"A Training Program in Learning Metacognitive Strategies in English to Improve Reading Comprehension for Low-achievers in Preparatory Schools".

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Abstract

The primary aim of the research was to investigate the effect of a training program based on metacognitive strategies for enhancing reading comprehension among low-achieving students and to explore the correlation between students' use of metacognitive strategies and their comprehension levels. The study critiques prevailing pedagogical practices in EFL preparatory schools, emphasizing the hindrance of active student engagement in reading tasks due to the persistence of traditional teaching methods. To identify crucial reading comprehension skills requiring development among low-achievers, a meticulously constructed checklist, validated by an expert panel in EFL teaching and learning, was employed. This checklist informed the creation of a pre-/post-reading comprehension test. The quasi-experimental design employed in the study reveals statistically significant improvements in overall reading comprehension and sub-skills among participants exposed to the metacognitive strategies program. The study recommends integrating this program into preparatory education, underscoring the importance of considering individual differences and learning styles. English language educators are encouraged to incorporate metacognitive strategies into their teaching methodologies, considering the diverse profiles of Egyptian EFL preparatory school students. Overall, the research provides valuable insights into addressing reading comprehension challenges and suggests practical strategies for pedagogical improvement in EFL contexts.

Key words: Metacognitive Strategies; Reading Comprehension; Low-achievers; Preparatory Schools

" برنامج تدريبى فى تعلم استراتيجيات ما وراء المعرفة لتنمية مهارة الفهم القرائى باللغة الإنجليزية لطلاب المرحلة الإعدادية منخفضى التحصيل"

بحث مقدم (مناهج وطرق تدريس اللغة الإنجليزية)

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دكتوراه الفلسفة في التربية

مناهج وطرق تدريس اللغة الإنجليزية كلغة أجنبية

المعهد العالي للغات والترجمة

جـــــــامعة:6 أكتوبر

الملخص العربى

تتناول الدراسة الدور الحاسم لمهارات الفهم القرائي في سياق تعلم اللغة الإنجليزية كلغة أجنبية (EFL)، مستهدفًا بشكل خاص طلاب المرحلة الإعدادية في السنة الثانية الذين يعانون من تحصيل منخفض. يتناول البحث مجموعة من العوامل التي تسهم في نقص مهاراتهم، مثل الخصائص الفطرية والعمليات الإدراكية والسلوكيات غير الإستراتيجية. يُقدم البحث برنامجًا للتدريب قائم على استراتيجيات ما وراء المعرفة، يتسم بأنشطة محفزة قبل القراءة وأثناءها وبعدها، بهدف غرس وتنشيط المعرفة الأساسية لتفسير النصوص و تعزيز فهم القراءة بين الطلاب ذوي التحصيل المنخفض، واستكشاف العلاقة بين استخدام الطلاب لاستراتيجيات ما وراء المعرفة ومستويات فهمهم. ينتقد البحث بعض الممارسات التربوية السائدة لتعلم اللغة الإنجليزية والتي تعرقل مشاركة الطلاب الفعّالة في مهام القراءة نتيجة استمرار أساليب التدريس التقليدية.ومن أجل تحديد المهارات الأساسية للفهم القرائي التي يحتاجها الطلاب ذوي التحصيل المنخفض، تم استخدام لائحة تم إعدادها بدقة واعتمدتها لجنة من الخبراء في تدريس وتعلم اللغة الإنجليزية. هذه اللائحة ساهمت في إعداد اختبار الفهم القرائي القبلي والبعدى. التصميم شبه التجريبي الذي اعتمدته الدراسة يكشف عن تحسينات إحصائية ملحوظة في الفهم القرائي العام والمهارات الفرعية بين المشاركين الذين تعرضوا لبرنامج استراتيجيات ما وراء المعرفة. كما.يُوصي البحث بدمج هذا البرنامج في التعليم للمرحلة الإعدادية، مُشددًا على أهمية مراعاة الفروق الفردية وأساليب التعلم. بالإضافة إلى تحفيز معلمو اللغة الإنجليزية على دمج استراتيجيات ما وراء المعرفة في أساليب تدريسهم، مع مراعاة تنوع ملامح الطلاب ذوي التحصيل المنخفض لتعلم اللغة الإنجليزية في مصر. بشكل عام، يقدم البحث رؤى قيمة حول كيفية التعامل مع تحديات فهم القراءة ويقترح استراتيجيات عملية لتحسين التدريس في سياقات تعلم اللغة الإنجليزية كلغة أجنبية.

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1. Introduction

Learning foreign languages contributes to increasing the opportunities to interact and understand other cultures. Besides, English becomes an international language that is widely used for different reasons. Therefore, there is a vital need to become proficient English language learners and to success in academic contexts as well as in practical life. The most important language skill of learning foreign languages is reading comprehension. Advances in linguistic theory and cognitive psychology have enabled learning reading to comprehended to be one of the major developmental tasks to be mastered. As the educational process continues, reading comprehension becomes more and more important in student's ability to acquire knowledge and learn independently.

Reading is a process of constructing meaning from a context. As Parker (2019) point out, reading is not word calling or "sounding out", but a special form of reasoning in which both the reader and the writer contribute perspective, inference, and logic. Thus, reading reveals itself as a marvelously complex process, in which many cognitive activities should occur simultaneously. Moreover, Reading has a significant role in learning a foreign language. Barus, et al. (2021) claims that "Students read to understand the meaning of written materials. This search for meaning, the process of comprehension, depends on both the writer and the reader".

Therefore, reading provides experience through which the individual may expand his horizons and gain deeper understanding of himself and of other human-beings. In addition, Stahl and King (2020) claim that "emphasis is now being placed on understanding the internal process involved in reading, that is, what the reader does while reading. Earlier, the emphasis was more on the products of reading". The main purpose for reading is not to recognize words but to comprehend and construct meaning of the concepts described in a text and relate them to the previous experiences.

The significance of learning strategies , as stated by Guimarães and Lima (2021), "stems from the observation that learning is an active and dynamic process in which learners approach new tasks strategically, analyze task requirement, apply various mental processes appropriate to the task and reflect on the success of their attainment "Furthermore, students who use different learning strategies will transfer the use of strategies to similar tasks and become more independent and confident learners. As a result, students become more motivated as they begin to understand the relationship between their use of strategies and success in learning English. Tran (2020) argues that "strategies are especially important for language learning because they are tools for active, self-directed involvement, which is essential for developing communicative competence. Appropriate language learning strategies result in improved proficiency and greater self-directed."

Moreover, Rahmawati (2020) argues that using appropriate strategies for various reading tasks increases comprehension, but acquiring an array of strategies is a long and difficult process. Nevertheless, such strategies as skimming for main idea, scanning for specific information, predicting what a text is about or what will happen next, and making use of the context and illustrations to discover word meanings are critical for English language learners beyond the beginning level". Samperio (2019) has defined the learning strategies as "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self -directed, more effective, and more transferable to new situations". Awareness of readers own mental activity is referred to as "metacognition". Awareness of one's own comprehension strategies or the process being used to comprehend texts, is referred to as the metacognitive aspect of reading (Lesort et al, 2020). Therefore, metacognition strategies are considered, as Samperio asserts "indirect learning strategies. They allow learners to control their own cognition that is, to coordinate the learning process by using functions such as a centering, arranging planning, and evaluating".

Sult (2023) asserts that researchers have empirically developed and implemented specific strategy-training efforts aimed at enhancing the performance of students with learning disabilities and those who struggle academically. These efforts generally involve teaching, guiding, or prompting students to establish goals, choose appropriate procedures, and monitor progress towards achieving goals to meet task demands. Similarly, Samperio, (2019) contends that low-achieving students can

effectively learn various metacognitive strategies, including task planning, monitoring comprehension, and evaluating progress. Furthermore, Stanton et al (2021) argues that metacognition goes beyond cognition by enabling individuals not only to use specific strategies but also to be aware of the significance of these strategies and how to assess them.

Idris (2022).asserts that additional metacognitive strategies, such as organizing, setting goals and objectives, considering the purpose, and planning for a language task, assist learners in arranging and planning their language learning in an efficient and effective manner. Cognitive and metacognitive strategies play a pivotal role in enhancing learning. Learners utilize cognitive strategies to make progress, and they employ metacognitive strategies to monitor that progress Tunga (2021). Similarly, Dörr and Perels (2019) affirm that children who undergo metacognitive training demonstrate improved awareness and reading skills. To conclude, low-achieving readers can make substantial progress following instruction in both metacognitive skills and coping strategies.

l.2 Background of the problem

Despite the critical significance of metacognitive strategies training for reading comprehension, aiming to cultivate independent readers adept at articulating their learning processes, current practices have not accorded sufficient attention to these strategies, resulting in a notably low level of reading proficiency. Second-year preparatory stage students exhibit deficiencies in reading comprehension skills, characterized by slow reading pace and challenges in identifying main ideas and predicting outcomes. Evidence of the problem was identified by

- **Previous Studies:** Findings and recommendations from studies by Kianinezhad (2023), Bukhari, et al. (2023), Gamal (2020), El-Didi (2001), Abou-Hadid (2002), Abdel Moaty (2002) and Abdel Rehim (1993) underscore the neglect of EFL reading comprehension skills in Egyptian classrooms, emphasizing the need for improved teaching strategies to enhance these skills.
- **Observations:** Classroom observations in some Egyptian EFL second-year preparatory school classes reveal deficiencies in teachers' understanding of the importance of pre- and during-reading activities, neglect of visual aids, a lack of diverse and motivating activities for students, and assessment focused solely on the literal level.

- **Interviews:** Discussions with EFL preparatory stage head teachers and supervisors reveal a shared desire for enhanced teaching strategies to boost student motivation and active engagement in reading tasks. They also note that students possess the ability to learn but lack comprehension, meaning construction, main idea identification, and conclusion-drawing skills.
- **Teacher Practices:** Interviews with teachers indicate a prevalent practice of translating words into Arabic and writing them on the board, followed by reading the text and answering questions from the Pupil's Book.
- **Students' Perspectives:** Students' interviews have emphasized the practice of reading word by word, confusion in the absence of a title, skipping difficult words, and focusing on locating words related to questions without seeking meaning.
- **Pilot Study:** The primary aim of this pilot study was to explore the reading comprehension strategies employed by second-year preparatory students. The study sought to understand the prevalence of word-by-word reading and the extent of limited comprehension strategies among this student population.

Description of the Test: The reading comprehension test was administered to a sample of second-year preparatory students. The test consisted of a series of passages selected to represent the complexity and diversity of texts encountered in their academic curriculum. The passages covered various subjects to ensure a comprehensive assessment of reading comprehension skills. The test included multiple-choice questions, open-ended questions, and tasks that require inferential reasoning. Additionally, students were asked to articulate their approach to reading and answer questions related to the strategies they employ while comprehending the passages.

Results: Upon analyzing the results of the reading comprehension test, the following findings are highlighted:

1. **Prevalence of Word-by-Word Reading:** A significant portion (83.5%) of the second-year preparatory students demonstrated a tendency to read word by word, indicating a potential reliance on decoding rather than employing higher-level comprehension strategies.
2. **Limited Comprehension Strategies:** The majority of students exhibited limited utilization of comprehension strategies beyond

basic decoding. Inferential reasoning, summarization, and critical analysis were notably underutilized.

3. **Identified Challenges:** Common challenges were observed included difficulties in extracting main ideas, making inferences, and connecting information across passages.

4. **Implications for Further Research:** The results suggested a need for further investigation into effective teaching strategies that promote comprehensive reading skills among second-year preparatory students. The pilot study established the foundation for a more comprehensive research project focused on implementing targeted interventions to enhance reading comprehension strategies among this student population.

Collectively, these factors underscore a pressing need for the incorporation of strategies in English language reading comprehension. The observed low level of performance reflects a deficiency in employing metacognitive learning strategies, prompting the aim of this study that is designing a metacognitive strategies program to enhance reading comprehension for low-achieving readers in the second year of preparatory school.

1.3 Statement of the problem

There was a low level of reading comprehension among students at the second year of preparatory governmental schools. They were poor mastery of the necessary EFL reading comprehension skills. They were not proficient in reading tasks. They were poor readers and consequently they are poor comprehenders. To the researcher's best knowledge, there was a vital need for a research to improve reading comprehension for low-achieving students at the preparatory stage in Egypt. According to, the effectiveness of metacognitive strategies in developing reading comprehension, there was an urgent need to provide a training program in learning metacognitive reading strategies to improve reading comprehension for low-achievers in preparatory schools.

1.4 The Research Questions

More specifically, this study sought to answer the following main question:

"What is the effect of a proposed training program in learning metacognitive strategies on improving the reading comprehension skills of low- achievers at the second year preparatory schools?"

This main question was divided into the following sub-questions:

a) What are the EFL reading comprehension skills necessary for low-achievers at the second year preparatory school?

b) What are the metacognitive reading strategies that best suit low-achievers?

c) What are the features of a training program designed in the light of metacognitive strategies to improve the EFL reading comprehension skills?

d) What is the effect of a training program on improving low-achiever students over all EFL reading comprehension skill?

e) What is the effect of a training program on improving low-achiever students' literal, inferential and critical EFL reading comprehension skills?

f) What is the significant relationship between the metacognitive reading strategies and the low-achievers' level of reading comprehension?

1.5 The research hypotheses

To examine the study's problem, the following five hypotheses were testified:

1. There are significant statistical differences between the mean scores of pre and post reading comprehension tests of the experimental group in favor of the post- tests scores.

2. There are significant statistical differences between the mean scores of the pre and post (literal, inferential and critical) reading comprehension skills of the experimental group in favor of the past-tests scores.

3. There are significant statistical differences between the mean scores of the experimental and control groups on the post reading comprehension tests in favor of the scores of the experimental group.

4. There are significant statistical differences between the mean scores of the experimental and control group on the post (literal, inferential and critical) reading comprehension skills in favor of the scores of the experimental group.

5. There is a significant positive correlation between the metacognitive reading strategies and low-achievers' achievement level of reading comprehension skills as measured by reading comprehension tests.

1.6 Variable of the study

Independent variable: This refers to the treatment used in the study (the training program in learning metacognitive strategies implement with the experimental group versus the regular instruction received by the control group).

Dependent variable: This refers to the experimental group students' performance in reading comprehension with its different literal, inference and critical comprehension sub-skills.

1.7 Delimitation

The study's scope was delimited in several dimensions. Firstly, the experimentation was restricted to second-year low-achieving readers within a preparatory governmental school in Cairo at the academic year 2003/2004. Additionally, the focus of the experimentation was narrowed down to the application of specific metacognitive strategies, namely Semantic Mapping, Experience-Text Relationship, Generating Questions, Self-Monitoring, and Prediction, all targeted at improving reading comprehension.

2. Review of related literature

The existing literature extensively examines factors affecting low-achieving students in reading classes, focusing on theoretical frameworks that emphasize the use of metacognitive strategies for English as a Foreign Language (EFL) learning. The primary concern is the development of reading comprehension skills, the main focus of the current study. The section categorizes relevant studies and concludes by explaining how the present study builds on and differs from previous research in this field under the subsequent headings:

2.1 Components and Complexity of Reading Comprehension

Reading comprehension, deemed the "essence of reading" by Smith et al.(2021), stands as a fundamental skill essential not only for learning across various subjects but also for lifelong learning. Defined by White (2022) as "intentional thinking during which meaning is constructed through interactions between text and reader," reading comprehension goes beyond word recognition to encompass understanding and learning concepts within a text. It involves a complex process influenced by one's background, including language, cognitive domains, social experience, and emotional development. Torres (2019) identifies factors within the reader affecting comprehension, such as prior knowledge, interest in the subject, purpose for reading, and decoding ability. Reading is an active

search for meaning, requiring interactive processes and strategies related to the reader's purpose. Saux, G., Britt et al.(2021) highlights that reading comprehension integrates information from various sources, combining visual, auditory, semantic, conceptual, and linguistic aspects.

Reading comprehension is a multifaceted process influenced by various components, reflecting the intricate nature of cognitive engagement with written information. These components contribute to the complexity of reading comprehension, encompassing linguistic, cognitive, social, and emotional dimensions. Firstly, **Linguistic Components** involve decoding written language, understanding vocabulary, and deciphering grammatical structures. Fluent decoding allows readers to recognize words effortlessly, facilitating the overall comprehension process (Paige, 2020). **Secondly, Cognitive Components** play a pivotal role in reading comprehension. Prior knowledge, often referred to as schema or mental models, serves as a foundation for interpreting new information (Barbara, 2003:38).

Readers actively construct mental representations based on their existing knowledge during the comprehension process (Saux et al, 2021). Thirdly, Social experiences contribute to readers' comprehension abilities. Cultural background, societal context, and shared experiences shape the reader's understanding of the text. Reading comprehension is not isolated from the socio-cultural context in which the reader exists (Arya & Maul, 2021). Fourthly, emotional development can impact reading comprehension. A reader's emotional state, motivation, and attitude toward the material can influence the level of engagement and, consequently, comprehension. Lastly, Readers bring their prior knowledge to the reading process, significantly affecting comprehension. The reader's ability to connect new information with existing knowledge enhances understanding (Amjadi & Talebi, 2021). This emphasizes the importance of activating and building on prior knowledge for effective comprehension.

The interplay of these components adds layers of complexity to the reading comprehension process. Readers must seamlessly integrate linguistic skills, cognitive abilities, social awareness, and emotional considerations to construct meaning from the text. Understanding the intricate relationship between these components is essential for educators and researchers seeking to enhance reading comprehension strategies.

Reading comprehension operates at different levels, including literal comprehension, interpretive reading, and critical reading. Literal comprehension involves understanding the author's words and meanings, extending from words to paragraphs and whole selections. Interpretive reading requires distinguishing between facts and opinions, relating information to personal experiences, and evaluating literary value. Critical reading involves analyzing and evaluating the material, arranging the author's ideas, and extending their scope.

Various models attempt to explain reading comprehension, broadly categorized into data-driven (bottom-up), conceptually driven (top-down), and interactive processing models. Data-driven models emphasize decoding and stringing together word meanings. Conceptually driven models highlight the role of prior knowledge, emphasizing readers' expectations and background knowledge in determining comprehension. Interactive models incorporate both top-down and bottom-up processing, viewing reading as a simultaneous cognitive process. The review of these models sheds light on the processes involved in constructing meaning from text materials and the interaction between text and reader knowledge to form a unique representation of meaning.

2.2 Schema theory view of reading comprehension

Schema theory offers a valuable perspective on reading comprehension, emphasizing the role of prior knowledge in the process of understanding and interpreting text. According to this theory, readers actively construct meaning by integrating new information with existing cognitive structures or mental frameworks called "schemas." Schemas are organized structures of knowledge that individuals develop through their experiences, background, and cultural context. In the realm of reading comprehension, schema theory delineates foundational principles that profoundly influence the cognitive processes involved. Firstly, the theory posits the **Activation of Schemas** as a pivotal component. When individuals immerse themselves in a text, relevant schemas are invoked, providing a cognitive framework for interpretation. These activated schemas, rooted in prior knowledge, serve as a lens through which readers make sense of presented information, fostering meaningful connections. The centrality of **Prior Knowledge** is another hallmark of schema theory. Readers bring their unique life experiences, beliefs, and cultural contexts, influencing the comprehension process. The richness and relevance of existing schemas significantly impact the effectiveness

of comprehension, highlighting the symbiotic relationship between prior knowledge and understanding.

Schema theory conceptualizes reading as a Top-Down Processing phenomenon, emphasizing the role of higher-order cognitive processes in guiding comprehension (Darwiche, 2020). Expectations, predictions, and interpretations shape understanding, deviating from the reliance on explicit text features seen in bottom-up processing (Oza et al, 2021). The theory highlights Schema Modification, a dynamic process wherein individuals adapt their mental frameworks to assimilate new information, crucial for nuanced comprehension (Leschziner & Brett, 2021). Acknowledging Cultural and Individual Differences, schema theory recognizes diversity in background knowledge, impacting interpretation and calling for tailored reading instruction.

The concept of Schema-Driven Inferences underscores readers' ability to fill gaps and make predictions based on implicit information, fostering deeper engagement. In educational settings, schema theory's practical implications involve teachers optimizing learning by Activating Relevant Schemas, expanding existing ones, and addressing knowledge gaps. This approach aligns with the interactive nature of reading, where understanding evolves based on schemas, resonating with contemporary perspectives on reading as a dynamic and constructive process (Trasmundi & Cowley, 2020).

Schemas, as elucidated by various researchers, including Leschziner & Brett (2021), Gerges et al. (2022), and Amiri & Hasani. (2023), play multiple pivotal roles in reading comprehension. Firstly, they function as a knowledge base, aiding the assimilation of new information by activating relevant schemata from prior sections. This facilitates seamless integration of details. Secondly, schemas guide the allocation of attention within passages, influencing how readers focus on titles, details, or themes, thereby enhancing comprehension. Thirdly, they enable inference-making by aiding in the construction of implicit knowledge, contributing to a more complete understanding of the passage. Fourthly, activated schemas facilitate organized memory searches, helping readers access relevant information.

Besides, schemas contribute to content editing and summarization, allowing readers to prioritize, disagree, recognize mastered content, and

enhance overall comprehension. Additionally, schemas permit the reconstruction of content based on existing knowledge. In the reading comprehension process, they interactively operate with both top-down (knowledge-based) and bottom-up (text-based) processing (Diana & Diána, 2020). In summary, schemas play multifaceted roles, including facilitating knowledge assimilation, guiding attention, aiding inference-making, organizing memory searches, enhancing content editing, summarization, and allowing content reconstruction.

To put it briefly, the schema theoretic view posits that reading comprehension is guided by the interactive operation of existing schemata, involving both top-down and bottom-up processing. Psychological research indicates that preexisting knowledge structures during comprehension determine interpretations, affect textual inferences, and are indispensable for literal and pragmatic understanding. The synthesis of research on reading comprehension and schema theory reveals the significance of schemata in comprehension, where the lack or failure to activate appropriate schemata can impair understanding, while inducing schemata through pre-reading activities can enhance comprehension alongside language ability and background knowledge (Khartite, 2021).

2.3 Low-achievers & Reading Comprehension

Low-achievers in the context of reading comprehension represent a group of students who face challenges in effectively understanding and interpreting written texts. The term "low-achievers" typically refers to students who perform below average or struggle to meet expected academic standards in reading. Low-achievers in reading comprehension face several challenges, as outlined by various scholars. Vocabulary deficits pose a significant obstacle, limiting their grasp of nuanced meanings and contextual understanding within texts. Additionally, deficiencies in decoding skills, the fundamental ability to convert written words into meaningful language, impede overall comprehension (Fletcher et al., 2002).

Background knowledge plays a crucial role in comprehension, and low-achievers may lack the necessary prior knowledge to connect with and understand textual information. Metacognitive awareness, encompassing strategies like monitoring understanding and making predictions, is vital for effective comprehension, yet low-achievers may

struggle with these cognitive processes (Tunga, 2021). Furthermore, motivation and engagement are key factors influencing reading success, with low-achievers often experiencing reduced interest and effort, subsequently affecting their ability to comprehend texts (Ramadhana, 2022).

Low-achieving readers are characterized by a myriad of challenges that significantly impact their ability to comprehend written text. A fundamental issue lies in decoding skills, where these readers struggle to translate written words into spoken language, hindering their overall reading comprehension (Khartite, 2021). Additionally, a limited vocabulary poses a substantial obstacle, impeding their capacity to grasp word meanings within a given context. Fluency issues further compound the difficulties faced by low-achieving readers, as they often exhibit slow and inaccurate reading, compromising their ability to comprehend text at a deeper level (Ndila, 2019). The absence of effective comprehension strategies is another notable characteristic, with these readers struggling to employ techniques such as prediction-making, summarization, and questioning, resulting in a surface-level understanding without delving into the intricacies of the text (Duke &Pearson, 2002).

Background knowledge plays a pivotal role in reading comprehension, yet low-achieving readers frequently contend with limited prior knowledge. This constraint makes it challenging for them to connect new information to existing schemas and comprehend the contextual nuances of a text (Ramadhana, 2022). Motivational factors also come into play, as low-achievers may exhibit reduced interest and engagement with reading tasks, impacting their willingness to invest time and effort in honing their reading skills (Cooper, 2021).In addition to motivational challenges, low-achieving readers often face difficulties with higher-order cognitive processes such as inference-making and critical thinking. These advanced skills are integral to analyzing and interpreting text meaningfully, yet they remain elusive for many struggling readers.

The characteristics of low-achieving readers are further influenced by factors such as limited exposure to diverse reading materials, a lack of consistent reading practice, and external socio-economic considerations. Access to a variety of texts is essential for literacy development, and low-achievers may miss out on the opportunity to navigate different genres and learning styles (Dings & Spinath, 2021). Additionally, the socio-

economic environment and home circumstances can contribute to reading difficulties, creating disparities in resources, parental involvement, and language-rich experiences (Dang & Tsang, 2023).To address these challenges effectively, targeted instruction is imperative. Providing explicit guidance in decoding, vocabulary development, and comprehension strategies is crucial. Moreover, individualized support, a positive reading environment, ongoing professional development for teachers, and engagement with families and communities are essential components of a comprehensive approach to supporting low-achieving readers. Differentiated instruction that accommodates diverse learning styles and provides varied approaches is paramount in creating an inclusive and effective learning environment (Tomlinson, 2017).

Understanding and responding to the characteristics of low-achieving readers are vital steps in fostering a supportive educational setting that promotes literacy development. Table (1) illustrates the characteristics of low-achieving readers in comparison with high-achieving readers when approaching reading tasks, according to Madison's middle school reading task force report (June, 1999) and Soltani & Taghizadeh (2023).

Table (1) The Characteristics of Low-achieving Readers and High-achieving Readers

a. BEFORE READING	
Low-achieving Readers	**High-achieving Readers**
Reluctantly approach or resist reading tasks	Confidently approach reading tasks
Possess limited background knowledge	Activate their background knowledge on the subject before reading
Inconsistently recall or use background knowledge	Connect background knowledge to new learning
Read without a clear purpose	Know their purpose for reading
Read without considering how to approach the material	Make predictions and choose appropriate strategies
Set minimal or no goals	Set relevant, attainable goals
b) DURING READING	
Low-achieving Readers	**High-achieving Readers**
Possess a limited attention span	Focus their complete attention on reading
Need guidance for reading tasks	Are able to read independently
Possess a limited vocabulary	Possess an extensive vocabulary
Do not consistently apply word attack skills	Use appropriate decoding or word attack skills
Read word-by-word, lack fluency	Read fluently
Do not monitor their comprehension	Monitor their comprehension
do not perceive organizational structures	use text structure to assist comprehension

read everything at the same rate, often very slowly	adjust rate according to purpose
read to get done	read to learn; anticipate and predict meaning
give up when reading is difficult or uninteresting	persevere with even unfamiliar passages
get only pieces rather than integrating information	organize and integrate new information by searching for main ideas, inferring, synthesizing.
do not ask relevant questions	raise related questions
often do not create mental images as they read	create visual and sensory images from text
do not realize and/or know what to do when they do not understand	use fix-up strategies when they do not understand (reread, read aloud, etc.)
do not recognize important vocabulary	strive to understand new terms
do not use context clues	use context clues
Use a limited number of strategies or repeat their mistakes	Are flexible according to task

AFTER READING	
Low-achieving Readers	**High-achieving Readers**
Forget or mix-up information	Reflect on what they have read and add new information to their knowledge base
Only look for "the answer" and give verbatim responses	Summarize major ideas and recall supporting details, make inferences, draw conclusions, paraphrase
Do not read outside of school	Seek additional information from outside sources
Feel success is unattainable, a result of luck	Feel success is a result of effort
Rely on the teacher for information	Can independently gain information
Express negative feelings about reading	Express opinions about or pleasure in selections they have read
Avoid reading at all costs	Choose reading for the sheer joy of it

Numerous psychologists and educational theorists, particularly at the preparatory and secondary levels, provide valuable insights into successful strategies for enhancing reading comprehension among low-achievers. Tunga (2021) elucidates several key implications for effective intervention. Firstly, building confidence is identified as a fundamental factor in improving the performance of low-achieving readers. Confidence-building measures can significantly contribute to fostering a positive attitude toward reading tasks, thereby positively influencing comprehension outcomes. Assistance and motivation are recognized as requisites for improved performance among low-achievers. Providing support and motivation serves as a catalyst for encouraging active

engagement with reading materials, creating a conducive environment for comprehension skill development.

Equipping low-achievers with effective comprehension strategies is deemed essential. By imparting specific strategies tailored to their needs, educators can empower these students to navigate and comprehend texts more effectively. Breaking the cycle of failure is emphasized through interventions that allow low-achievers to revalue themselves. Constructing situations where students find personal relevance and motivation to comprehend books aids in disrupting negative patterns and promoting a positive relationship with reading. Adapting teaching materials and techniques to accommodate differences in students' learning abilities is crucial. Recognizing and addressing diverse learning needs ensures a more inclusive and effective instructional approach.

Cultivating self-awareness of the comprehension process is advocated to empower students to gain control over their reading comprehension skills, both within and outside the school context. This metacognitive approach contributes to more autonomous and purposeful reading. Teaching children that the goal of reading is to derive meaning and employing various learning strategies, as highlighted by (Manalu & Wirza, 2021), is essential. Encouraging readers to focus on extracting meaning and implicit ideas enhances their overall comprehension skills.

Holding the same view, teaching low-achievers to monitor their own performance is considered a valuable metacognitive strategy. Introducing textbook strategies that foster metacognition can be instrumental in breaking cycles of passivity and failure (Johnston, 1985; Brozo & Curis, 1987; Singhal, 2001).Engaging low-achieving readers in frequent cooperative learning activities is recommended. Such activities not only emphasize the value of their contributions but also contribute to building confidence, potentially encouraging persistent efforts in reading endeavors.

2.4Metacognition & Reading comprehension

Metacognition, as defined by Rhodes (2019), extends beyond, beside, or with cognitive processes. In the educational context, Santangelo et al.(2021) characterizes metacognition as the conscious awareness of one's thinking and problem-solving activities. Metacognitive strategies, according to van, involve higher-order executive skills such as planning, monitoring, and evaluating the success of learning activities. Furthermore, Norman & Dahl (2019)

conceptualizes metacognition as an executive learning process, encompassing personal knowledge of one's learning abilities and limitations, including the skills necessary for acquiring and applying knowledge.

In essence, metacognition involves actions that surpass purely cognitive devices, offering learners a means to coordinate and enhance their own learning processes. Metacognition, the awareness and understanding of one's cognitive processes, plays a pivotal role in the realm of reading comprehension. Numerous researchers and theorists have explored the intricate connection between metacognition and reading comprehension, shedding light on its profound implications for effective learning. The following discussion delves into key insights and findings from relevant studies in this field.

Ganapati & Mostafavi (2021) defined metacognition as "thinking about thinking," highlighting its reflective nature. In the context of reading comprehension, metacognition involves the reader's awareness and control of cognitive processes while engaging with a text. Research has consistently demonstrated the positive correlation between metacognitive strategies and reading comprehension outcomes. Neal (2023) emphasizes that learners who employ metacognitive strategies exhibit enhanced comprehension skills. These strategies include setting goals, monitoring understanding, and adjusting strategies based on comprehension success or challenges.

Furthermore, Theobald (2021) found that metacognitive training enhances awareness and reading skills among learners. Interventions that explicitly teach metacognitive strategies contribute to improved comprehension levels, indicating the potential for targeted instructional approaches. Bouknify (2023) highlights the role of metacognitive strategies such as organizing, goal-setting, and planning in efficient language learning. These strategies, when applied to reading comprehension, empower learners to approach texts strategically, enhancing their ability to extract meaning. The relevance of metacognition in addressing the challenges faced by low-achieving readers is underscored by Lane's study (1997). The findings suggest that metacognitive skills, when incorporated into instructional interventions, can lead to significant gains among low-achieving readers.

In addition, Theobald (2021) points out that metacognitive training efforts have been empirically developed to improve the performance of students with learning disabilities, emphasizing the potential benefits of metacognition in addressing diverse learning needs. Saux et al, (2021) assert that reading comprehension is guided by the interaction of top-down (knowledge-based) and bottom-up (text-based) processing, aligning with the principles of metacognitive engagement. Readers actively draw on their prior knowledge, employing metacognitive processes to construct meaning from the text. Scarcella and Darwiche (2020) synthesized research on reading comprehension and schema theory, highlighting the importance of activating schemata through pre-reading activities.

Schemata, in this context, can be considered a manifestation of metacognitive structures that aid in comprehension. In conclusion, the symbiotic relationship between metacognition and reading comprehension is evident in the literature. Metacognitive strategies empower readers to approach texts thoughtfully, monitor their understanding, and adapt their cognitive processes, ultimately contributing to improved comprehension outcomes. As educators design instructional interventions, incorporating metacognitive elements aligns with evidence-based practices for fostering effective reading comprehension skills.

3 . Research Method

3.1 design of the study

The design of this study is the quasi-experimental design. Two groups of second year prep students at governmental school were randomly selected to represent a control and experimental groups. The experimental groups received training through proposed program based on learning metacognitive Strategies for improving their EFL reading comprehension skills. on the other hand, students in the control group received regular instruction. A pretest and posttest were given using the reading comprehension tests.

3.2 Participants

The subject of this study were 43 female participants who were randomly selected from second-year prep students in El Nasr Preparatory School for Girls of the academic year 2003/2004. They were randomly divided into an experimental group (N=43) and a control group (N=43). Their English class met six hours per week, divided into two hour classes on three separate days. The experimental group students were taught by the classroom teacher through the implementation of the study

experiment. The researcher wanted to be sure that the classroom teacher of the experimental group had a better control of the instructional variables. Besides, the regular classroom teacher should have knowledge of the teaching strategies adopted by the program and its theoretical foundations. Therefore, she followed these steps:

- She made discussions with classroom teacher about metacognitive strategies that should be applied to low-achieving students, their rationale, their steps and theoretical foundations in enhancing reading comprehension skills.
- She put a teacher's Guide which contain contents of the program, learning objectives of each lesson, materials, aids, teaching techniques, class organization, activities and procedures.
- She observed and monitored the regular classroom teacher' application of the teaching strategies. The researcher discussed with him how he modeled the strategies, when and how used them and how provided guided practice and gave correction feedback and suitable solutions to some difficulties that faced him.

Students in the control group received regular instruction by the regular classroom teacher. According to regular instruction, the control group students used to read the reading texts included in their course book Hello! 4 once or twice at most. After that, they were asked to answer the exercises included in the textbook based on the reading texts. The meaning of new words was translated into Arabic without looking at the context clues. All the participants had the same schooling background that is governmental schools and have been studying English for four years.

Table (2) The characteristics of the participants

Sample	(ii)	Grade	mean of Age	Type of School	Experience of learning English as EFL
Control	Female	Second year preparatory	13.4	Governmental	4 years
Experimental	Female	Second year preparatory	13.4	Governmental	4 years

While the control group studied with their Student's Book entitled "Hello 4", the experimental group studied the same course in addition to the designed program. The rationale for the subject's choice was that the

program might help them as students of English at preparatory schools to become active learners and to develop their level of reading comprehension.

3.3 Instruments and Materials
3.3.1Reading Comprehension Skills Checklist(RCSC)

The instruments were based upon the premises that there are levels of reading comprehension (Literal, inferential, critical comprehension) that are developed during the program. The propose of checklist was to determinate the most important reading comprehension sub-skills to be developed for low achieving student at the second year preparing stage. The reading comprehension skills include in the check list in it primary from were determined through reviewing the procedural objectives included in the ministry of education document. The Ministry of Education, as outlined in its directive (2003-2004), underscores the imperative nature of reading comprehension skills. These skills, considered essential, include the ability to read for gist and identify the main idea, discern the general meaning of written text, explain the meaning of vocabulary items within their contextual framework, elicit information and specific details, make inferences, recognize the author's purpose, and engage in asking and answering questions that necessitate identifying supporting details in a coherent sequence. Furthermore, the directive emphasizes the importance of fostering these skills through discussions on familiar topics that relate to learners' background knowledge, thereby highlighting a comprehensive approach to enhancing reading comprehension capabilities.

Validity of the checklist: checklist with submit to a panel of jury specialized in the field of EFL curricula and method of teaching to determent the degree of importance of each skill, appropriateness of the skills suggested to Egyptian low-achieving students at the second year preparatory stage; and the relationship of each skill to either literal, inferential or a critical comprehension level. The panel and jury recommended several modifications to the study, which included omitting certain skills such as "Inferring the writer's attitude and opinion," "Identifying specific stated information or details," and "Judging the new information of the written" due to their perceived difficulty for low-achieving students at the preparatory stage, considering their unique linguistic challenges. Additionally, they proposed consolidating related literal skills into a single, streamlined skill, namely "asking and answering questions that require identifying supporting details in a coherent sequence." Furthermore, advanced inferential skills like "drawing inferences from implicit information" and "inferring specific

details" were suggested for omission as they were considered more suitable for students at the university or advanced levels. To enhance the study's manageability and applicability, the panel and jury recommended confining the research focus to nine specific skills, aligning with the overarching goal of making the investigation more targeted in improving reading comprehension skills within the specified academic context.

3.3.2 The Metacognitive Strategies Checklist (MSC)

The purpose of the checklist was employed to determine the most important metacognitive strategies to improve low-achievers' reading comprehension skills at the second year preparatory stage in governmental schools. The metacognitive strategies included in the checklist in its primary form were determined through reviewing previous literatures and related studies concerned with kinds of metacognitive strategies, the effectiveness of using metacognitive strategies in enhancing learning reading comprehension skills and Metacognitive strategies for low-achieving such as readers of EFL.

Validity of the checklist: The checklist was submitted to a panel of jury specialized in the field of EFL curricula and methods of teaching to determine the degree of importance of each strategy, appropriateness of the strategies suggested to Egyptian low-achieving students at the second year preparatory stage, and the relationship of each strategy to overall reading comprehension and its sub-skills. Several modifications to the study were proposed by the jury panel. Specifically, the "Imagery strategy," "self-regulation," and "self-evaluation" were recommended for omission due to their perceived difficulty for low-achieving students at the preparatory stage. The panel suggested that these strategies might be more suitable for high-achieving students or those at the university level. In lieu of these, the jury recommended the inclusion of "semantic mapping" and "Experience-text relationship" as they are considered more manageable, measurable, and applicable for low-achieving students, contributing significantly to the enhancement of their reading comprehension skills.

Additionally, the "Think aloud" strategy was advised for omission, as it was deemed more appropriate for study cases or a limited number of subjects. To streamline the study and enhance its applicability, the panel proposed confining the investigation to five metacognitive strategies, a decision aimed at making the research more manageable and measurable in its focus on improving reading comprehension skills specifically for low-achieving EFL students at the preparatory stage. The metacognitive

strategies selected by study were Semantics mapping, Experience-text relationship, Generating questions, Prediction, Self-monitoring.

Thus, the research instruments were designed to be administered to the experimental and control group. The designed instruments aimed at accomplishing two objectives. The first was to assess the participants' reading comprehension level as second year prep students. This was accomplished through the use of **(part a)** of a specially developed test of reading comprehension. The second objective was to assess the metacognitive reading strategies that the participants use. The second objective was accomplished through the use of **(part b)** of the reading comprehension test.

i. 3.3.3 The reading comprehension tests

The Reading Comprehension tests for second-year preparatory students have dual objectives. Firstly, these assessments aim to evaluate the levels of reading comprehension among students by employing both pre and post-tests. These tests are specifically designed to gauge the performance levels of students in the intricate skill of reading comprehension. In doing so, the assessments provide valuable insights into the proficiency of second-year prep students in extracting meaning from texts, identifying main ideas, understanding vocabulary in context, and making inferences. Secondly, these tests serve the purpose of drawing an accurate representation of the practical application of metacognitive reading strategies. This focus on metacognition is particularly pertinent for low-achieving students. By assessing the efficacy of metacognitive strategies in real-world reading scenarios, the tests aim to illuminate the extent to which students can apply these cognitive tools to enhance their reading comprehension. The emphasis on metacognition is crucial for low-achieving students as it aligns with the goal of fostering self-awareness, self-regulation, and strategic thinking during the reading process. Ultimately, the Reading Comprehension tests serve as a diagnostic tool to not only measure the levels of reading comprehension but also to provide valuable insights into the practical utility of metacognitive reading strategies, offering a nuanced understanding of the reading proficiency of second-year prep students, especially those facing challenges in achieving higher reading levels.

The following procedures were followed in constructing the reading comprehension tests:

1. Identifying the objective of the test: that was to measure the reading comprehension levels of the participants as well as to assess the practical use of metacognitive reading strategies.

2. Identifying the levels of reading comprehension: this study identified three levels of reading comprehension. These are literal, interpretive and critical comprehension.

3. Identifying the metacognitive strategies that the test measures:semantic mapping, experience-text relationship, generating questions, prediction and self - monitoring.

4. The test content: five passages were used in the test. The passages were selected on the basis of familiarity with the topics, the reading comprehension skills and linguistic ability in Hello Book "4".

5. Presenting the items of the tests and passages to the members of the jury to determine the validity of the tests.

6. Modifying the tests were done based on the members of the jury suggestions. Most of these modifications had been included into the final versions of the tests

7. Piloting the test to insure the clarity of the tests' items such as difficulty and discrimination. The results indicated that students needed for more guidance to improve their reading comprehension.

8- Test time: it was estimated by the sum of time taken by each student divided by students' number.

9- Test instructions: the test instruction for each type of question were stated Cleary, to make sure that students understood what was required in each items. students were asked to read text and to move to the comprehension question immediately.

Table (3)Specifications of the Reading Comprehension Tests

Part A		
Level of comprehension	**Q. No.**	**No. of items**
Literal	**1 + 2 + 3**	**3**
inferential	**4 + 5 + 6**	**3**
Critical	**7 + 8 + 9**	**3**
Part B		
Metacognition strategies		
Semantic mapping	**10**	**5**
Experience – text relationship	**10**	**5**
Generating Questions	**10**	**5**
Prediction	**10**	**5**
Self – monitoring	**10**	**5**

Validity of the test

The validation of the preliminary version of the test was established through giving the test to a group of jury members who are university professors of TEFL and specialists in testing and educational resources in reading comprehension, measurement, and learning strategies.

The following remarks were highlighted:

- The test was long for low-achievers to be taken in one session therefore, it was suggested that student can take this lengthy test in five sessions after splitting into halves provided that last administration condition that be el most the same.
- The test items were too many. Therefore, jury members expressed their worry that might effected low achieving students' performance on the test was recommended to make more manageable practical and applicable by selecting suitable nine test items sub- skills in each session.
- Changing or Omitting some question because they don't measure what they were intended measure. It was recommended that the reading passage should include picture, photograph, and figure because they help learner to drive meaning and enhance their prior knowledge. Modifying some words in order to be easier for the student to understand.

Reliability of the test

Test reliability refers to the degree to which a test is consistent and stable in measuring what it is intended to measure.

a) Test retest reliability: A test is reliable if it is consistent across time. Thus, test-retest analyses were conducted. A total of 43 second year prep-students were tested then retested three weeks later. The correlation coefficient was conducted for the five reading comprehensions tests. Then, the researcher applied the reliability coefficient formula. In other words, and in this case, the test was reliable at the level of (0.01). the results seemed to provide solid empirical evidence that Test (1), Test (2) and Test (3) are stronger than Test (4) and Test (5) in measuring reliability any comment.

b) Interrater reliability: In order to achieve a high level of test reliability, the researcher established use of interrater reliability when the tests were handled to two raters to score the tests. The researcher's and the two rater's scores showed high interrater reliability in scoring the test. The result was indicated in table (7)This showed that the test was reliable at the level of (0.01)

3.3.4Reading materials

In a metacognitive reading classroom setting, the selection and presentation of reading materials assume critical importance, particularly when addressing the needs of low-achieving readers at the preparatory stage. Metacognition, as an integral aspect of cognitive awareness and self-regulation, underscores the necessity of thoughtful consideration in crafting reading materials that align with the cognitive and developmental capacities of learners. Given the challenges faced by low-achieving readers, reading materials should be meticulously accessible and engaging, catering to the diverse linguistic proficiency levels and individual learning styles within the preparatory stage.

In a metacognition reading classroom setting, various reading materials are commonly employed to enhance EFL low-achieving students' learning experiences. These materials include authentic materials/texts which were selected from student's Book "Hello 4". The rationale behind choosing these expository texts is to expose the students to different patterns of the reading materials which may help them read, comprehend and construct meaning. The passages were selected in the light of several criteria such as linguistic difficulty and length, the reading comprehension skills, the nature of metacognitive strategy training and background knowledge. The passages used varied in the length and linguistic items to meet the objectives of each unit.

Reading materials in this context should be selected to facilitate the application of these metacognitive strategies. Varied genres, relevant themes, and content that resonates with the experiential background of low-achieving readers can contribute to increased engagement and comprehension.The chosen passages were selected in the light of the following criteria linguistic difficulty and length, the reading comprehension skills, the nature of metacognitive strategy training and Background knowledge. Furthermore, the design of reading materials should accommodate the integration of pre-, during-, and post-reading activities that specifically target metacognitive skill development. For instance, pre-reading activities can focus on activating prior knowledge and setting purposes for reading, while during-reading activities may involve strategies like self-monitoring and questioning. Post-reading activities can then reinforce comprehension through activities that encourage reflection and analysis.

4.Experimental Procedures

Participants were meticulously selected and subsequently randomly divided into two distinct groups: an experimental cohort exposed to a metacognitive reading classroom approach and a control group subjected to conventional classroom settings. Prior to the commencement of the intervention, English as a Foreign Language (EFL) low-achieving students received comprehensive information about the study's objectives and procedures, accompanied by an assurance of the confidentiality of their collected data. The experiment extended over a duration of approximately 12 weeks.The researcher implemented a comprehensive set of instructional procedures for teaching reading comprehension and metacognitive reading strategies.

The Metacognitive strategies program dimensions

Aim:

To enhance reading comprehension skills through the application of metacognitive strategies, leading to improved overall academic performance.

Objectives:

1. Develop awareness and understanding of metacognitive strategies.
2. Apply metacognitive strategies to approach various types of texts.
3. Increase reading speed without compromising comprehension.
4. Enhance thinking skills through reflective reading practices.
5. Improve overall academic performance through increased comprehension.

Content:

1. Introduction to Metacognition:
   - Definition and importance.
   - Role in reading comprehension.
2. Types of Texts:
   - Fictional and non-fictional.
   - Expository, narrative, persuasive, etc.
3. Metacognitive Strategies:
   - Semantic mapping
   - Experience – text relationship
   - Generating Questions
   - Prediction
   - Self – monitoring

These procedures encompassed introducing a novel metacognitive reading strategy to students, conducting a brainstorming session to delve into its meaning, reasons for use, application timing, and implementation

methods. A written rationale for the strategy's utilization was developed, followed by suggested steps for its effective implementation. The researcher then modeled the application of the new strategy, introduced and clarified related activities, and facilitated practice sessions for students. To foster a collaborative learning environment, students engaged in correcting each other's applications under the guidance of the instructor. This structured approach aimed to enhance students' comprehension skills and proficiency in employing metacognitive reading strategies.

Activities:

Briefly, the program was designed around metacognitive reading strategies activities. The following activities were used to teach metacognitive reading comprehension strategies as well as improve the level of reading comprehension. Several activities were performed by students during the reading sessions which were developed to encourage students to use metacognitive strategies effectively when reading tasks.These activities are divided into four main categories: pre-reading, during reading, post-reading, and follow-up activities

a) Pre-reading activities

Pre-reading activities, conducted by the teacher before students embark on reading a text, are designed to guide students in approaching the material meaningfully. These activities encompass several key objectives, including motivating students and establishing purposes for reading, activating their background knowledge, connecting the reading material to their own experiences, building knowledge specific to the text, and encouraging the formulation of pre-questions and predictions about forthcoming events. In practical terms, these activities involve identifying the purposes and types of text, engaging in brainstorming sessions, previewing text formats such as titles, headings, visual aids, and subtitles, scanning for specific information, and fostering discussions that elicit students' opinions and predictions regarding the subject matter. Commonly, these pre-reading activities lay a foundation for a comprehensive and engaged approach to the subsequent reading tasks.

b) During-reading activities

Within the realm of during-reading activities, both students and teachers actively contribute to the learning process. Students engage in tasks such as constructing conceptual maps, silently reading the text, generating questions, organizing discussions, and drawing connections

between the information in the text and their own experiences. Simultaneously, teachers facilitate this engagement by prompting students with questions that encourage relating their previous experiences to the content. These during-reading activities encompass a range of strategies, including guessing word meanings through context and linguistic clues, predicting text content, scanning for specific information, filling in missing parts of diagrams through semantic mapping, and employing self-monitoring comprehension strategies. These strategies involve making connections to background knowledge, summarizing to enhance clarity, and predicting and revising predictions.

c) Post-reading activities

Activities that occur after reading, termed post-reading activities, serve the dual purpose of assessing students' comprehension and reinforcing the application of metacognitive reading strategies. These activities aim to enhance understanding, particularly addressing misunderstood elements within the reading material. The post-reading activities encompass demonstrating comprehension, interpreting the text, engaging in library or home assignments, retelling fiction or nonfiction texts, summarizing, participating in discussions related to the passage's topic, responding to questions assessing literal, critical, and interpretive comprehension, and making informed claims about the text, supported by evidence cited from the reading.

d) Follow-up activities

Follow-up activities went beyond the particular reading text by integrating metacognitive reading strategies students learned to other texts of their major subjects. Students were asked to report next class when they used the previously learned cognitive strategies with other language by means of self-correct mistakes. Furthermore, guidelines for peer review sessions foster collaboration and critical thinking, while self-assessment tools and checklists encourage students to evaluate their own writing, promoting self-reflection to identify areas for improvement and set writing development goals. These diverse materials collectively contribute to a rich and engaging learning environment.

Teacher aligned these reading materials with the learning objectives and provided clear instructions to students on how to engage with them in the classroom. By incorporating a variety of reading materials, educators can create a rich and interactive learning experience that supports students' reading comprehension setting.

Evaluation:

Assessing the program's effectiveness is imperative for gauging its alignment with the stated goals. Within this study, diverse assessment methods have been employed to comprehensively evaluate the intervention. Formative evaluation, characterized by its continuous nature throughout the program's implementation, serves as an ongoing assessment mechanism. This approach aims to assess students' progress and furnish them with constructive feedback. Implementation involved various evaluative tools, including class tests, homework assignments, open discussions, and a series of questions presented to students after each reading text. It is crucial to note that the posed questions function as a means of teaching rather than a strict testing measure. Furthermore, a summative evaluation was conducted at the conclusion of the program to appraise progress and scrutinize the program's efficacy. This method took the form of post-administration of a reading comprehension test to both the control and experimental groups, offering a comprehensive snapshot of the participants' achievements and allowing for a thorough assessment of the program's overall impact.

5. Data analysis

The primary focus of scrutiny centered on reading comprehension skills, designated as the dependent variable, with the independent variable being the implementation of metacognitive strategies. To gauge the impact of the of metacognitive strategies on low-achieving readers' performance within the experimental group, a one-way repeated measures ANOVA was employed. Additionally, a T-test was conducted to evaluate variations between the post-test and delayed post-test scores within both the control and experimental groups.

6. Results

It was important for the control group and the experimental group to record any differences prior to the training program on the scores of total literal, inferential critical, comprehension and the scores of total reading comprehension tests as assessed by means of independent. Samples t-test. The statistical analysis in this section is essential to draw guidelines to the subjects' background knowledge, experiences, and achievement level of their reading comprehension. The results are provided in Table 4.

Table (4)comparison of the control and experimental group on reading comprehension test (pretest)

Tests	Groups	N	Mean	S. D	T	D.F	Significance
Test1	Exp.	43	12.7442	3.5730	0.882	84	Not significant
	control	43	12.0698	3.5146			
Test2	Exp.	43	15.5116	4.6872	0.040	84	Not significant
	control	43	15.4651	5.9054			
Test3	Exp.	43	13.1163	3.2235	1.107	84	Not significant
	control	43	11.8837	6.5509			
Test4	Exp.	43	13.0000	3.9940	0.187	84	Not significant
	Control	43	12.8140	5.1605			
Test5	Exp.	43	12.5581	4.2275	0.483	84	Not significant
	control	43	12.0930	46895			
total	Exp.	43	66.9302	10.808	1.188	84	Not significant
	control	43	64.3256	9.4811			

Looking at table (4), it is clear that there were no significant differences between the pre-test mean scores obtained by the experimental and control groups on the total scores of the reading comprehension tests at (0.01) level. This means that both groups had similar performance level.

Table (5)Comparison of the experimental group scores on reading comprehension test (pre-posttests)

Tests		N	Mean	S.D	T	D.F	Significance
Test1	Pre.	43	12.7442	3.5730	40.567	42	P<0.01
	Post.	43	40.0233	4.9256			significant
Test2	Pre.	43	15.5116	4.6872	40.630	42	P<0.01
	Post.	43	42.9302	4.7479			significant
Test3	Pre.	43	13.7442	3.9285	51.121	42	P<0.01
	Post.	43	42.2791	5.0489			significant
Test4	Pre.	43	13.0000	3.9940	47.067	42	P<0.01
	Post.	43	39.6279	5.7653			significant
Test5	Pre.	43	12.5581	4.2275	72.542	42	P<0.01
	Post.	43	39.2093	4.7537			significant
total	Pre.	43	67.5581	11.0503	100.764	42	P<0.01
	Post.	43	204.0698	12.5440			significant

Table (5) indicates that the experimental group scored higher on the reading comprehension posttest, on the total scores, than their scores on the reading comprehension pretest. The t-test shows that these differences are significant at (0.01) level. The interpretation of these differences proved that the levels of reading comprehension for the subjects who participated in the program improved. Therefore, the first hypothesis of this study is supported.

As for the second hypothesis of this study, t-test for dependent samples was conducted on both the pretest and posttest scores of the experimental group, on the designed reading comprehension tests.

Table (6)Comparison of the experimental group scores on reading comprehension skills (literal, inferential and critical) Pre-posttests

Tests	Items	Groups	N	Mean	S.D	T	D.F	Significance
Test1	Literal	Pre post	43	4.6512 13.4186	1.1728 2.0498	23.967	42	P< 0.01 siginificant
	Inferential	Pre post	43	3.3023 11.093	2.8245 2.0215	15.094	42	P< 0.01 siginificant
	Critical	Pre post	43	4.3953 11.0698	2.0947 2.0165	14.561	42	P< 0.01 siginificant
	strategy	Pre post	43	0.3953 4.4419	1.198 0.7004	21.856	42	P< 0.01 siginificant
Test2	Literal	Pre post	43	6.0465 14.3721	2.1487 1.3805	24.448	42	P< 0.01 siginificant
	Inferential	Pre post	43	4.2093 12.2093	2.1664 2.4452	18.492	42	P< 0.01 siginificant
	Critical	Pre post	43	4.1860 11.5814	1.9180 1.9668	19.332	42	P< 0.01 siginificant
	strategy	Pre post	43	1.0233 4.8140	1.1441 0.4502	21.699	42	P< 0.01 siginificant
Test3	Literal	Pre post	43	4.9767 14.1628	0.1525 1.6025	37.476	42	P< 0.01 siginificant
	Inferential	Pre post	43	3.7907 11.9070	1.9828 2.328	20.821	42	P< 0.01 siginificant
	Critical	Pre post	43	3.7674 11.4419	2.0452 1.8426	20.65	42	P< 0.01 siginificant
	strategy	Pre post	43	0.5814 4.8372	1.0055 0.3735	26.613	42	P< 0.01 siginificant
Test4	Literal	Pre post	43	4.8372 13.0930	1.6320 2.2341	25.852	42	P< 0.01 siginificant
	Inferential	Pre post	43	3.6744 11.2791	2.0785 2.4912	19.805	42	P< 0.01 siginificant
	Critical	Pre post	43	3.6744 10.7907	1.6579 1.6118	23.443	42	P< 0.01 siginificant
	strategy	Pre post	43	0.7442 4.3953	1.0487 0.6226	24.009	42	P< 0.01 siginificant
Test5	Literal	Pre post	43	4.2791 13.1395	2.3230 2.1446	21.698	42	P< 0.01 siginificant
	Inferential	Pre post	43	3.4419 11.1395	2.0272 2.3962	22.517	42	P< 0.01 siginificant
	Critical	Pre post	43	3.7907 11.6279	1.6982 5.3498	9.474	42	P< 0.01 siginificant
	strategy	Pre post	43	0.8837 4.5116	1.1794 0.7028	19.896	42	P< 0.01 siginificant
Total		Pre pos	43	66.9302 204.0698	10.8086 12.5440	100.258	42	P< 0.01 siginifican

In Table 6, a comparison of mean scores between the experimental group's pretest and posttest results on two components, (A) reading comprehension skills (literal, interpretive, critical) and (B) metacognitive strategy, revealed a statistically significant improvement at the 0.01 level. This indicates that the metacognitive group exhibited progress in reading comprehension skills after undergoing the metacognitive strategies program. Notably, the total mean scores of the experimental group in literal and interpretive reading skills were more statistically significant

than in critical reading skills. This difference may be attributed to the focused training on the three critical skills within the experimental group, acknowledging the need for additional practice and training for critical reading skills.

Table (7) Comparison of the control and experimental groups on reading comprehension skills posttest

Test No.	Items	Q.No	Tests	N	Mean	S.D	T	D.F	Significance
Test1	Literal	1+2+3	Exp control	43	13.4186 5.8837	2.0498 2.8802	13.977	84	P< 0.01 significant
	Inferential	4+5+6	Exp control	43	11.093 6.8372	2.0215 2.8944	7.905	84	P< 0.01 significant
	Critical	7+8+9	Exp control	43	11.0698 6.3023	2.0165 3.1132	8.428	84	P< 0.01 significant
	strategy	10	Exp control	43	4.4419 1.5814	0.7004 1.6218	10.618	84	P< 0.01 significant
Test2	Literal	1+2+3	Exp control	43	14.3721 6.4884	1.3805 2.2821	19.382	84	P< 0.01 significant
	Inferential	4+5+6	Exp control	43	12.2093 5.5581	2.4452 2.1415	13.418	84	P< 0.01 significant
	Critical	7+8+9	Exp control	43	11.5814 5.093	1.9668 2.1471	14.612	84	P< 0.01 significant
	strategy	10	Exp control	43	4.814 1.1628	0.4502 1.1324	19.647	84	P< 0.01 significant
Test3	Literal	1+2+3	Exp control	43	14.1628 5.1395	1.6025 2.6057	19.343	84	P< 0.01 significant
	Inferential	4+5+6	Exp control	43	11.907 5.1163	2.328 1.4673	16.182	84	P< 0.01 significant
	Critical	7+8+9	Exp control	43	11.4419 4.8837	1.8426 2.0261	15.702	84	P< 0.01 significant
	strategy	10	Exp control	43	4.8372 0.7674	0.3735 1.1305	22.415	84	P< 0.01 significant
Test4	Literal	1+2+3	Exp control	43	13.093 5.3953	2.2341 2.5648	14.84	84	P< 0.01 significant
	Inferential	4+5+6	Exp control	43	11.2791 4.5116	2.4912 1.8175	14.391	84	P< 0.01 significant
	Critical	7+8+9	Exp control	43	10.7907 4.7209	1.6118 1.9189	15.883	84	P< 0.01 significant
	strategy	10	Exp control	43	4.3953 0.5814	0.6226 0.7632	25.392	84	P< 0.01 significant
Test5	Literal	1+2+3	Exp control	43	13.1395 5.7442	2.1446 2.4211	14.994	84	P< 0.01 significant
	Inferential	4+5+6	Exp control	43	11.1395 4.2558	2.3962 1.8784	14.826	84	P< 0.01 significant
	Critical	7+8+9	Exp control	43	11.6279 4.0465	5.3498 1.6897	8.861	84	P< 0.01 significant
	strategy	10	Exp control	43	4.5116 1.0465	0.7021 1.0455	18.037	84	P< 0.01 significant

Looking at table (7), it is clear that there are significant differences between the posttest mean scores of the experimental and control groups on the reading comprehension skills (literal, inferential, and critical) at (0.01) level. This means that the metacognitive group achieved progress in each skill as a result of a training of present metacognitive strategies program. The lack of improvement in the control group in reading comprehension skills may be due to the usual method that is adopted in

their classroom. Pearson correlation coefficient formula was applied an (Part A) and (part B) of the reading comprehension test scores of the subjects of the experimental group. (Part A) presented the levels of reading comprehension skills, while (part B) focused on the five metacognitive reading strategies. The correlation coefficient result is shown in Table (8)

Table(8) The correlation between the participants' levels of reading comprehension and their use of metacognitive strategies

Tests	Items	Correlation
Test1	Level of reading comprehension Semantic Mapping Strategy	0.904**
Test2	Level of reading comprehension Experience- text relationship strategy	0.769**
Test3	Level of reading comprehension Generating Questions Strategy	0.752**
Test4	Level of reading comprehension Self- monitoring Strategy	0.452*
Test5	Level of reading comprehension Prediction Strategy	0.394*

* Significant at the (0.05) level.** Significant at the (0.01) level.

The correlation coefficients for Test 1 (Semantic mapping strategy), Test 2 (Experience text relationship strategy), and Test 3 (Generating question strategy) were consistently strong and positive. These strategies, aimed at assisting low-achievers, facilitated the organization of ideas, effective interaction, activation of prior knowledge and related experiences, enhancement of meaning construction, and the ability to distinguish between important and unimportant information. The positive correlation across these tests suggests that the implemented strategies effectively contributed to the improvement of these essential cognitive and comprehension skills among low-achieving individuals.

7.Discussion
First: Overall reading comprehension

The study demonstrated significant differences in overall reading comprehension mean scores between the experimental group, trained in the metacognitive strategies program, and the control group receiving regular instruction, favoring the experimental group. This indicates that the experimental group achieved higher proficiency in overall reading comprehension, and the growth between the pre-test and post-test was also significant for the experimental group students. The effectiveness of the metacognitive strategies was evident in the high scores attained by the

experimental group. Factors contributing to this progress included active and constructive engagement in the reading process, supported by various scholars (Ramadhana, 2022; Idris et al,2022; Gamal ,2020).

The student-centered program facilitated language practice, a friendly atmosphere, collaborative learning, and interactive discussions, enhancing reading comprehension skills, as supported by Dang et al (2023), Cooper (2021), Khartite (2021), Khalaf (2002), Dabbour (2001), AbdEl-Ghafar (2001) and Khater (2002). Encouraging risk-taking, accepting errors, and promoting self-correction, group-correction, and peer-correction increased motivation and involvement, supported by Theobald (2021) and Teng (2020). Finally, focusing on students' successes rather than critiquing errors, adopting an empathetic approach, and providing specific feedback were identified as vital shifts in teaching methodology, fostering positive self-esteem, pleasant learning experiences, and greater effort and success, supported by Ganapati & Mostafavi (2021).

On the other hand, students in the control group were exposed to regular instruction which was characterized by the teacher's domination throughout the teaching process. The students were received the reading passage in the regular procedures, such as reading the title of the passage, asking students to read the passage silently, then the teacher read the passage aloud to the class, then he wrote the meaning of the difficult words on the board. Sometimes, he asked some questions that were existed in their Pupil's Book. This, in turn, contributed to the students' low level of achievement and was not sufficient to help the students develop their reading comprehension skills. These results are consistent with the results of other studies by Soltani & Taghizadeh, (2023); Manalu & Wirza, (2021); Abou-Hadid, (2000); and El-Shura, (1999).

Second: Reading comprehension skills:
    a. **The literal comprehension skills:**
Analysis of data revealed that there were statistically differences between the mean scores of the experimental and the control group in these literal skills:
- Identifying the main idea or a topic sentence.
- Determining the meaning of vocabulary out of context.
- Asking and answering questions that require identifying supporting details in a coherent sequence.

On the pre-test, most of the students failed to differentiate between main ideas and specific ideas, construct the meaning of words

and identify the events and the supporting details in a coherent sequence in the text. However, after applying the post-test, significant progress was observed in the experimental group students. Students' progress might be due to generating pre-reading, during reading and post-reading questions required the students to focus on the most ideas of the text. This enhanced the students' ability to understand the concept of the main idea and how it is related to the details in cluded in the text. This result was supported by Khartite, (2021); Ramadhana, (2022); Ndila, (2019). Abd El-Ghafar (2001); and Dabbour (2001). Besides, metacognitive strategies were valuable in planning, arranging, clarifying, elaborating students, ideas, monitoring their comprehension and checking out comes. Therefore, this maximized students' power to improve and succeed this result was supported by Bouknify, (2023); Manalu & Wirza, (2021); and Alsofyani, (2019).

b. The inferential comprehension skills:

Analysis of data revealed that there were statistically significant differences between the mean scores of the experimental group and the control group in these inferential skills:

- recognizing the author's purpose.
- Relating the text and attitudinal meaning to previous knowledge.
- Determining relations within the sentences.

In other words, the experimental group achieved a higher standard of proficiency than the control group in these skills. The skill of "recognizing the author's purpose" was stressed through the metacognitive strategies generating questions (**GQ**) and self-monitoring (**SM**). In addition to, the discussion helps the students to verify and expand their comprehension of the text and form various reasonable attitudes towards the author's purpose. The students were trained through many activities that were designed to help them to acquire this skill either directly or indirectly. The skill of "interpreting the text was also stressed through training the students to answer a set of questions that checked their understanding of the text and enhanced their thinking for interpreting the events and the concepts. The skill of "determining the relations within the sentences "was stressed through training the students to answer a set of questions that required them to find reasons and causes for some results, actions or events.Through the researcher's guidance, the students had to determine the relations by pointing out necessary discourse markers, such as because, and, so and although and so they that helped students to identify the relations

within the sentences accurately. These results were supported by Tunga, (2021); Berenji, (2021) and Dörr & Perels, (2019).

c. The critical comprehension skills:

It was found that there were statistically significant differences between the mean scores of the experimental group and the control group on the post-test in favour of the experimental group. It indicated that the experimental subjects' achievement level of these critical skills was improved:

- Drawing inferences and logical conclusions from implicit information.
- Recognizing textual inconsistencies and errors.
- Predicting what follows from implicit information.

The strategy of students' generated questions enhanced the experimental group students' skill of "drawing inferences" and through asking the students to predict the content of the passages they were going to read through using titles and pictures. This procedure helped the students develop their skill of making inferences by relating their prior knowledge about the pictures, and titles and inferring what the passages were going to be about. This skill was stressed through training the students to answer a set of question that do not have explicit answer in the text to determine the missing information and use their previous experience to answer the questions.

Generating questions strategy (**GQ**) helped the students to understand the relationships between concepts, discover new relationships, hypothesize about problems and eventually to make conclusions. The skill of "recognizing textual inconsistencies and errors" was improved through experience-text relationship (**ETR**) and self-monitoring (**SM**) strategies. This procedure helped the metacognitive group to relate the information in the text to their prior knowledge in order to know. It was true or false. Self-monitoring enhanced the students' ability of understanding and evaluating their progress through reading and checking outcomes. The skill of "predicting what follows from implicit information" was trained through the prediction strategy (**P**). Students' pre reading questions provided them with the purpose of reading and students' question while reading helps them to combine their background knowledge with the textual information. This assess the whole predictions and revise those which were found to be inappropriate. Post-reading questions served as a measure for comprehension and as a measure of interpreting the predications about the text.These results were supported by Berenji, (2021); Ahmadi & Motaghi (2021); and Tunga, (2021).

In the light of data analysis, the relationship between the levels of reading comprehension and the use of metacognitive reading strategies was positive. It was proved that the training on metacognitive reading strategies such as semantic mapping, experience-text-relationship, generating questions, self-monitoring and predication lead to the improvement of reading comprehension levels.The results of this study are similar to those of Erawati & Triyogo, (2022) ; Im & Jang, (2001); Rahmawati, (2020); Stevens et al. (2020) and Aryanti et al, (2020).

Third: Educational Challenges

EFL teachers often encounter significant challenges when working with students struggling in reading. Low-achieving readers may exhibit difficulties in comprehension, vocabulary acquisition, and engagement with texts, posing hurdles for effective language instruction. To address these challenges, teachers can implement personalized strategies tailored to individual learning needs. Providing targeted interventions such as one-on-one tutoring, utilizing adaptive instructional materials, and incorporating technology-based resources can offer additional support. Moreover, fostering a positive and encouraging learning environment, promoting interactive reading activities, and integrating multi-sensory approaches can contribute to enhancing the reading skills of low-achieving EFL students. Collaboration with colleagues and continuous professional development to stay informed about innovative teaching methods are essential components in successfully navigating the educational challenges associated with low-achieving reading students in the EFL context.

8.Conclusions

- The study focused on the influence of metacognitive strategies on reading comprehension skills among low-achieving EFL students.
- Findings emphasized the effectiveness of metacognitive reading strategies in improving various aspects of reading comprehension, including literal, inferential, and critical skills.
- Raising students' awareness of metacognitive processes, such as planning, monitoring, and evaluation, is highlighted as a key method to enhance EFL reading comprehension abilities.
- The integration of reading comprehension sub-skills within a meaningful context, involving all four language skills, is suggested as a valuable pedagogical approach.
- A shift in the teacher's role to a facilitator and guide, coupled with a student-centered classroom environment, is identified as crucial for fostering active student participation and independent thinking.

- Visual aids and multimedia elements, especially pictures and diagrams, are recognized as effective tools for low-achieving students.
- The study advocates for the incorporation of pre- and post-reading activities, such as listening exercises and discussions, as well as the use of motivating and relevant reading materials.
- Pedagogical implications include the recommendation for strategy instruction, with an emphasis on metacognitive strategies like semantic mapping, experience-text-relationship, generating questions, self-monitoring, and prediction.
- The overall study encourages a holistic and student-centered approach in language instruction, highlighting the importance of motivation and engagement in the learning process.

9.Recommendations:

In the light of the results obtained in the present study, a number of recommendations could be helpful in the methodology of teaching English as a foreign language (EFL). These recommendations could be organized in the following categories:

A– Ministry of Education

- Reading comprehension instruction should be given more attention in our EFL classes . More time and efforts should be exerted to develop the main skill and its sub-skills.
- The present program can be adopted for teaching reading comprehension skills to students at the preparatory stage and the other stages talking into consideration students' age, needs, interests and linguistic proficiency level.
- Metacognitive / Reading comprehension instruction should be integrated with other language skills throughout the learning Process using varied activities that require students to facilitate, elaborate, arrange, clarify ideas and details.
- The main objective of teaching EFL reading comprehension should aim at increasing its level of performance that depends on students' strengths and weakness, experiential background and instructional materials.

B – Teacher Training and Methodology

- Training courses on metacognitive strategies and process should be given to EFL teachers. These courses should highlight the nature of metacognition and its successful implications in the educational process.

- English language teacher should be aware of individual differences and learning styles. They should be aware of learners' characteristics while teaching Reading Comprehension skills.
- EFL teachers should be more attention to develop their students' literal , inferential and critical Reading Comprehension skills.
- Emphasizes the need for teachers to recognize and address individual differences among students. Recommends fostering motivation through personalized approaches to cater to diverse learning styles.
- Advises adopting a student-centered approach to enhance the effectiveness of teaching.
- In metacognitive educational settings, teachers need to clarify the purposes of reading, activate relevant background knowledge, monitor ongoing activities to see if comprehension is occurring and provide students with continuous feedback not only to help student identify their weakness an reading comprehension and ways of overcoming them but also to encourage their strengths and consequently increase their motivation and involvement in reading tasks to transfer to them the responsibility for implementing the strategies.

C-Students

- Strategic Learner Concept should be harassed in learning EFL settings. Proposes an overall emphasis on the development of a strategic learner concept in teaching EFL.
- Students should be given a learning environment where they can practice Reading Comprehension skills in a friendly , supportive and anxiety-free way .
- EFL learners' Reading Comprehension skills should be improved though group and pair work for improved learning outcomes.

D- Text book authors:

- Text book authors should design their text books implementing the principles of metacognitive strategies and its implications to enhance Students' overall reading comprehension skills and its sub-skills
- Teacher's Guide should contain a checklist of the necessary EFL Reading Comprehension skills and how to foster these skills.
- Learner's classification , characteristics and behaviors should be contained in Teacher's Guide

E – EFL Supervisors :

- Supervisors should give more attention during supervising the classroom teachers to activate the students background knowledge and provide students with necessary Reading Comprehension skills.
- Strategic learner concept should be stressed during teaching English as a foreign language.

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