritize comprehension and focus on understanding the texts they read. Regarding metacognitive strategies, the study found that metacognitive planning strategies were utilized at level 4 by the majority of students, indicating a relatively high frequency of use. This finding suggests a positive relationship between metacognitive reading strategies and students' awareness, particularly among English majors. The authors recommend the use of metacognitive strategies in reading comprehension instruction for English majors based on their findings. They emphasized the significance of introducing students to specific metacognitive strategies in order to improve their comprehension and English language proficiency overall.

Minh and Nga (2019) analyzed the reading strategies employed by Vietnamese non-English majors at Kien Giang University during a test of reading comprehension. 117 sophomores in Economics, Accounting, and Construction participated in the survey. According to descriptive data, Vietnamese non-English majors employed some reading methods. Most frequently, students employed cognitive, metacognitive, and support reading strategies. Specifically, students reread the text to get a more comprehensive understanding at the highest level of frequency, meanwhile, they hardly determined what type of text it was. These results indicate that Vietnamese non-English majors utilize a variety of reading strategies for comprehension. Text comprehension and processing are highlighted by cognitive techniques. However, the decreased use of metacognitive and support methods indicates that there is room for improvement in higher-level thinking and support.

Hieu and Huong (2021) studied the problem-solving, global, and support reading strategies of English majors at the undergraduate level. A total of 123 Hong Bang International University students participated in an online survey for the study. Researchers used a reading comprehension test similar to the TOEIC to classify individuals as exceptional, average, or poor readers. The research concentrated on vital issues. First, students employed, on average, scholastic literature reading skills. Problem-solving reading strategies were the most popular, followed by support and global reading strategies. Students were conscious of their individual reading

strategies. Second, more women than males utilized coping mechanisms. Significant gender differences exist in literacy instruction and student assistance. The study found that students' reading proficiency may be a predictor of metacognitive awareness. Students with higher reading levels employed more reading strategies than those with lower reading levels. This highlights the need to adapt reading instruction and metacognitive awareness to the skill levels of students. The authors recommended that all three reading styles be taught to Vietnamese students in order to improve their reading skills. This strategy improves students' metacognition and formal reading comprehension.

Ha (2022) investigated the reading strategies employed by Vietnamese non-English major tertiary students when reading English level 3 texts and their perceptions of the impact of instruction. The study used both qualitative and quantitative research methods, including questionnaires, semi-structured interviews, and learning reflections. The results showed that the instruction had both cognitive and non-cognitive benefits. From a cognitive perspective, the students reported heightened awareness of using reading strategies, expanded reading strategy repertoire and employment, greater reading fluency, and higher reading scores. From a non-cognitive perspective, the students reported added affective values such as greater reading confidence, motivation, and autonomy.

Ngoc and Nhung (2022) investigated how high- and low-achieving students at the Faculty of Foreign Languages of a Vietnamese university use metacognitive reading strategies to comprehend English reading texts. Combining the MARSI Scale questionnaire and semi-structured interviews, a hybrid research methodology was employed. Forty-two English majors completed the questionnaire, and representatives from the high-achieving and low-achieving groups participated in the semi-structured interviews to provide additional detail. Students' utilization of metacognitive reading strategy groups for comprehension reading varied according to the study's findings. In addition, the results revealed the variable frequency with which each metacognitive reading strategy was employed by high- and low-achieving students.

The goal of Phuong's (2022) research was to find out how often first-year students at Vietnam National University of Agriculture employ metacognitive reading methods to improve their reading abilities. According to the results, the frequency of adopting metacognitive reading methods such as preparatory organization strategy directed attention strategy, selective attention strategy, self-monitoring strategy, and self-assessing strategy was low. According to the findings, teaching reading strategies in general, and metacognitive reading strategies in particular, might increase students' awareness of the use of reading techniques while understanding and answering questions about texts.

Ngoc (2022) examined the relationship between the use of metacognitive reading strategies and performance in reading comprehension among non-English majors at Dong Nai Technology University in Vietnam. The research included 70 students and employed both quantitative and qualitative methods of data collection.

Students employed metacognitive reading strategies at a moderate level, with problem-solving and global strategies being the most and least frequently employed strategies, respectively. Furthermore, it was discovered that proficient readers employed metacognitive strategies more frequently, successfully, and appropriately than less proficient readers. In second language acquisition, the study suggests that instructors and students should employ appropriate metacognitive reading strategies.

The above studies have contributed to the understanding of students' metacognitive reading strategies, including their frequency of use, the types of strategies employed, and students' perceptions of their use. However, there is still a research gap in terms of exploring the impact of metacognitive strategies on students' reading proficiency. While some studies have indicated a positive correlation between metacognitive strategy use and reading performance, few studies have specifically examined the effects of metacognitive strategy instruction on students' reading proficiency. The current study aims to address this gap by exploring the impacts of metacognitive strategy instruction on the experimental group's reading proficiency, compared to a control group that did not receive such instruction. This will provide further insights into the effectiveness of metacognitive strategy instruction and contribute to the development of evidence-based teaching practices.

3. Methodology

3.1. Research design

This research on the effectiveness of metacognitive methods in IELTS reading lessons used a quasi-experimental approach due to the fact that quasi-experimental designs usually reflect real classroom situations. The study aims to examine treatments' effects in real-world situations, analogous to IELTS reading lessons. Researchers may better understand the consequences of metacognitive methods and their effectiveness in the real-world setting of IELTS reading lessons by using a quasi-experimental methodology.

Ethical issues are also important when deciding on a quasi-experimental design. Ethical questions may arise when randomly assigning students to control and experimental groups in some educational settings. Refusing an intervention that might help others could be immoral. Researchers may test the intervention's effectiveness by giving it to all participants in a quasi-experimental design and then comparing the results across groups. This approach makes it possible to think about and research the ethical implications of the intervention.

Additionally, quasi-experimental approaches might expand a study's generalizability. By including a wider variety of participants and situations, researchers may boost the relevance of their results to real-world IELTS reading classrooms and to a larger population of students, as opposed to highly controlled experimental methods. The results of the study will have a greater impact on the classroom if metacognitive tactics are used.

Finally, where group structures already exist, quasi-experimental designs may be useful. Participants could already fall into distinct groups due to preexisting institutional or societal divisions. Researchers might make use of the preexisting structure by using these

categories inside a quasi-experimental design to examine the effects of the metacognitive intervention.

While not as reliable as randomized controlled trials, quasi-experimental approaches nonetheless provide useful information about the impact of educational interventions in real-world contexts. Researchers should be aware of the caveats of quasi-experimental methods, interpret and present findings cautiously, and look for other potential causes of observed effects. As a whole, studying the effectiveness of MSI in IELTS reading lessons using a quasi-experimental methodology is a feasible and moral option.

3.2. Setting and participants

This study was carried out at the prestigious Hanoi University of Science and Technology (HUST). In all, 63 students (47 males and 16 females) participated in the research. HUST corporates in a wide variety of academic fields and intellectual interests. Individuals who willingly signed up for IELTS reading lessons were recruited as participants. Students chose these sessions to improve their reading abilities and expect to get a band score of 5.5 on the IELTS reading proficiency. The students were divided into two groups, including the experimental group (EG, 32 students) and the control one (CG, 31 ones).

This research may benefit from a vast variety of experiences and opinions due to the various demographics of the participants. The multidisciplinary viewpoints of the research's participants might aid the study in two areas: reading comprehension and learning strategies.

3.3. Data collection instruments

Using pre- and post-tests, this study investigates how various metacognitive approaches enhance IELTS reading comprehension. The efficacy of metacognitive approaches can be determined by comparing the pre- and post-intervention reading test scores of participants.

The researcher administered the tests using the IELTS reading format, a widely accepted method of standardizing the evaluation of English language proficiency. "Improve Your IELTS Reading Skills" by Sam McCarter and Norman Whitby, published in 2007; and "IELTS Reading Recent Actual Test" by New Channel International Education Group published in 2012, were utilized to standardize the test's framework. This is official IELTS reading material, prepared to the same standards and difficulty level as the actual examination. The IELTS reading section is typically divided into five sections, each with its own reading passage. Participants are required to respond to forty queries based on the texts. Reading the materials and answering related questions will consume 60 minutes of the allotted time for the examination. This format closely resembles the actual IELTS reading examination that students take, so the test is both accurate and informative. Using this standardized test format, the researchers can evaluate the reading ability of the participants in a manner consistent with the internationally renowned IELTS reading exam. This method provides a consistent basis for evaluating the impact of MSI on IELTS reading performance and permits direct evaluation of participants' reading comprehension skills.

Employing pre- and post-tests based on the IELTS reading format and obtained from reputable sources guarantees the overall legitimacy and validity of the data

collection method. Due to the incorporation of diverse texts and question categories, participants' reading skills can be accurately assessed in a brief period of time. Thanks to this standardized method, researchers can analyze the impact of participants' metacognitive strategies on their performance in the IELTS reading section with greater precision.

3.4. The procedure of the research

This study examines the effectiveness of integrating metacognitive strategies into IELTS reading instruction. Here is how it operates:

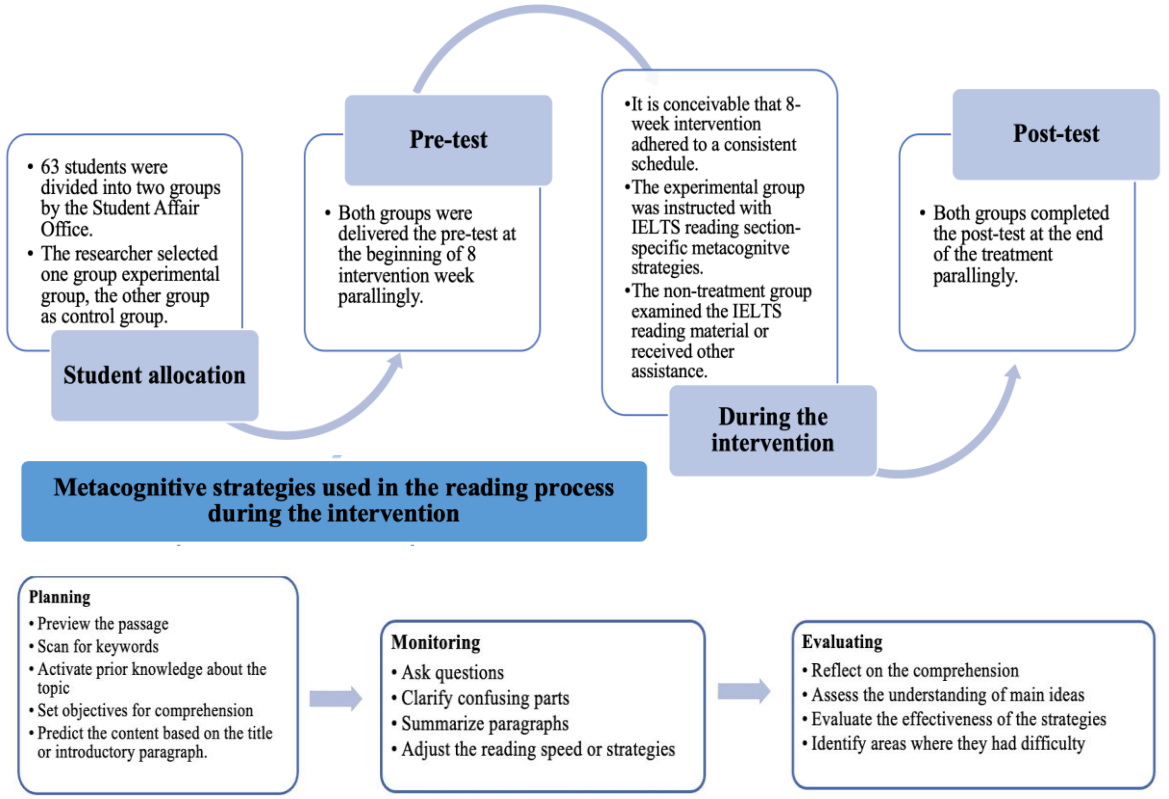


Figure 1. The process of student allocation and data collection

After collecting the post-test data, the researcher conducted the process of data analysis a and interpretation. Overall, the study follows a systematic procedure and this rigorous approach ensures a comprehensive investigation of the effectiveness of metacognitive strategies.

3.5. Data analysis

SPSS 25.0 was used to analyze the data collected from the pre- and post-test results of the participants. In order to further summarize the data, descriptive statistics were calculated. Before and after test, results were analyzed using means, standard deviations, and other appropriate statistics. These measures of central tendency and dispersion assisted in describing the data and shed light on pre-intervention and post-intervention performance levels. Within each cohort, the paired samples t-test was used to compare pre- and post-test results. Using this statistical technique, we could determine whether discernible differences existed between the two intervals for each

cohort. The paired samples t-test was used to determine whether or not the intervention led to a statistically significant increase in the literacy levels of the participants.

Standardization assures the reliability and validity of the study's evaluations. It involves developing examinations based on standards. Researchers can verify the reliability and validity of reading proficiency assessments by utilizing credible sources and scholarly works related to the investigated construct. These sources guide the development of test items and ensure that their content and format adhere to industry standards. Tests used in the study were homogenized from "Improve Your IELTS Reading Skills" by Sam McCarter and Norman Whitby and "IELTS Reading Recent Actual Test" by New Channel International Education Group. Hence, those tests guaranteed standardization.

Moreover, before evaluating individuals, pilot evaluations are necessary. This requires evaluating a limited number of comparable individuals. Pilot testing identifies defects and ambiguities in test items. Researchers may scrutinize the lucidity and relevance of questions to ensure that participants can comprehend and provide appropriate responses. Pilot testing allows for the modification of test items to improve reliability and validity. In the current study, ten students were selected randomly to complete the pilot tests at the beginning of the intervention. The test results were collected and analyzed by two other lecturers and then modified to eliminate defects and ambiguities.

In addition, to ensure consistency and uniformity, all participants must complete the examinations in the same manner and timeframe. Consistency in test administration procedures ensures that all test takers encounter identical testing conditions. This prevents bias and error that could compromise the results' reliability and validity. Researchers can increase the reliability and validity of pre- and post-test data by adhering to standardized test administration protocols. All the participants were required to take the tests at the scheduled time in class, under the supervision of two lecturers.

3.6. Research Hypotheses

As indicated, the efficacy of the MSI is investigated by comparing post-test scores between the EG and CG. The hypothesis predicts that EG will outperform CG on the post-test after receiving the metacognitive intervention. This hypothesis is based on the belief that incorporating metacognitive methods into the intervention will enhance the literacy skills of the target population. The EG, which will receive instruction and practice in metacognitive skills such as comprehension monitoring, self-evaluating, and goal planning, is predicted to have enhanced reading comprehension.

4. Findings and discussions

4.1. Findings on the impacts of metacognitive strategy use on students' reading proficiency

A paired samples t-test was deployed to correlate the outcomes of two groups in terms of pre- and post-tests. Table 2 demonstrates the comparison within Pair 1 (pre- and post-test of the EG) and Pair 2 (pre- and post-test of the CG).

Table 2. Descriptive statistics and pair-sample t-tests correlate pre- and post-tests of EG and CG

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_EG	4.2500	32	.64758	.11448
	Post_EG	4.9063	32	.61484	.10869
Pair 2	Pre_CG	4.0000	31	.75277	.13520
	Post_CG	4.0484	31	.63711	.11443

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre_EG & Post_EG	32	.648	.000
Pair 2	Pre_CG & Post_CG	31	.573	.001

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre_EG - Post_EG	-.65625	.53033	.09375	-.84745	-.46505	-7.000	31	.000
Pair 2	Pre_CG - Post_CG	-.04839	.65006	.11675	-.28683	.19006	-.414	30	.682

The average pre-test score for Pair 1 was 4.250 (SD = 0.64758) and the average post-test score was 4.9063 (SD = 0.61484). The correlation between the Pre_EG group's pre- and post-test scores was positive and statistically significant (r = 0.64, p = 0.001). The paired samples t-test revealed a statistically significant difference between the Pre_EG group's pre- and post-test scores (t(31) = -7,000, p 0.001). The 95% confidence interval for the mean difference was (-0.84745, -0.46505), with a 95% confidence level of (-0.65625). These results suggest that the MSI significantly

improved the reading scores of the EG.

The average pre-test score for Pair 2 (Pre_CG and Post_CG) was 4.000 (SD = 0.75277), while the average post-test score was 4.0484 (SD = 0.63711). The correlation between the pre- and post-test scores of the Pre_CG group was positive and statistically significant (r = 0.573, p = 0.001). In contrast, the statistics of a paired samples t-test revealed no significant difference between the CG's pre- and post-test scores (t (30) = -0.414, p = 0.68). The 95% confidence interval for the mean difference of -0.04839 (SE = 0.11675) ranged from -0.28683 to 0.19006. It is indicated that the CG did not demonstrate any discernible improvement in reading ability.

The statistics indicate that the MSI significantly improved the reading scores of the EG. Whereas, the literacy scores of the Pre_CG and Post_CG did not improve significantly. The results support the hypothesis that the metacognitive intervention benefited EG readers more than those in the CG.

4.2. Discussion

Comparing these findings to those of other studies, these results are compatible with Ngoc's (2022) study, which also discovered a considerable improvement in reading scores among students who received instruction in metacognitive strategies. Both studies demonstrate the positive effect of metacognitive strategies on reading ability.

However, the results differ from the studies conducted by Ha (2022), Phuong (2022), Ngoc and Nhung (2022), Hieu and Huong (2021), Minh and Nga (2019), and Duc and Tinh (2011), as these studies primarily explored the types of metacognitive strategies employed by students and their perceptions, as opposed to investigating the influences of these strategies on reading proficiency. Therefore, the current study addresses a lacuna in the literature review by providing empirical evidence for the efficacy of metacognitive strategy instruction in enhancing reading scores.

Noting that each study's participants, context, and specific research strategies may vary, which may contribute to varying results, is essential. Notwithstanding, the consistent finding of the current research and Ngoc (2022) regarding the positive impact of metacognitive strategy instruction strengthens the overall body of research supporting the efficacy of these interventions in improving reading proficiency.

5. Conclusions, limitations, implications, and recommendations

The findings of this study suggest that metacognitive strategy instruction (MSI) can significantly enhance students' reading proficiency. The EG that received the MSI intervention demonstrated a statistically significant improvement in their reading scores, whereas the CG did not demonstrate any significant improvement. The significance of explicit instruction in metacognitive strategies to improve reading abilities is supported by these findings. The implications of this study for educators,

administrators, and researchers in the field of literacy education are substantial. A limitation of this study is the tiny sample size, which may limit the findings' applicability to larger populations. In addition, the study was conducted within a particular cultural and linguistic context, which may limit the generalizability of the results. To confirm the findings of this study and investigate the effects of MSI in various

contexts, additional research with larger and more diverse samples is required.

According to the findings of this research, specific education in metacognitive methods should be emphasized in order to increase students' reading competency. Policymakers should consider the importance of teaching metacognitive techniques when developing literacy programs and policies. Further study should be conducted to investigate the long-term impacts of MSI on students' reading ability, as well as the possible advantages of combining MSI with other literacy treatments. It is recommended that educators incorporate explicit instruction in metacognitive strategies into their teaching practices based on the findings of this study. In addition to providing opportunities for self-reflection and self-evaluation, educators can encourage students to develop metacognitive skills. Policymakers can support the implementation of MSI programs in schools by providing instructors with the necessary resources and training. Lastly, additional research should explore the potential benefits of integrating MSI with other literacy interventions and the effects of MSI on different student subgroups

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