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Universidad de Cuenca

Facultad de Filosofía, Letras y Ciencias de la Educación

Carrera Pedagogía de los Idiomas Nacionales y Extranjeros

The Effects of Cognitive Strategies in the Reading and Writing Skills of EFL Students

Trabajo de titulación previo a la obtención del título de Licenciado en Pedagogía del Idioma Inglés


Autores:

Erick Joseph Morocho Tenezaca

Christian Josué Ulloa Peña

Director:

Juan Fernando Mora Reino

ORCID:  0000-0001-6561-6859

Cuenca, Ecuador

2023-09-02

Resumen

Durante el proceso de aprendizaje del inglés, la lectura y la escritura son dos habilidades esenciales que los estudiantes necesitan para comunicar ideas por escrito. En consecuencia, es importante tener en cuenta cualquier dificultad que los estudiantes puedan tener al enseñar y aprender estas habilidades. Existen muchas formas de ayudar a los alumnos con sus dificultades. Las estrategias cognitivas son una forma de ayudar a los estudiantes. Este estudio analiza los efectos de las estrategias cognitivas en las habilidades de lectura y escritura de los estudiantes de inglés como lengua extranjera y cuáles son las estrategias cognitivas más frecuentes utilizadas por los estudiantes de inglés como lengua extranjera en el aula. Para esta investigación, se tomaron en cuenta 20 estudios para el análisis. Los hallazgos revelaron que las estrategias cognitivas presentan beneficios para los estudiantes al momento de la lectura y la escritura. Además, estas estrategias mejoraron el rendimiento general de lectura y escritura de los estudiantes de inglés como lengua extranjera. Además, los resultados revelaron que las estrategias cognitivas más frecuentes fueron resumir y hacer lluvia de ideas para la lectura y la escritura, respectivamente. Se concluye que se recomienda el uso de estrategias cognitivas en el aula para ayudar a los estudiantes a superar sus dificultades en las habilidades de lectura y escritura. Por último, se sugiere que futuros estudios se centren en investigar estos problemas en el contexto ecuatoriano.

Palabras clave: estrategias cognitivas, técnicas de aprendizaje EFL, habilidad de lectura, habilidad de escritura.



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Abstract

During the learning process of English, reading and writing are two essential skills that students need to communicate written ideas. Consequently, it is important to consider any difficulty that the students could have at the moment of teaching and learning these skills. There exist plenty of ways to help learners with their difficulties. Cognitive strategies are one way to help students. This study analyzes the effects of cognitive strategies on the reading and writing skills of English as a Foreign Language (EFL) students as well as which are the most frequent cognitive strategy used by EFL learners in the classroom. For this research, 20 studies were taken into account for the analysis. The findings revealed that cognitive strategies present benefits for the students at the moment of reading and writing. Moreover, these strategies enhanced the overall reading and writing performance of EFL learners. Furthermore, the results revealed that the most frequent cognitive strategies were summarizing and brainstorming for reading and writing respectively. It is concluded that cognitive strategies are recommended to be used in the classroom when helping students to overcome their difficulties in reading and writing skills. Finally, it is suggested that future studies should focus on investigating these issues in the Ecuadorian context.

Keywords: cognitive strategies, EFL learning techniques, reading skills, writing skills



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Acknowledgements

We want to show our sincere gratitude to all the people that supported us during this research synthesis. First, we would like to thank our tutor who guided us during this process, Mst. Fernando Mora. His guidance, recommendations, and patience were crucial factors to culminate this project. Moreover, many thanks to all the teachers and staff of the University of Cuenca for making this achievement possible. Lastly, we want to thank ourselves for encouraging each other in this long process.

Dedication

I dedicate this research synthesis to all the people that supported me along this journey. I want to thank my parents that helped me in every aspect of my life; my brother and my sister that supported me in the good and bad moments, and my grandmother that always gave me words of advice. Moreover, I want to give special gratitude to my group of friends for making this journey more lovely, and a special thanks to my best friend Christian Ulloa who helped me not only in this project, but in my life. If I learned something from this group of people is that there are still good people in this world.

Erick Morocho Tenezaca

First of all, I want to dedicate this research synthesis to my family and my dog, who have been my support and motivation throughout my entire life. Secondly, I would like to dedicate this research work to my beloved Paula, whom I love with all my heart. Without her and the help of my parents, I would not have been able to reach where I am now. I also want to express my gratitude to my dear friends who have always believed in me, even when I did not believe in myself. I would like to extend a special thank you to my parents, Jorge and Mariana, as well as my sisters, Ruth and Loida, for always standing by my side and giving me the strength and courage to overcome any challenges. Finally, I dedicate this work to the one and only God, who has bestowed upon me the wisdom and intelligence to write this research synthesis.

Christian Ulloa Peña

Introduction

English as a foreign language (EFL) encompasses four essential skills for the dominion of the language: listening, speaking, reading, and writing. Writing skills allow students to write effectively and succinctly. On the other hand, reading skills involve the ability of a person to read, comprehend, interpret, and interact with a written text.

Reading and writing involve a basic knowledge of the language, including vocabulary and grammar. This knowledge is essential for creating meaningful communication, providing students with the opportunity to fully understand the texts they read or write. There is a variety of strategies that can be applied in a classroom in order to help learners to build up their reading and writing skills, and one category of them is cognitive strategies.

Cognitive strategies grant students the opportunity to enhance their reading and writing skills. Even though they are not well recognized among students, they can take advantage of these strategies. Identifying and analyzing the effects of cognitive strategies in the reading and writing skills of EFL students is the main focus of this research synthesis, as well as presenting the most effective strategies for EFL students. As a result, students are encouraged to employ cognitive strategies to read and write effectively.

This research synthesis covers six chapters. The first chapter is related to the description of the research, and it includes the background, problem statement, rationale, research questions, and the objectives. The second and third chapters enclose two important points: the theoretical framework and the literature review. In

the theoretical framework, important concepts regarding cognitive strategies are mentioned; in the literature review, effectiveness and frequent cognitive strategies are stated. The fourth chapter corresponds to the methodology in which the retrieval and criteria selection is remarked. The fifth chapter answers the research questions as the result of the analysis and review of the data collected within specific empirical studies. Finally, conclusions and recommendations are presented in the sixth chapter.

Chapter I

Description of the research

1.1 Background

Pressley and Hilden (2007) say that a cognitive strategy is a group of plans that helps us to achieve our goal by enhancing our mental process during a period of time that we use to complete our purpose. For instance, the use of cognitive strategies allows students to achieve certain goals in an easier way than they normally do. These strategies help them to take advantage of the language material in direct ways. Analysis, note-taking, outlining, reasoning, reorganizing information, summarizing, and synthesizing are examples of these types of strategies (Mora et al., 2018). Furthermore, Parisi et al. (2012) state that the use of cognitive strategies can affect our mental performance in different ways when we do mental tasks that require a long use of our mental process. Therefore, teachers can use cognitive strategies to help students who have troubles while learning English. For instance, Elihami and Ismail (2017) suggest that students with different backgrounds can have better reading comprehension skills by using cognitive strategies to support their mental process while reading an article or short text.

As mentioned above, cognitive strategies can affect students' language skills, but education can also affect students' cognitive processes. Parisi et al. (2012) suggest that individuals who have an advanced educational level have better performance when taking cognitive tests. Moreover, teachers are able to implement different cognitive strategies for improving students' learning process in EFL classrooms. Also,

Putnam et al. (2016) suggest that students can use cognitive strategies to optimize the learning process.

Manganelli et al. (2019) say that many students rely on cognitive strategies when they are studying, and Roediger (2013) mentions that any cognitive function can be enhanced with practice and dedication. Therefore, teachers can help students to improve their mental development by teaching those strategies that may benefit their learning process. Parisi et al. (2012) indicate that the effects of cognitive strategies are influenced by the educational level. This means that a higher level of education involves a higher performance using cognitive strategies. The effects of cognitive strategies depend on how each person puts them into practice. Therefore, it is important to be aware of all the advantages and disadvantages of their application. Due to such importance, this study focuses on identifying the effects of cognitive strategies on reading and writing skills of EFL learners.

1.2 Problem Statement

Wenden and Rubin (as cited in Hismanoglu, 2000) mention that cognitive strategies are defined as steps used in learning and problem-solving to facilitate the acquisition of knowledge. This means that cognitive strategies can help students to deal with learning problems and learning processes.

Gonzalez et al. (2015) and Jdetawy (2011) mention that most EFL students have difficulties in the four main language skills: speaking, listening, reading, and writing. Thus, it is important to recognize these problems in order to teach students reliable strategies to overcome their difficulties while learning EFL.

Heikkilä and Lonka (2006) and Alivernini et al. (2019) agree that cognitive strategies can help students overcome their difficulties with their language skills. Liyanage et al. (2014) and Mahdavi and Azimi (2012), for instance, indicate that translation, deduction, contextualization, selecting part of a text, and making notes are cognitive strategies used to enhance listening, speaking, and reading skills. It seems necessary, therefore, to identify specific difficulties learners have in order to suggest suitable cognitive strategies, like the ones mentioned above. Moreover, Manganelli et al. (2019) indicate that students can use cognitive strategies as critical thinking to improve their academic performance in general.

Kellogg (1987) points out that the students who do not have a pre-idea or a plan when they are doing an academic work do not perform as well as those who carry out certain plans or methods while working on their assignments. This is a common problem that happens most of the time due to the lack of use of strategies when students practice their language skills. Therefore, teachers should provide students with strategies to increase their mental processes and methods while studying or doing activities. Crandall et al. (2002) state that instructors can use different strategies to help their students to gather and combine ideas in order to create a complete view of the topic.

As mentioned above, students have difficulties when developing language skills in EFL. Thus, students need strategies in order to overcome these problems. Cognitive strategies present a great advantage to help students overcome their difficulties and weaknesses in EFL.

1.3 Rationale

Heikkilä and Lonka (2006) state that the effects of the proper use of cognitive strategies in the classroom can determine the final result of the learning of the student. As mentioned earlier, cognitive strategies can be used by students in order to improve their language skills. This research synthesis focuses on analyzing the effects of cognitive strategies on reading and writing skills of EFL learners.

Putnam et al. (2016) mention that cognitive strategies directly affect the learning process of students in the classroom. Learners can use cognitive strategies as support when trying to reach a specific educational goal such as expanding vocabulary or improving their pronunciation. This research synthesis, therefore, will attempt to determine those cognitive strategies that have been successfully used by EFL learners in order to improve their reading and writing skills.

The importance of this study recalls the value of cognitive strategies within EFL reading and writing skills that have been developed during the last ten years. It will be important to point out some of the strategies that have been successfully used by EFL students when attempting to enhance their reading and writing skills.

1.4 Research Questions:

The aim of this study is to identify the effects of cognitive strategies on reading and writing skills of EFL students. In order to fulfill this objective, this research synthesis has considered the following questions:

1. How does the use of cognitive strategies affect reading and writing skills of EFL learners?

2. What are the most frequent cognitive strategies used by EFL learners to develop reading and writing skills?

1.5 Objectives:

1.5.1 General Objective

- To identify the effects of cognitive strategies on reading and writing skills of EFL learners.

1.5.2 Specific objectives

- To identify the most frequent cognitive strategies used by EFL learners to improve their reading and writing skills.
- To analyze the most frequent cognitive strategies used by EFL learners to improve their reading and writing skill.

Chapter II

Theoretical Framework

This section will discuss important concepts related to cognitive strategies for reading and writing, such as summarizing, note-making, brainstorming, translating, and more. Additionally, the characteristics and distinct elements of cognitive strategies will be explored. The theoretical framework features cognitive strategies used when teaching EFL, effects of cognitive strategies on the learners' performance, strategies with greater impact on learners, and strategies suggested to enhance EFL learning.

2.1 Cognitive strategies used by EFL learners

Cameron and Jago (2013) define cognitive strategies as “sets of mental processes that are consciously implemented to regulate thought processes and content in order to achieve goals or solve problems” (p. 453). Cognitive strategies can provide support for those students who present problems in their reading or writing skills in EFL. Furthermore, Rusni et al. (2017) state that, “The application of cognitive strategies seems suitable in teaching reading comprehension” (p. 127); rehearsal, organization, and elaboration of cognitive strategies “increase and influence students' achievement in reading comprehension” (p. 127). Therefore, cognitive strategies can be applied to improve students' performance in tasks such as essay writing and to enhance their reading comprehension. According to Lestari and Wahyudin (2020), some cognitive strategies frequently used by students for reading are summarizing, reading slowly and carefully to make sure to understand what is read, and skimming. In the same vein, Masbirorotni and Fajaryani (2020) mentioned that some of the most

frequently used strategies for writing are brainstorming, writing grammatical rules, and using a dictionary.

EFL learners regularly use cognitive strategies in order to improve their performance in reading and writing. Thus, teachers can introduce additional cognitive strategies to students, beyond the ones they already use, to help them improve their reading and writing skills. Moreover, Chien (2012) mentioned that students who frequently apply writing strategies tend to perform better before, while, and after writing.

2.2 Effects of using cognitive strategies

EFL learners that apply cognitive strategies in the development of their reading and writing skills tend to outperform learners who do not use those strategies. Thus, the use of cognitive strategies represents a great advantage to students. Mahdavi and Azimi (2012) demonstrated that the use of reading cognitive strategies made a positive impact for students in regard to their reading comprehension. Mahnam and Nejadansari (2012) mention that prewriting strategies help students achieve more remarkable written compositions. The constant use of cognitive strategies in the EFL field presents great opportunities and benefits for improving reading and writing skills. Therefore, EFL instructors can teach these strategies to their students to help them achieve a higher level of literacy.

On the other hand, Mehrdad et al. (2012) stated that the use of reading cognitive strategies produce almost no effects on elementary and advanced students; however, these strategies indeed produce effects on intermediate EFL students. Cognitive strategies can be a great tool for students at the intermediate level; however,

they may not provide any benefits to students at the beginner or advanced levels. Thus, EFL learners might avoid the use of cognitive strategies if they feel their reading or writing skills do not show any sign of improvement. Nevertheless, Chen (2022) states that the teaching of writing cognitive strategies to EFL students can yield positive outcomes. Saleh and Kurdi (2022) indicated that the use of conventional methods provides less benefits than the use of cognitive strategies for EFL learners. With the correct application of cognitive strategies, EFL learners will be able to derive benefits from them, directly impacting their reading and writing skills performance.

2.3 Cognitive strategies that present a greater impact on the reading and writing skills of EFL learners

Cognitive strategies can be utilized across various levels of study and for different skills. Therefore, certain cognitive strategies may offer more benefits compared to others that are commonly employed in the field. Pitenoee (2017) explained that the utilization of revising, resourcing, and text generating strategies has a significant impact on learners' writing goals.

Saleh and Kurdi (2022) clarified that the use of note-making and summarizing offers EFL learners a better benefit for reading comprehension. The authors claimed that note-making and summarizing are effective cognitive strategies that develop the reading performance of EFL students giving them the advantage of text prediction and becoming more skillful readers. This means that note-making and summarizing cognitive strategies certainly produce a positive impact on the reading skills of EFL learners by improving their reading performance and language comprehension.

In the same vein, cognitive strategies for writing skills have a great impact on EFL learners. According to Pitenoe (2017), revising, text generating, and resourcing are useful cognitive strategies that help learners to improve their writing regarding the quality of the content. Abdollahzadeh (2010) considered the incorporation of writing grammatical rules, analyzing the writings of proficient students, and employing new vocabulary as cognitive strategies that can be employed to foster and enhance the writing skills of EFL students.

2.4 Cognitive strategies suggested to be used by EFL learners to develop and enhance reading and writing skills

The use of cognitive strategies suggests an improvement to the reading and writing skills of EFL learners. The most frequently used cognitive strategies are taken into account for each skill in order to develop and enhance EFL students' performance. Summarizing, note-making, reading slowly, retrieval, and skimming are cognitive strategies known for helping learners gather ideas and information from a written text. Saleh and Kurdi (2022) stated that summarizing improves the reading practice of EFL learners. Moreover, Hazaea and Alzubi (2016) mentioned that note-making provides help to EFL students to improve their reading practice. Lestari and Wahyudin (2020) suggested that reading slowly can improve reading comprehension. Furthermore, Zhang and Sukying (2022) explained that retrieval allows students to connect prior knowledge with the reading passage. And finally, Samad, et al., (2017) suggested that skimming is an important strategy that can lead to success in a reading task.

Brainstorming, translating, and elaborating are cognitive strategies that help learners to gather ideas before and while writing a text. Abedianpour and Omidvari (2018) state that the brainstorming strategy “significantly improves the achievement of intermediate students’ writing performance” (p. 1092). Brainstorming not only encompasses elaborating ideas as a cognitive strategy but also selecting ideas and looking for information. Moreover, Bui et al. (2023) suggested that translating can provide help at the moment of communication. Moreover, Chen (2022) stated that the cognitive strategies used in the study, as it is elaborating, enhanced EFL learners writing skills. In consequence, the use of cognitive strategies to enhance the literacy skills of EFL learners is highly recommended by the aforementioned authors.

Chapter III

Literature Review

In the following chapter, a review of the literature will be conducted to analyze and identify existing information related to cognitive strategies and how this affects EFL students' reading and writing skills. This section is subdivided into the following parts: Effectiveness of the use of cognitive strategies by EFL learners to develop and enhance reading and writing skills, and frequent cognitive strategies used by EFL learners to develop reading and writing skills.

3.1 Effectiveness of the use of cognitive strategies by EFL learners to develop and enhance reading and writing skills

The reading skill is one of the most important skills, along with listening, that allow students to gather information during communication. During the reading process, students might find indistinct information that could interfere with their comprehension; thus, it is highly recommended to use different strategies to remedy this inconvenience. Saleh and Kurdi (2022) investigated the effectiveness of using cognitive strategies on Iraqi EFL pupils' literacy development and reading comprehension. The results revealed that EFL students enhanced their comprehension of a reading passage through the utilization of cognitive strategies, leading to improvement and development in their overall understanding. The authors also concluded that, by using cognitive strategies, learners can retain the information more easily because it provides them with general outlines for the reading passages.

According to Hazaea and Alzubi (2016), note-making is a strategy that presents highly useful benefits for students when reading a text. Note-making has been used

by students for a long time presented as written phrases, sentences, or short paragraphs. However, the new era allows students to interact with technology. In the same vein, there exist more alternatives for note-making than simply writing or making maps. Hazaea and Alzubi (2016) noted that mobile devices can be used to take notes in the form of WhatsApp messages, pictures, online resources, memos, or digital dictionaries. The proper use of these tools allows students to collect important data during pre, while, and post reading activities. In fact, Hazaea and Alzubi (2018) stated that the use of online applications helps students to interact between them by chatting and making and sharing notes. The use of note-making enhances the students' reading process as well as helps them to find relevant information within the text. Pysarchyk and Yamshynska (2015) explained that the use of note-making allows students to improve their receptive skills as well as helps them to overcome problems at the moment of working on an activity required by their teacher. Note-making provides EFL students significant help at the moment of gathering information. In fact, Koumachi's study (2020) demonstrated that note-making helped several students to gather information, keep track of the reading, and collect data from the text.

Mahdavi and Azimi (2012) investigated the effects of using note-making and underlining as cognitive strategies with 60 female high school EFL Iranian learners. A control group (20) and two experimental groups (20 each) were used in this research investigation, together with pre-test and post-test reading comprehension assessments, to measure the effects that note-making and underlining cause on the reading skills of EFL learners. The results revealed that the experimental groups, who implemented the note-making and the underlining cognitive strategies, achieved

higher scores in the post-test, compared to the control group. The authors highlight the significant positive effect that these strategies had on Iranian EFL learners' reading comprehension.

For Rodríguez (2021), the utilization of cognitive strategies enables EFL learners to effectively process information within texts and comprehend the intended message of the author. In the study conducted by the author, the participants were 40 EFL Colombian students, specifically aged between 13 and 16. The author aimed to determine how five cognitive strategies (predicting, asking questions before reading, visualizing, summarizing, and answering reading comprehension questions after reading) could improve reading comprehension. Therefore, the instruments implemented in the study in order to collect data were questionnaires, portfolios, and a students' blog. The study consisted of three stages: pre-intervention, while- intervention, and post-intervention. In the pre-intervention stage, factors affecting ninth-grade students' reading comprehension were examined through a questionnaire. The while-intervention stage involved five cycles of instruction on cognitive reading strategies, with students collecting artifacts for their portfolios. The post-intervention stage involved analyzing student insights through a questionnaire and comparing data with the while-intervention stage, including additional analysis of student blog posts on the effectiveness of cognitive reading strategies in relation to short stories. The results revealed that, by using cognitive strategies, students were able to not only improve their reading comprehension skills but also enhance their lexical resources.

On the other hand, writing skills allow students to communicate their ideas by written messages. When writing a text, it is important to recognize what is going to be written and to give proper focus to the message. Rao (2007) claimed that the implementation of a brainstorming strategy supports students in utilizing their existing knowledge during writing tasks.

Brainstorming can help students to point out what is important, needed, and essential in the message. In fact, Maghsoudi and Haririan (2013) showed that students who used brainstorming in class achieved a better performance as well as a higher rate of class participation. Moreover, Manouchehry et al. (2014) mentioned that brainstorming makes learners more active and aware of the learning environment. Brainstorming is a cognitive strategy that is not only used to enhance the students' writing performance but to help them be aware of the entire learning process.

Brainstorming cognitive strategy improves the writing performance of EFL learners, according to Mehr et al. (2016), who analyzed the effects of using brainstorming on writing performance with six Iranian EFL learners at an English institute. The data analyzed was gathered through observation. The researchers selected a random sample of writing assignments from the participants and analyzed their compositions individually to evaluate their progress. The findings of this study revealed that using brainstorming helps EFL learners produce more successful work by providing guidance and training in various writing strategies during the prewriting stage.

Therefore, the authors conclude that the use of brainstorming as a cognitive strategy can enhance students' comfort level when engaging in classroom writing

activities; thus, brainstorming provides students confidence in order to create a more collaborative classroom where students can share their thoughts about the text that is going to be written.

Wirantaka (2016) stated that “[as] the first step in paragraph development procedure, brainstorming is essential to collect the ideas” (p. 39). This strategy serves to gather the necessary data that will be used during the writing process. Also, Amoush (2015) mentioned that the lack of brainstorming before writing can cause an unorganized structure of the paragraph. This strategy conveys a big change in how a student writes since it can directly affect the ideas collected, as well as how the student may include them in the text.

In addition, Trapsilo (2016) conducted a study that aimed to investigate the effectiveness of thinking-aloud as a cognitive strategy to develop students’ writing narrative skills in EFL classrooms. The research design employed a quasi-experimental approach with an experimental group and a control group. The participants were 60 EFL students from Indonesia, specifically aged between 14 and 17, who were randomly assigned to either the experimental (XI IPS1: 30 students) or control group (XI IPS2: 30 students). The study consisted of three stages: pre-test, treatment, and post-test. In the pre-test stage, both groups were asked to write about a given topic. In the treatment stage, the experimental group studied a model essay and engaged in thinking-aloud protocols, where they verbalized their thinking process while noticing aspects of language in the model essay. The control group studied model essays independently without the thinking-aloud component. Finally, in the post-test stage, both groups were asked to rewrite their task. The results of the study

indicated that the experimental group, which used think-aloud cognitive strategies, demonstrated higher scores in writing narrative compared to the control group. The findings suggest that thinking-aloud protocols can be an effective strategy for improving students' writing narrative performance. The study highlights the importance of incorporating cognitive strategies like thinking-aloud protocols in language instruction to enhance students' writing skills.

Numerous authors have investigated cognitive strategies, and the findings of their studies can differ in various aspects. For example, a study made by Mehrdad et al. (2012) suggested that cognitive strategies such as skimming and scanning were found to lack benefits for EFL elementary students. In the same vein, Lestari and Wahyudin (2020) indicated that summarizing, reading slowly and carefully to make sure to understand what is read, and skimming were widely affected by teaching methods; thus, these strategies alone could not affect EFL learners by their own.

3.2 Frequent cognitive strategies used by EFL learners to develop and enhance reading and writing skills

According to Mega et al. (2019), "Cognitive strategies enable the learner to produce new language materials in direct ways, for example by reasoning, analyzing, note-taking, summarizing, practicing structures and sounds formally" (p. 12). Cognitive strategies are deliberately and consciously managed by learners themselves in order to improve their language development. This implies that EFL learners can use different types of strategies to optimize their skills, specifically in reading and writing.

In recent years, cognitive strategies have been researched by many authors, whose study results can vary in many aspects. For example, a study conducted by El

Marsafy et al. (2019) demonstrated that the cognitive strategies most commonly employed by EFL learners in the classroom for reading included summarizing and scanning. On the other hand, another study by Chen (2022) showed that the most frequent cognitive strategies for writing used by students in the classroom were brainstorming, elaborating, and clarification. However, it is important to acknowledge the individual differences among students when it comes to utilizing cognitive strategies.

Regarding reading strategies, El Marsafy et al. (2019) conducted a study with 64 female students in the second year of a high school. The study implemented summarization and self-questioning as part of their research. The findings indicated that summarizing enhanced the participants' originality, allowing the students to develop and improve their literacy skills.

Aghazadeh et al. (2022) analyzed reading comprehension cognitive strategies, finding that summarizing was the most frequent and efficient strategy used by EFL learners. Readers actively summarize or paraphrase the main ideas or key details of a text in their own words. This helps readers consolidate their understanding of the text and identify the most important information. Skilled readers use summarizing to actively engage with the text, enhance comprehension, and improve overall reading skills. However, it is important to note that readers may use this strategy to different extents, depending on their individual reading skills, the text complexity, and their reading purpose.

Similarly, Ahmed (2020) conducted a survey among 375 undergraduate students with different fields of study, including biology, business studies, information

technology (IT), engineering, and English. The purpose of the study was to identify which cognitive and metacognitive strategies were used by EFL learners. The results showed that cognitive strategies were more commonly used than metacognitive strategies. The most used cognitive strategies among EFL learners were reading slowly and carefully to ensure understanding and problem solving. Ahmed (2020) stated that “cognitive strategies are the most preferred reading strategies among Omani EFL students studying biology, engineering, business studies, IT, and English” (p. 302). This suggests that students with greater awareness tend to utilize reading cognitive strategies.

It is worth noting that the frequency of cognitive strategies used when learning EFL may vary from learner to learner and may also change over time as learners progress in their language proficiency and develop their own preferred learning strategies. Additionally, effective language learning often involves a combination of different cognitive strategies that work best for individual learners based on their learning style, strengths, and preferences.

Chen (2022) conducted a study with two classes of freshmen majoring in different subjects at a university in Taiwan. The study implemented four stages: strategic awareness raising, demonstration, practice, and evaluation. In the first stage, participants were instructed to recognize and use cognitive strategies. The most common strategies used in the study were brainstorming, elaborating, and clarification. At the end of the study, Chen (2022) mentioned that the overall writing skills of the participants improved, as well as their general knowledge of how to use writing strategies.

In the same way, Bui et al. (2023) conducted a study among 17 teachers in an EFL program in Vietnam. The cognitive strategies used in the study were translating and elaborating for writing. It is important to note that the study also included other categories of strategies such as rhetorical, metacognitive, and social affective strategies. The results showed that translating was the most frequently used strategy. This can be attributed to the difficulties that the participants faced with syntactical and lexical differences between English and Vietnamese. However, the authors mentioned that some participants used self-regulation strategies more frequently, as well as other social affective strategies. The study itself suggested that the limited number of participants involved could have influenced these findings.

Likewise, Yuliani and Fadhly (2020) conducted a research study with 39 students from a senior high school in Kuningan, Indonesia. The purpose of the study was to determine the most frequent writing strategies and to identify the different writing strategies used. The methods employed to collect the data included a questionnaire and an interview. The results revealed that the most frequent strategy used by the participants was the compensation strategy, followed by the social, cognitive, metacognitive, affective, and memory strategies. The compensation strategy accounted for 18.7% of the usage in the study, with the most common strategies being choosing a favorite topic and using understandable words. On the other hand, cognitive strategies ranked third in the study, representing 16.8% of the usage, with strategies such as reading books or compositions by good writers to improve writing, and practicing new expressions repeatedly being employed. This

suggests that cognitive strategies are not always the most frequently used by EFL learners.

The literature review has shed light on the significance of cognitive strategies in developing and enhancing the reading and writing skills of EFL students. The findings suggest that employing cognitive strategies such as note-making, summarizing, predicting, brainstorming, and thinking-aloud protocols can lead to improved comprehension, retention of information, idea generation, and organization of thoughts. While certain strategies like summarizing and scanning appear to be frequently used by EFL learners, it is essential to consider individual differences and teaching methods in implementing these strategies effectively. The literature review highlights the need for a comprehensive understanding of cognitive strategies and their potential to develop and enhance reading and writing language skills.

Chapter IV

Methodology

This study is a research synthesis of important accumulated primary research studies. Cooper et al. (2019) mention that a research synthesis consists of a process of combining multiple primary research studies that aims for the same purpose or concept. These studies focus on information about the effects of cognitive strategies on EFL students' reading and writing skills. For obtaining all the data needed, this research synthesis was done in a systematic way. The information was searched in online databases such as Google Scholar, ERIC, and ResearchGate because of their reliability. To find relevant information about the topic, the following keywords were used: 1. Cognitive strategies, 2. EFL learning techniques, 3. Reading skills, and 4. Writing skills.

Mixed-methods, qualitative, quantitative, and case studies were analyzed. In order to select relevant studies, the following inclusion criteria were considered. First, the studies focused on frequent cognitive strategies used by EFL learners to develop reading and writing skills in the classroom. As a second point, the data collected for this research synthesis was empirical data to give reliability to this study. Third, this research synthesis covers the effects of the usage of cognitive strategies on reading and writing skills of EFL students. As a final point, the papers selected were recent articles published in the last thirteen years chosen to conceptualize key information.

The main journals selected for the purpose of this study are Journal of Aging Research, Journal of Psychoeducational Assessment, Journal of Education, Child Development, Edumaspul: Jurnal Pendidikan, Educational Psychology, Studies in

Higher Education, Written Communication, Psychological Science in the Public Interest, and Perspectives on Psychological Science, among others. All the articles were classified through a coding process according to criteria that will arise when conducting this research.

Chapter V Data

Analysis

The following section shows the data analysis from 20 research articles to answer the research questions and fulfill the objectives previously stated in chapter 1 (refer to sections 1.4 and 1.5). The studies were classified into the following categories: research location, participants' age, research design, data collection instruments, effects of cognitive strategies on the reading performance of EFL learners, effects of cognitive strategies on the writing performance of EFL learners, most frequent cognitive strategies used by EFL learners to develop and enhance their reading skill, and most frequent cognitive strategies used by EFL learners to develop and enhance their writing skill.

Table 1

Research location

Continent	Country	N° of studies	Percentage
Asia	Indonesia	4	20%
	Iran	6	30%
	Oman	1	5%
	Iraq	1	5%
	China	1	5%
	Vietnam	1	5%
	Thailand	1	5%
	Taiwan	1	5%
	Turkey	1	5%

Europe	Slovak	1	5%
Africa	Egypt	1	5%
America	Colombia	1	5%

N= 20

Table 1 shows a classification of 20 different empirical studies based on their geographical locations, specifically the continents and countries where these studies were conducted. Based on the information presented in the table, it is evident that the majority of the studies (17) were conducted in Asia. Specifically, Indonesia and Iran accounted for the highest number of studies with 4 and 6, respectively, making up 20% and 30% of the total studies. Other Asian countries such as Oman, Iraq, China, Vietnam, Thailand, Taiwan, and Turkey each had one study, representing 5% each.

Moving on to other continents, Europe was represented by Slovakia with one study, constituting 5% of the total. Similarly, Africa had one study conducted in Egypt, also representing 5% of the total. Lastly, America had one study conducted in Colombia, also accounting for 5% of the total studies.

Overall, the distribution of studies across continents shows Asia as the focal point with a substantial number of research conducted within the region. It is important to highlight that the number of studies on cognitive strategies for reading and writing skills conducted in Europe, Africa, and America seems to be scarce. For this reason, it is expected to see future research studies carried out in these regions.

Table 2***Participants' age***

Group	Age range	N° of studies	Percentage
Children	5-11	1	5%
Teenagers	12-16	7	35%
Adults	17-36	12	60%

N=20

Table 2 shows a summary of the data collected on the age of the participants. The majority of the participants were adults between 17 and 36 years old, as indicated by 12 of the total 20 empirical studies. Seven studies featured the participation of teenagers, while only one study included children as participants. Flavell (1979) notes that young children may not have fully developed cognitive abilities, which can limit their ability to use cognitive strategies effectively. The reason why many studies on reading and writing cognitive strategies have used older participants such as teenagers and adults is likely due to the fact that these strategies make use of cognition abilities that learners start to develop in their early childhood. Furthermore, Brown (1987) argues that adults are able to use their metacognitive knowledge to regulate their own learning, selecting and using cognitive strategies that are appropriate for the task at hand.

Table 3

Research design

Research design	Author/Year	N° of studies	Percentage
Quantitative	El Marsafy et al. (2019), Mahdavi & Azimi (2012), Zhang & Guo (2020), Mehrdad et al. (2012), Masbirorotni & Fajaryani (2020), Pitenoe et al. (2017), Ulaywi (2021)	7	35%
Qualitative	Lestari & Wahyudin (2020), Straková (2013), Yuliani & Fadhly (2020), Bui et al. (2023), Mehr et al. (2016), Rodríguez(2021)	6	30%
Mixed methods	Zhang & Sukying (2022), Ahmed (2020), Chen (2022), Abdollahzadeh (2010), Trapsilo (2016), Altunay (2014), Hashempour et al. (2015)	7	35%

N=20

Table 3 displays how the 20 empirical studies were classified based on their research design, which includes quantitative, qualitative, and mixed methods. As can be observed, 35% of the studies employed a quantitative approach; likewise, 35% used a mixed method design, and the remaining 30% utilized qualitative methods. Based on the analyzed studies, it seems to be that a majority of the studies employed a quantitative approach and mixed methods when examining the use of cognitive strategies in reading and writing skills. According to Apuke (2017), this could be because quantitative research methods allow for a more objective and precise analysis of data through numerical measurements and statistical analysis.

Additionally, this approach can facilitate comparisons between groups, the identification of patterns, and the establishment of cause-and-effect relationships. In contrast, Creswell & Poth (2016) state that qualitative research methods focus on exploring subjective experiences and understanding the complexity of human behavior, which however, may be more difficult to quantify. However, Johnson and Onwuegbuzie (2004) affirm that mixed-method designs, which incorporate both qualitative and quantitative approaches, can provide a more comprehensive understanding of cognitive strategies with reading and writing skills. The use of mixed methods for researching cognitive strategies is essential as it allows for a comprehensive exploration of the topic, combining the strengths of both quantitative and qualitative methods.

Table 4***Data collection instruments***

Instrument	Author/Year	N° of studies	Percentage
Pre-tests and post-tests	El Marsafy et al. (2019), Mahdavi & Azimi (2012), Mehrdad et al. (2012), Chen (2022), Trapsilo (2016), Pitenoe et al. (2017), Hashempour et al. (2015)	7	25.92%
Questionnaires	Zhang & Sukying (2022), Lestari & Wahyudin (2020), Zhang & Guo (2020), Masbirorotni & Fajaryani (2020), Abdollahzadeh (2010), Yuliani & Fadhly (2020), Altunay (2014), Hashempour et al. (2015), Rodríguez (2021)	9	33.33%
Interviews	Zhang & Sukying (2022), Lestari & Wahyudin (2020),	4	14.81%

		Yuliani & Fadhly (2020), Buiet al. (2023),	
Others (TOEIC, survey, journals, observation, portfolios, etc)	reflective posttest,	Zhang & Sukying (2022), 7 Ahmed (2020), Chen (2022), Ulaywi (2021) Mehr et al. (2016), Straková (2013), Rodríguez (2021)	25.92%

N= 27

Table 4 represents the different instruments that were used to collect data. The table shows four different categories of instruments: pre-tests and post-tests, questionnaires, interviews, and others. Interviews were the least commonly used instrument with only four studies (14.81%), followed by other types of instruments such as TOEIC tests, surveys, reflective journals, observations, post-tests, portfolios and more; these instruments were applied in seven studies (25.92%). Similarly, the pre- test and post-test instruments were used in eight studies (25.92%). Questionnaires were utilized in most of the studies; in fact, 9 studies (33.33%) employed this research instrument. Both pre-test and post-test and questionnaire instruments have been proven to be effective in measuring the impact of interventions and changes over time (Hashempour et al., 2015). Particularly, by comparing the results obtained from the pre-test measurements, researchers can determine the effectiveness of the intervention, in this case, the effectiveness of using cognitive strategies in the reading and writing skills of EFL students.

The next part of this analysis focuses on the research questions of this research synthesis:

RQ1: *How does the use of cognitive strategies affect reading and writing skills of EFL learners?*

RQ2: *What are the most frequent cognitive strategies used by EFL learners to develop and enhance their reading and writing skills?*

This part of the analysis focuses on the first research question, which examines the effects of cognitive strategies on the reading and writing skills of EFL learners. The table below provides a summary of the effects resulting from the implementation of cognitive strategies in the studies analyzed.

Table 5

Effects of cognitive strategies on the reading performance of EFL learners

Author	Effects on reading comprehension	Nº of studies	Percentage
Lestari & Wahyudin (2020)	Minor/Nonsignificant effects	3	33.33%
Mehrdad et al. (2012)	Minor/Nonsignificant effects		
Straková (2013)	Minor/Nonsignificant effects		
Ahmed (2020)	Significant effects	6	66.67%
Mahdavi & Azimi (2012)	Significant effects		
El Marsafy et al. (2019)	Significant effects		
Rodríguez (2021)	Significant effects		

Zhang & Guo Significant effects
(2020)

Zhang & Sukying Significant effects
(2022)

N=9

From the studies focused on the reading comprehension performance of EFL learners, six of them (66.67%) demonstrated positive effects on the efficiency of students when applying cognitive strategies. During the conducted experiments, learners were able to improve their reading skills. However, in the studies conducted by Lestari and Wahyudin (2020), Mehrdad et al. (2012), and Straková (2013), the results were not clear regarding the students' reading performance. Mehrdad et al. (2012) mentioned that cognitive strategies can be difficult to apply for elementary students and may make the reading process boring and inefficient. Furthermore, Lestari and Wahyudin (2020) stated that the participants in their study did not employ cognitive strategies for reading; however, the authors emphasized the importance of teaching these strategies and others to create an encouraging environment for learners. Moreover, the majority of studies (Lestari & Wahyudin, 2020; Mehrdad et al., 2012; Straková, 2013) suggest that the impact of cognitive strategies on learners' progress is limited by external factors such as age and instructional level. However, the learning of these strategies can be introduced in advanced levels as students continue to develop their linguistic knowledge.

Furthermore, most of the studies (Ahmed, 2020; Mahdavi & Azimi, 2012; El Marsafy et al., 2019; Rodríguez, 2021; Zhang & Guo, 2020; Zhang & Sukying, 2022)

indicate that the use of cognitive strategies has a considerable impact on the readingskills of EFL learners. Mahdavi and Azimi (2012) and Zhang and Guo (2020) mentioned that the implementation of cognitive strategies helped students improve their reading performance and enhanced their awareness in the classroom. Additionally, the significance of employing cognitive strategies in the reading process is emphasized, as these strategies assist EFL learners in overcoming comprehension difficulties and improving their overall reading abilities and English proficiency (Ahmed,2020; El Marsafy et al., 2019; and Zhang & Sukying, 2022).

The next part of the analysis focuses on the writing performance of EFL learners. The following table summarizes the effects of cognitive strategies on the writing performance of EFL learners.

Table 6

Effects of cognitive strategies on the writing performance of EFL learners

Author	Effects on writing performance	Nº of studies	Percentage
Abdollahzadeh, (2010)	Minor/Nonsignificant effects	5	45.45%
Altunay (2014)	Minor/Nonsignificant effects		
Bui et al. (2023)	Minor/Nonsignificant effects		
Hashempour et al. (2015)	Minor/Nonsignificant effects		
Yuliani & Fadhly (2020)	Minor/Nonsignificant effects		
Chen (2022)	Significant effects	6	55.55%

Ulaywi (2021)	Significant effects
Masbirorotni & Fajaryani (2020)	Significant effects
Mehr et al. (2016)	Significant effects
Pitenoee et al. (2017)	Significant effects
Trapsilo (2016)	Significant effects

N=11

In the studies focused on EFL students' writing skills, six studies (55.55%) reported significant effects, indicating that EFL learners were able to improve their overall writing performance. However, in five studies (45.45%), the effects on learners' writing skills were minor, and in some cases, no effects were observed. Abdollahzadeh (2010) pointed out that students may not be equally aware of the use of cognitive strategies, but teachers can provide training on how to effectively utilize these strategies in the classroom. Furthermore, Altunay (2014) and Bui et al. (2023) mentioned that students tend to employ other strategies, such as affective or social affective strategies, in their writing tasks. Additionally, Yuliani and Fadhly (2020) found that EFL students commonly use compensation strategies in their writing, such as using synonyms, selecting familiar topics and words, taking short pauses, and guessing the meaning of words. However, Chen (2022) demonstrated that cognitive strategies supported EFL learners in improving their writing performance and overall writing strategies.

Moreover, Hashempour et al. (2015) highlighted that both students and instructors experienced improvements in writing skills, emphasizing the significance of teaching pre-writing strategies to EFL learners. Similarly, Ulaywi (2021) and Masbirorotni and Fajaryani (2020) emphasized the importance of cognitive strategies not only in writing but also in other skills such as reading and speaking. The effectiveness of cognitive strategies depends on how learners employ them. Additionally, Mehr et al. (2016) found that using brainstorming as a pre-writing cognitive strategy yielded positive benefits for students in their work, but the correct utilization of this strategy should be taught by instructors. Pitenoe et al. (2017) and Trapsilo (2016) agreed that the control groups in their studies showed improvement in writing performance by primarily utilizing cognitive strategies.

The next part of the analysis focuses on the second research question, which examines the most frequently used cognitive strategies by EFL learners to develop their reading and writing skills. The following table presents the cognitive strategies most commonly employed in the analyzed studies.

Table 7

Most frequent cognitive strategies used by EFL learners to develop and enhance their reading skill

Cognitive strategy	Authors	Nº of studies
Summarizing	Lestari & Wahyudin (2020), Straková (2013), El Marsafy et al. (2019), Rodríguez (2021), Zhang & Guo (2020)	5

Reading slowly and carefully to make sure to understand what is read	Lestari & Wahyudin (2020), Ahmed (2020)	2
Retrieval	Zhang & Guo (2020), Zhang & Sukying (2022)	2
Skimming	Lestari & Wahyudin (2020), Mehrdad et al. (2012)	2
Answering reading comprehension questions	Rodríguez (2021)	1
Comprehending	Zhang & Sukying (2022)	1
Making predictions	Zhang & Guo (2020)	1
Memory	Zhang & Sukying (2022)	1
Note-making	Mahdavi & Azimi (2012)	1
Problem solving	Ahmed (2020)	1
Scanning	Mehrdad et al. (2012)	1
Self-questioning	El Marsafy et al. (2019)	1
Translating	Zhang & Guo (2020)	1
Underlining	Mahdavi & Azimi (2012)	1
Visualizing	Rodríguez (2021)	1

N=23

Table 7 displays the cognitive strategies most commonly utilized by EFLstudents in the classroom. It is evident that five studies (Lestari & Wahyudin, 2020;

Straková, 2013; El Marsafy et al., 2019; Rodríguez, 2021; Zhang & Guo, 2020) highlight summarizing as the predominant cognitive strategy employed to develop and enhance the reading skills of EFL students. However, the strategies of retrieval, reading slowly and carefully for better comprehension, and skimming (Lestari & Wahyudin, 2020; Mehrdad et al., 2012; Ahmed, 2020; Zhang & Guo, 2020; Zhang & Sukying, 2022) exhibited a lesser presence compared to summarizing. Furthermore, retrieval, reading slowly and carefully for better comprehension, and skimming were more prevalent in the studies compared to answering reading comprehension questions, comprehension, making predictions, memory, note-making, scanning, self-questioning, underlining, and visualizing. Each of these strategies was present in one single study (Ahmed, 2020; Mehrdad et al., 2012; Mahdavi & Azimi, 2012; Rodríguez, 2021; Zhang & Guo, 2020; Zhang & Sukying, 2022).

However, despite summarizing being the most frequently used strategy among the selected studies, Lestari and Wahyudin (2020) stated that students tend to underutilize summarizing in their specific case study. Conversely, El Marsafy et al. (2019) demonstrated that summarizing is commonly employed by students to extract ideas from written texts. Additionally, other cognitive strategies were preferred by students in different studies (Ahmed, 2020; Mehrdad et al., 2012; Mahdavi & Azimi, 2012; Rodríguez, 2021; Zhang & Guo, 2020; Zhang & Sukying, 2022).

Table 8

Most frequent cognitive strategies used by EFL learners to develop and enhance their writing skill

Cognitive strategy	Authors	Nº of studies
Brainstorming	Mehr et al. (2016); Masbirorotni & Fajaryani (2020); Hashempour et al. (2015); Chen (2022)	4
Translating	Abdollahzadeh (2010); Altunay (2014); Bui et al. (2023)	3
Elaborating	Bui et al. (2023); Chen (2022)	2
Writing grammar rules	Abdollahzadeh, (2010); Masbirorotni & Fajaryani (2020)	2
Activation	Ulaywi (2021)	1
Analyzing the writings of more knowledgeable students	Abdollahzadeh (2010)	1
Clarification	Chen (2022)	1
Using new words	Abdollahzadeh (2010)	1
Reading books or good writers' compositions to improve writing	Yuliani & Fadhly (2020)	1
Revising	Pitenoee et al. (2017)	1
Resourcing	Pitenoee et al. (2017)	1
Text generating	Pitenoee et al. (2017)	1
Thinking aloud	Trapsilo (2016)	1

Using a dictionary	Masbirorotni & Fajaryani (2020)	1
Writing and practice new expression repeatedly	Yuliani & Fadhly (2020)	1
Writing new material	Masbirorotni & Fajaryani (2020)	1

N=23

Table 8 shows the cognitive strategies most commonly used by EFL learners. Notably, brainstorming emerges as the predominant strategy employed by EFL learners to develop and enhance their writing skills. Four out of the eleven analyzed studies on writing revealed a significant presence of brainstorming (Mehr et al., 2016; Masbirorotni & Fajaryani, 2020; Hashempour et al., 2015; Chen, 2022). Translation ranks as the second most frequent cognitive strategy, appearing in three studies and demonstrating substantial usage (Abdollahzadeh, 2010; Altunay, 2014; Bui et al., 2023). Additionally, writing grammar rules and elaborating were each present in two studies (Abdollahzadeh, 2010; Masbirorotni & Fajaryani, 2020; Bui et al., 2023; Chen, 2022). Table 8 encompasses 12 unique cognitive strategies derived from various studies (Masbirorotni & Fajaryani, 2020; Abdollahzadeh, 2010; Pitenoe et al., 2017; Ulaywi, 2021; Yuliani & Fadhly, 2020; Trapsilo, 2016; Chen, 2022). These strategies include using a dictionary, writing new material, analyzing the writings of more knowledgeable students, utilizing new words, revising, generating text, resourcing, activating, reading books or compositions by skilled writers, practicing new expressions through writing, thinking aloud, and clarification.

The relatively lower presence of the last strategies can be attributed to authors exploring alternative techniques. Furthermore, Ulaywi (2021) and Trapsilo (2016)

utilized specific cognitive strategies for comparison purposes, contrasting them with those already implemented in the classroom. It is worth mentioning that certain studies observed the utilization of similar cognitive strategies among students, such as brainstorming, translation, writing grammar rules, and elaborating (Mehr et al., 2016; Masbirorotni & Fajaryani, 2020; Hashempour et al., 2015; Chen, 2022; Abdollahzadeh, 2010; Altunay, 2014; Bui et al., 2023).

Chapter VI Conclusions

and Recommendations

6.1 Conclusions

The focus of this research synthesis was to identify the effects of cognitive strategies on the reading and writing skills of EFL learners. This section features the conclusions based on the analysis of the studies.

There were two research questions that oriented the data collection of this research synthesis. The first research question attempted to investigate how the use of cognitive strategies affects reading and writing skills of EFL learners. The results of the analyzed studies showed that cognitive strategies offer great benefits. Cognitive strategies allowed EFL learners to enhance their reading and writing skills. In the case of reading, cognitive strategies allowed students to develop greater reading comprehension as well as overcoming reading comprehension difficulties. Likewise, writing cognitive strategies enhanced EFL learners writing skills, as well as enhanced to some extent other language skills as it can be reading, or speaking. Moreover, cognitive strategies allowed students to have a better awareness and understating about other reading or writing skills, as it can be metacognitive strategies, or compensation strategies (Ahmed, 2020; Chen, 2022; Hashempour et al., 2015; Ulaywi, 2021; Mahdavi & Azimi, 2012; El Marsafy et al., 2019; Masbirorotni & Fajaryani, 2020; Mehr et al., 2016; Pitenoe et al., 2017; Rodríguez 2021; Trapsilo, 2016; Zhang & Guo, 2020; Zhang & Sukying, 2022). Cognitive strategies have provento be invaluable in assisting EFL students in the development and enhancement of their reading and writing skills. On the other hand, only few studies did not mention

significant effects of cognitive strategies on the performance of EFL students (Abdollahzadeh, 2010; Altunay, 2014; Bui et al., 2023; Lestari & Wahyudin, 2020; Mehrdad et al., 2012; Straková, 2013; Yuliani & Fadhly, 2020).

The second research question aimed to find which are the most frequent cognitive strategies used by EFL learners to develop and enhance their reading and writing skills. It was found that the most frequently used cognitive strategy to develop and enhance reading skill was summarizing (Lestari & Wahyudin, 2020; Straková, 2013; El Marsafy et al., 2019; Rodríguez 2021; Zhang & Guo, 2020). In the same vein, the most frequently used cognitive strategy to develop and enhance writing skills was brainstorming (Mehr et al., 2016; Masbirrorotni & Fajaryani, 2020; Hashempour et al., 2015; Chen, 2022). Regarding Masbirrorotni and Fajaryani (2020), the most frequently used cognitive strategy was brainstorming, where participants could freely express their thoughts to gather ideas. Brainstorming is a common strategy for writing since it is simple for students to use. On the other hand, in the case of Zhang and Guo (2020), the study stated that the students used summarizing since it is a well-known reading strategy. However, it is important to mention that most of the studies implemented an awareness raising test in order to make students use the strategy. Moreover, there were other cognitive strategies that also have a meaningful presence; these are retrieval, note-making, reading slowly and carefully to make sure to understand what is read, and skimming for reading (aiming to enhance the reading skill) (Lestari & Wahyudin, 2020; Mehrdad et al., 2012; Ahmed, 2020; Mahdavi & Azimi, 2012; Rodríguez, 2021; Zhang & Guo, 2020; Zhang & Sukying, 2022); and translating, writing grammar rules, and elaborating for writing (aiming to enhance the writing skill)

(Abdollahzadeh, 2010; Altunay, 2014; Bui et al., 2023; Chen, 2022; Masbirorotni & Fajaryani, 2020).

The findings revealed that cognitive strategies had a positive impact on the reading and writing skills of EFL learners in the majority of the studies. It is evident that cognitive strategies, such as summarizing and brainstorming, are actively utilized in the classroom. However, it is important to note that not all studies demonstrated benefits for EFL students, thereby preventing us from making generalized claims about the advantages of cognitive strategies for EFL learners.

6.2 Recommendations

Based on the results, and after analyzing the 20 studies selected for this research synthesis, several recommendations emerge for further research and practical implications in the field of cognitive strategies regarding the reading and writing skills of EFL students. These recommendations aim to address the specific gaps identified in the literature and contribute to the advancement of knowledge in Ecuador and beyond.

First, given the scarcity of studies on cognitive strategies in Latin America, particularly in Ecuador, it is crucial to initiate comprehensive research in this area. Future studies should focus on investigating the specific cognitive strategies employed by EFL students in Ecuador, considering the cultural and linguistic context, to better understand their impact on reading and writing skills. By conducting research in Ecuador on reading and writing cognitive strategies, we can contribute valuable insights to the existing literature and bridge the gap in knowledge.

While this thesis included a limited number of studies focusing on young learners, it is essential to include a more representative sample of this population in future research. Considering that only 5% of the analyzed studies focused on children, compared to 60% on adults, it is crucial to explore how cognitive strategies influence the reading and writing skills of young EFL learners. Such studies can provide valuable guidance for educators in developing effective instructional strategies for this specific group.

In addition to quantitative research, future investigations should incorporate qualitative studies to gain a deeper understanding of the students' perspectives on the use of cognitive strategies. Qualitative studies can explore students' experiences, attitudes, and beliefs about the effectiveness and relevance of cognitive strategies in their language learning journey. This methodology will offer valuable perspectives from students and contribute to enhancing instructional methods for educators.

Acknowledging the diverse needs, knowledge levels, and abilities of EFL students, it is essential to adopt a student-centered approach when implementing cognitive strategies in the classroom. Educators should guide the selection and implementation of cognitive strategies according to individual students' profiles. This customization can enhance the effectiveness and relevance of cognitive strategies, ensuring that they align with students' specific learning styles, preferences, and language proficiency levels.

This research synthesis highlights the need for further research on cognitive strategies in the reading and writing skills of EFL students. By conducting research in this specific context, including young learners, incorporating qualitative studies, and

promoting individualized instructional practices, we can enhance our understanding of the role of cognitive strategies in language learning and contribute to the improvement of EFL education.

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