

The Use of Graphic Organizers to Improve Reading Comprehension in EFL/ESL Contexts: A Systematic Literature Review

El uso de organizadores gráficos para mejorar la comprensión lectora en contextos de EFL/ESL: una revisión sistemática de la literatura

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Abstract

Developing reading comprehension skills has been a challenge for many EFL/ESL teachers seeking to foster meaningful learning for their students. As a result, some researchers investigated approaches to solving this problem, such as using graphic organizers, which helped students improve reading comprehension despite the limitations of their interventions in the experiments. Therefore, this systematic literature review aimed to provide robust evidence on the impact of graphic organizers on the development of reading comprehension among students in both EFL/ESL contexts. This article conducted a systematic review using databases such as Google Scholar, JSTOR, SciELO, and ERIC, covering publications from 2021 to 2026. After applying the inclusion and exclusion criteria, 20 scientific articles were selected for analysis in this article. The findings showed that using graphic organizers increased reading comprehension among EFL/ESL students; positive effects were reported across proficiency levels and institutional contexts, though the magnitude of these effects varied across studies. In addition, students meaningfully developed literal, inferential, and critical reading comprehension. Similarly, students were motivated to use critical thinking to analyze and interpret texts more deeply. Finally, graphic organizers are effective tools for developing reading comprehension; thus, they are recommended for use in the reading class.

Keywords: graphic organizers; EFL/ESL contexts; reading comprehension; impact of graphic organizers.

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Resumen

Desarrollar las habilidades de comprensión lectora ha sido un desafío para muchos profesores de inglés como lengua extranjera (EFL/ESL) que buscan fomentar un aprendizaje significativo en sus estudiantes. Como resultado, algunos investigadores exploraron enfoques para resolver este problema, como el uso de organizadores gráficos, que ayudaron a los estudiantes a mejorar la comprensión lectora a pesar de las limitaciones de sus intervenciones en los experimentos. Por lo tanto, esta revisión sistemática de la literatura tuvo como objetivo proporcionar evidencia sólida sobre el impacto de los organizadores gráficos en el desarrollo de la comprensión lectora de los estudiantes en contextos de EFL/ESL. Además, este artículo realizó una revisión sistemática en bases de datos como Google Scholar, JSTOR, SciELO y ERIC, que abarcó publicaciones de 2021 a 2026. Tras aplicar los criterios de inclusión y exclusión, se seleccionaron 20 artículos científicos para su análisis en esta revisión sistemática. Los hallazgos mostraron que el uso de organizadores gráficos aumentó la comprensión lectora entre los estudiantes de EFL/ESL, con efectos positivos en todos los niveles de competencia y en contextos institucionales, aunque la magnitud de estos efectos variaba entre los estudios. Además, los estudiantes mejoraron significativamente su comprensión literal, inferencial y crítica. De igual modo, se motivó a los estudiantes a emplear el pensamiento crítico para analizar e interpretar los textos con mayor profundidad. Finalmente, se concluyó que los organizadores gráficos son herramientas eficaces para desarrollar la comprensión lectora, por lo que se recomienda su uso en la clase destinada a su desarrollo.

Palabras clave: organizadores gráficos; contextos de Inglés como lengua extranjera/segunda lengua; comprensión lectora; impacto de los organizadores gráficos.

Introduction

Developing reading comprehension skills is a major pedagogical challenge for many EFL/ESL teachers. This challenge stems from students' lack of motivation and limited language knowledge among learners. Students can often interpret individual words with the help of a dictionary; however, a meaningful gap remains between word-by-word translation and interpreting the text as a whole. This situation frustrates learners during the acquisition of a foreign or second language, as the main problems that learners face a lack of understanding of the language, which involves limited vocabulary, misunderstandings of word connotations, and unfamiliarity with different grammatical forms, leading to poor reading comprehension (Surmanov & Azimova, 2020). Therefore, the problem does not lie in students' ability to interpret each word in the text, but rather in the need to interpret the text as a whole. In general terms, McArthur (2022) found that poor reading generates anxiety in students because they feel inferior to their classmates due to a lack of comprehension at the moment of reading, leading to fear of making mistakes and being ridiculed by their peers.

From an EFL/ESL perspective, developing reading comprehension in EFL/ESL students is a complex task for teachers due to several factors, such as prior knowledge, meaning construction, and the retention of information from previously read texts for longer periods (Khartite, 2021). This author explained that, to increase learners' reading comprehension, teachers primarily need to ensure learners have prior knowledge of the language. It is important to know this before introducing new information, as schema theory holds that background knowledge influences how new

knowledge is acquired. Therefore, in this case, it is necessary to verify their specific prior knowledge before introducing new knowledge, which will enable them to draw inferences and deeper interpretations of the text, thereby avoiding misinterpretations (Prasansaph, 2024).

Previous studies have shown that one of the main reasons students do not want to study a foreign or second language is their lack of motivation to learn it; in this case, English, which has been an issue in the teaching-learning process due to the complexity involved in developing reading comprehension skills in learners. (Campoverde & Lopez, 2022) A thorough and systematic review of the effectiveness of graphic organizers in improving reading comprehension in teaching English as a foreign or second language is still needed to address the limitations of many previous studies, such as that of Pérez (2024), who acknowledged that their study had some limitations, such as the lack of information on the use of graphic organizers in reading comprehension and the students' low level of English proficiency which was evaluated in their study. As a result, Hezam et al. (2022), suggest transforming the classroom through visual and interactive strategies that serve as effective scaffolding, allowing students to process information autonomously and in a motivating way.

On the other hand, Atanasio and Saavedra (2025), in response to this problem, investigated new educational approaches to developing learners' reading skills in creative and meaningful ways, including the use of graphic organizers.

Therefore, it is important to consider what current research has revealed about the impact of graphic organizers on EFL/ESL learners' reading comprehension, thus based on experimental findings of the studies included in this review, the main objective is to analyze the effectiveness of graphic organizers in improving reading comprehension among EFL/ESL students (Rodríguez & García, 2025) As secondary objectives, this research seeks to highlight the potential limitations of using graphic organizers to develop EFL/ESL learners' reading skills and to examine the main factors, such as the English proficiency level or the types of graphic organizers that the researchers used to promote reading comprehension among their participants (López & López, 2022)

Thus, the research questions for this study are: What is the impact of graphic organizers on reading comprehension among EFL/ESL students, according to existing research? and what factors influence the effectiveness of graphic organizers in improving reading comprehension among EFL/ESL learners?

Theoretical Framework

The process of reading comprehension involves cognitive and social factors in the moment, constructing meaning from written texts (Kusumarasdyati, 2023), argued that the cognitive view refers to the process by which the reader actively constructs meaning rather than simply extracting information from the text, and involves social factors, such as activating information acquired

from a social group's text in light of the student's background. Additionally, Al-Jiboury (2024) stated that, for acquiring the English language, regardless of the learner's context, it is important to develop the four skills (reading, writing, listening, and speaking), with reading as the foundation for all of them. Similarly, another study indicates that reading comprehension is more important for learners' acquisition of English (Al Roomy, 2022). Thus, Al Roomy (2022), reported that, based on their experiment, reading skills play a major role in acquiring English, as reading is the primary means of learning the language. Both studies described reading comprehension as a skill aligned with the other skills (writing, listening, and speaking), and they agreed that developing reading comprehension in students is a complex and difficult task if teaching strategies are not appropriate.

From a cognitive perspective, Todorova (2024), explained that reading comprehension is a mental process of language acquisition for understanding and interpreting written texts, as reflected in both schema theory and cognitive load theory. The first explains how prior knowledge and experiences shape the interpretation of new information in reading comprehension, as proposed by Swiss psychologist Jean Piaget (1962, as cited in Alharbi, 2022). The second focuses on problem-solving and the cognitive processes involved in learning (Todorova, 2024). Then, what is the real meaning of reading comprehension? Based on his investigation, Prayuda (2023) concludes that reading is a cognitive process that enables readers to construct their own meaning from a text. In addition, Zambrano et al. (2024), identify challenges affecting students' learning, including diverse ability levels, lack of motivation, and language barriers in both contexts (EFL and ESL). As a result, teachers need to implement pedagogical approaches, such as the cognitive constructivist approach of Jean Piaget (1976).

Therefore, one strategy the researchers used to improve reading comprehension was graphic organizers. Initially, the term "graphic organizer" was coined as "Structured Overviews" by the American researcher and professor Richard Barron (1970) because of their visual and verbal representations, which have been incorporated into learners' cognitive structures. It is related to, and based on the same theoretical rationale as, Ausubel's (1968) prose organizers, in that these may be regarded as a special form of advanced organizer that links prior knowledge already structured in students' minds to the new knowledge the learner is going to acquire later. (Barron, 1970). Thus, the graphic organizers help students organize their ideas and construct their own knowledge in a meaningful way (Solís-Martínez & Ramas-Arauz, 2024). Therefore, a graphic organizer can be considered a tool or summary method that helps students assess their level of text comprehension and create maps that adapt to their learning methods (Imsa-ard, 2022).

Ausubel's (1968) theory of meaningful learning highlights that new knowledge is built on prior knowledge that students must master. Moreover, Ausubel (1968), visually illustrates these connections by organizing concepts in relation to students' prior knowledge. Thus, the use of graphic organizers facilitates the structuring of information and enables the establishment of cognitive connections, improving reading comprehension in learners. (Vasquez, 2026).

In 1932, British psychologist Frederic Bartlett transformed the term “schema” into a cognitive theory and experimental framework in his classic book “Remembering,” showing that memory and learners’ recall of new information are reconstructive, shaped by prior experiences and cultural context. In the mid-1970s, the term “schema” became part of the cognitive revolution. It was understood as the way people structure and represent their knowledge in memory, becoming an important resource for reading research and pedagogy (Alvermann et al., 2019). Schema theory has been defined in various ways over the years; however, all definitions share a core idea: it concerns the gradual buildup of experiences and knowledge structures within a person’s cognition, whether consciously or unconsciously. In addition, individuals rely on their existing schemas to interpret the text (Wenying, 2022). Therefore, as Wenying (2022) states, schema theory guides students in finding clues in the text and prepares them to read by providing key information that enriches their prior knowledge and helps them understand the reading in a meaningful way.

In another theory, Ausubel (1968), in his meaningful learning theory, emphasized the use of advanced organizers as an instructional tool that connects students’ prior knowledge to existing cognitive structures, reducing cognitive load and improving reading comprehension. (Gulzar, 2025).

Likewise, Lev Vygotsky’s (1978) Sociocultural Theory emphasizes the importance of social interactions and cultural context in shaping cognitive development. Vygotsky (1978) argued that learning is shaped by the learner’s background, language, and cultural tools, and that students modify their prior knowledge through semiotic mediation, which involves signs and symbols to communicate with the world. Consequently, it relates to the sub-theory of the Zone of Proximal Development (ZPD), in which Vygotsky (1978) explained that the ZPD is the gap between what the learner can do independently and what the learner can achieve with the guidance and support of an expert (Ahmed, 2024). This highlights the importance of scaffolding students’ knowledge, a teaching strategy proposed by the American psychologist and professor Jerome Bruner in the 1960s. In this approach, teachers, parents, or classmates with greater expertise in specific topics provide the support learners need to achieve their full potential, thereby improving their cognitive and linguistic development and enabling them to work independently (Putri et al., 2025). Therefore, the graphic organizers can be regarded as semiotic mediation tools that serve as visual scaffolding within the Zone of Proximal Development, enabling collaborative work toward reading autonomy and the construction of complex meanings from texts.

From an EFL/ESL perspective, Rose (1999, as cited in Silva, 2013) compared the two contexts to clarify their differences. First, the EFL context often involves large classes and limited contact hours; second, in the ESL context, learners are more motivated to learn the language and have more time to do so because they are in an English-speaking environment, regardless of class size, which EFL students do not have. EFL students also have fewer opportunities to practice the new language than ESL students, since their environment lacks native speakers or people who speak

English as a native language. As a result, EFL refers to acquiring the English language in a country where English differs from the students' first language, and ESL refers to acquiring a second language in an English-speaking context.

In sum, this theoretical framework articulates three theories, namely schema theory, Ausubel's (1968) meaningful learning theory, and Vygotsky's (1978) sociocultural theory. The theoretical review indicates that prior knowledge influences the development of reading comprehension through the use of different graphic organizers. Despite studies that have examined this topic, there remains a need to understand how graphic organizers can impact students' teaching-learning in acquiring an EFL/ESL language based on readings. Therefore, the theories and approaches used for this study constitute the theoretical and methodological basis of this research. These principles will guide the analysis of empirical data and help explain how interactive and visual strategies, such as graphic organizers, influence students' autonomy and performance.

Literature Review

Reading comprehension is the ability to summarize key information and express it in one's own words by identifying the main ideas, important details, and relevant information in the text (Marginingsih et al., 2025). Similarly, Castillo et al. (2024) argue that reading comprehension is a crucial skill for students studying English; thus, students can understand, interpret, and construct meaning and relate it to their prior knowledge through strategic learning activities. Both authors define reading comprehension skills as tools for identifying ideas and interpreting the main information in texts.

Then, developing this skill can be challenging for many teachers due to its complexity; thus, authors such as Prasansaph (2024), have researched methodological strategies to improve learners' reading comprehension, such as the use of graphic organizers. Thus, according to this author, graphic organizers are visual representations that help learners organize and represent information from texts. In addition, this researcher emphasizes that graphic organizers in reading comprehension represent content visually, which can help readers better comprehend the reading context. In another previous study, the researcher argued that using graphic organizers strengthened cooperative learning among students by linking prior knowledge to new knowledge, making the information more accessible and visual (Yan & Kim, 2023). These studies also showed that using graphic organizers is a visual tool that can guide students in comprehending different texts and, in addition, fosters cooperative learning, which aligns with Lev Vygotsky's (1978), Sociocultural Theory, which emphasizes the importance of social interactions in consolidating learning.

Therefore, this research is based on three theories. First, the theory of schemes, which is the activation of prior knowledge. Second, Ausubel's (1968) meaningful learning, in which new in-

formation is introduced in relation to prior knowledge; and third, Vygotsky's (1978) scaffolding, which, through the Zone of Proximal Development, makes use of visual tools like graphic organizers to reduce that cognitive burden, are fundamental bases for showing how the use of graphic organizers can increase reading comprehension skills in learners. Therefore, based on existing research, this systematic literature review will analyze studies on the impact of graphic organizers on reading comprehension among EFL/ESL students and the factors (e.g., type of graphic organizer, proficiency level, or instructional context) that influence their effectiveness in improving reading comprehension in EFL/ESL contexts.

Impact of Graphic Organizers on Reading Comprehension

Calvin and Gray (2022) reported that their participants showed positive gains in reading comprehension when graphic organizers were used as a teaching strategy, including identifying main ideas and interpreting reading passages without major difficulty. In addition, it facilitated memorization during the evaluation and did not cause students' frustration when acquiring new information from the reading. Hazaymeh and Alomery (2022) argued that, in addition to reading comprehension, students developed critical thinking skills in the language. Therefore, developing it in learners alongside reading comprehension can be challenging for teachers, as students must engage in higher-order thinking to consolidate the text's content more deeply (Setyaningsih & Hariyanti, 2025). Similarly, Lai and Mukundan (2023) used graphic organizers in their study to demonstrate their impact on students' reading comprehension, particularly among good readers. Their results showed that students activated their prior knowledge, in contrast to traditional teaching methods that focus on memorizing information. In addition, this strategy fostered metacognition and promoted critical thinking in the participants. These studies showed that using graphic organizers has a significant and effective impact on students' reading comprehension skills, facilitating their learning in English and, in this way, fostering critical thinking in the students

EFL and ESL context

The present study analyzes the impact of graphic organizers on reading comprehension skills in both EFL and ESL contexts. The teaching methodologies were similar in both contexts, yielding comparable results, but the ESL context had a greater advantage than the EFL context due to the background of the participants at the time of the studies. This will be explained in more depth below.

First, the EFL context. Recent studies, such as Ayiz and Hidayatulloh (2024), have examined the efficacy of real-time graphic organizers for reading comprehension compared with traditional methods in an EFL context. The results showed that using these teaching strategies improved

participants' reading comprehension. In the same context, Min et al. (2023) examined the effects of using graphic organizers on the development of critical thinking in reading comprehension in EFL teaching. In contrast, the findings of this study were more precise: the use of graphic organizers helped EFL students synthesize the content of a given text, thereby improving their critical-thinking skills in reading-comprehension classes. Furthermore, the students felt more motivated to learn English thanks to graphic organizers, which helped them organize, analyze, and synthesize information. Similarly, Marginingsih et al. (2025) conducted their study in an EFL context, but their approach was different. They used English for Specific Purposes (ESP); in other words, students applied the language in an academic context to process specialized information from the reading, thereby developing their critical thinking. These studies showed that using graphic organizers improved reading comprehension in the EFL context; even the last two studies increased critical thinking, which has been considered a significant gap in the development of this skill.

In an ESL context, Castillo et al. (2024) also applied graphic organizers as a teaching strategy to develop reading comprehension; the results were similar to those reported previously. They argued that using graphic organizers in learning activities improves reading comprehension in ESL learners. The results showed that this approach generated mental pictures in learners, helping them understand texts more effectively and increasing their motivation to learn the language.

In sum, this research used both EFL/ESL contexts, using the same teaching strategy to examine the effectiveness of graphic organizers in improving reading comprehension. According to the results, using graphic organizers to improve reading comprehension increased learners' motivation and interest in reading and interpreting texts in both contexts, aligning with Ausubel's (1968) concept of meaningful learning, in which new information is acquired in a creative form for students, outside traditional teaching methods, such as memorization.

Impact on Comprehension Levels

To apply graphic organizers effectively to develop reading comprehension, it is necessary to understand the levels of comprehension: literal, reorganization, inference, prediction, evaluation, and personal response (Day & Park, 2005); however, this systematic literature review will focus on the three main levels: literal, inferential, and critical. First, literal comprehension is the ability to extract and synthesize the main information from the texts they have read. Second, inferential comprehension is the ability to make deeper interpretations of a text's content based on students' prior knowledge or their intuition (Imsa-ard, 2022). Third, critical comprehension refers to students' reactions to the reading, in which they accept or reject information from the text and form judgments about it. In addition, it has an evaluative quality that helps students develop their critical thinking (Pacheco Altamirano, 2022). From this perspective, Salazar-Rodríguez (2020) argued that graphic organizers improved literal reading comprehension but had a limited impact

on inferential reading comprehension. In contrast, Pérez (2024) similarly found that using graphic organizers to improve reading comprehension yielded better results for literal and critical comprehension than for inferring from the text. Both researchers agreed that graphic organizers helped students obtain explicit main ideas from the reading more than implicit ones.

Factors that Influence the Effectiveness of Graphic Organizers

Qi and Jiang (2021) used graphic organizers to develop reading comprehension and applied them in the EFL context. As part of their study, they collected data through teacher interviews on their views of the experiment, in which several teachers agreed that the strategy has proven useful in developing reading comprehension skills in EFL learners and that the results have been excellent for their students. However, as teachers, they find it too hard to create graphic organizers for certain texts because it takes too much time to consolidate the class. Likewise, Imsa-ard (2022) noted that the use of graphic organizers was helpful for its participants, who demonstrated an increase in reading comprehension through this strategy; however, when the students were interviewed, they mentioned that the activity used with the graphic organizers was too long, so they could not finish it on time. Both studies, as evidenced by interviews, showed that the use of graphic organizers improves reading comprehension among EFL students and that they feel motivated to learn English as a foreign language; nevertheless, these findings suggest that implementing graphic organizers may be challenging because classroom time is often limited.

Therefore, developing reading comprehension in learners is a challenging task for EFL/ESL teachers due to various factors, such as the school environment in which students have developed, whether in public or private schools; whether students have taken extra classes in the language at particular institutions; or whether reading has been a habit for them (Campoverde & López, 2022). On the other hand, according to Rodríguez and García (2025), factors such as the appropriate selection of graphic organizers, proper implementation strategies, and attention to individual student needs improve reading comprehension. Then, according to these researchers, to successfully develop reading comprehension in EFL/ESL students, it is necessary to analyze their academic environment before implementing teaching strategies, such as using graphic organizers. In addition, EFL/ESL teachers must research and apply appropriate graphic organizers based on the reading's complexity and the students' needs. From this point of view, it is necessary to investigate the more common types of graphic organizers that researchers have used in their studies, the academic context of the EFL/ESL learners, and their proficiency levels, including whether students studied in schools or universities, whether public or private, or if they had another type of education.

Types of Graphic Organizers

The present study groups the different types of graphic organizers used by researchers to provide a classification that helps better understand each one's function and, in this way, verify whether they can meaningfully develop reading comprehension:

Sequence and chronology organizers. Kalizhanova et al. (2022), explained that it is difficult to provide learners with tasks related to cultural and historical events, especially when these events are presented in English. They used timelines in their study, which proved useful for various educational purposes, such as comparing historical periods with contemporary world events. However, teaching the dates and history of the English language, or general history, tends to be tedious due to the sheer number of dates; thus, a single timeline cannot encompass all relevant dates. Similarly, Rodríguez and García (2025), applied eight graphic organizers, including timelines, which the researchers defined as schedules of activities related to a given subject; however, students preferred using organizing, synoptic, and flow charts due to the great amount of information in the reading. Both studies used the timeline as a teaching methodology to improve learners' reading comprehension by identifying important dates or details; however, for students, this technique was too tedious and complex to use to collect specific information from any type of text.

Hierarchy and conceptual structure organizers. Min et al. (2023), applied the hierarchy diagram in their study, which helped students organize information from general to specific in a vertical format, dividing the text into a logical structure. In the same way, Rodríguez and García (2025), as mentioned in the previous category, used some graphic organizers as the timeline and the synoptic chart but in this case, the students were too familiar with the synoptic chart that they said that they prefer use this type of the graphic organizer due to easy comprehension that it generate in the students at the moment of analyzing the reading. Both studies agreed that this type of graphic organizer improves students' ability to comprehend the text accurately and in an organized manner.

Comparison and relationship organizers. Katemba and Sihombing (2023), compared two graphic organizers, the Venn diagram and the Know, Want, Learn (KWL). Although the results showed no significant difference between the two teaching strategies, all students recommended using both for reading a text in English. Similarly, Juliantini and Wahyuningsih (2026) used a Venn diagram in their study to facilitate post-reading analysis, helping students synthesize information and evaluate different concepts in order. Both studies agreed that these types of graphic organizers help students contrast and comprehend concepts in a meaningful way.

Association and brainstorming organizers. Abrar and Zafar (2025), employed the Neuro-Linguistic Programming (NLP) approach, combined with mind-mapping techniques. The research revealed that learners improved their reading comprehension skills, including identifying main

ideas, making inferences, and connecting various elements within the text. However, Ramadhan et al. (2023), found that most students find studying English too boring for several reasons identified over the years, including inefficient teaching techniques used by traditional teachers which it has decreased their motivation for acquiring the language English; thus, the researchers applied mind mapping to the students to improve motivation by learning English first before developing their reading comprehension, which has been shown to improve it favorably. In the same context, Namaziandost et al. (2023), emphasized the motivation toward learning the English language through reading comprehension, boosting students to share their ideas, making the class more active in learning. In addition, it meaningfully reduced the cognitive burden on learners and motivated them to share their ideas, making the class more communicative. These researchers explained that using graphic organizers, such as mind maps, improved learners' reading comprehension; in addition, it improved their motivation for learning English and their ability to comprehend the context of the reading.

Proficiency Level

Calvin and Gray (2022), found that although their participants had low English proficiency and misunderstood the text, they improved their reading comprehension through double-bubble maps. Similarly, in a study of participants with higher levels of English proficiency, the use of graphic organizers was not novel, as students were already at CEFR B1 in English and were familiar with methodological strategies to improve their reading comprehension. Even with this precedent, the results showed that EFL learners improved their reading comprehension when researchers implemented graphic organizers in their study (López & López, 2022). Both studies showed that using graphic organizers improves reading comprehension among students; however, the difference may be that, in the first study, students had no previous knowledge established; therefore, they acquired new knowledge, whereas in the second, it can be seen reflected in Ausubel's (1968) meaningful learning theory because the students already had prior knowledge, so they reinforced it with the new information. As affirmed by Prasansaph (2024), who conducted a study at a university in Thailand that used the Task-Based Learning (TBL) approach, combined with graphic organizers to develop reading comprehension in an EFL context. The findings showed that learners improved their reading comprehension post-instruction, despite their prior knowledge of the language.

Finally, in a more advanced study with students at the C1 level of English proficiency, the findings again showed that using graphic organizers enhanced EFL students' reading comprehension and supported retention by reducing cognitive load, activating schemata, and encouraging deeper processing (Setyaningsih & Hariyanti, 2025).

In sum, using graphic organizers to increase reading comprehension is effective and creative for all students, regardless of language proficiency; the difference lies in the maximum results students achieve according to their level.

Instructional Context

Setyaningsih and Hariyanti (2025) conducted their study with first-year students in the English Education Department in an EFL reading course, most of whom were proficient in English. They argued that graphic organizers enhance reading comprehension in EFL contexts and support longer-term information retention by reducing cognitive load through schema activation. However, when applying this teaching technique in the same instructional context (a single academic center), it was not possible to obtain more precise data on how the use of graphic organizers improves reading comprehension, which was a limitation for this study.

Additionally, Calvin and Gray (2022) conducted their study in an EFL context, similar to the previous one, albeit from a different perspective. Their participants were students with learning disabilities who had low academic performance in a Spanish-English bilingual middle school. Both students with learning disabilities and the rest of the students showed increased reading comprehension when graphic organizers were used as their learning method. Similarly, both studies noted that using graphic organizers in instructional contexts positively influences learners' activation of their interpretive and comprehension schemes for reading, but they also identified limitations and recommended conducting a study across different instructional contexts to obtain more specific data. However, their context significantly influenced the learners' teaching-learning process, as each educational center has its own teaching style to achieve its institution's main objective.

Methodology

This study is a systematic literature review, which Troxel et al. (2015), defined as a critical assessment of prior research articles addressing a particular issue, using criteria and a screening process to identify key details about the investigation relevant to the current study. Similarly, Norris and Ortega (2010) argued that systematic research synthesis is a current introduction in applied linguistics, used not just in the acquisition of second languages but also in the emergence of core methodologies from psychology, education, and health. To ensure that the required data on the use of graphic organizers to improve reading comprehension in EFL/ESL contexts were reliable, articles were searched in academic databases such as Google Scholar, a supplementary search engine that differs from other academic databases, JSTOR, SciELO, and ERIC. The key terms and their combinations selected to identify appropriate articles for analysis in this research were graphic

organizers, EFL/ESL contexts, reading comprehension, effects of graphic organizers, and impact of graphic organizers.

To select appropriate studies for the research synthesis, a set of inclusion and exclusion criteria had to be met. At the beginning of the research, 30 articles were identified in academic databases as potentially relevant using the main keywords. Each article passed the screening phase; thus, three of the thirty articles did not. Each article was reviewed only once and focused on specific details, such as the abstract and title; however, the main objectives of these articles did not align with the present study's focus. After that, it entered the eligibility phase, during which seven articles were excluded for specific reasons: insufficient information, duplication, and methodological issues. Therefore, a final sample of 20 articles was selected to meet all quality and relevance criteria.

Studies such as these, as well as literature reviews, conference papers, and books, were excluded from this research. However, these sources were used as references for specific required scientific concepts in this research. Second, they had to be written in English only because the research approach was set in an EFL/ESL context; therefore, studies conducted in either EFL or ESL contexts were eligible. Studies conducted in different settings, whether written in English or in a language other than English, were excluded if their main focus was not on English-speaking settings. Third, the academic journals used in this paper's analysis had to be published between 2021 and 2026; however, ideas were drawn from older articles due to their relevance to the present research. Fourth, the research method could be quantitative, qualitative, or mixed-methods, with no design restrictions, given that some studies collected data through interviews with teachers or students to obtain more precise information. However, the collected data had to be more empirical than theoretical to support the findings. Fifth, the population context had to be tailored to each study, since this study did not require participants to fall within a specific age range.

The following journals were used to find information on the use of graphic organizers to increase reading comprehension in EFL/ESL learners: *Liberal Journal of Language & Literature Review*; *Indonesian Journal of Education and Pedagogy*; *International Journal of Science and Management Studies (IJSMS)*; *Learning Disability Quarterly*; *European Journal of Educational Research*; *English Language Teaching*; *J-Shelves of Indragiri (JSI)*; *Journal of English Language Pedagogy, Literature, and Culture*; *Espiraes Revista Multidisciplinaria de investigación*; *Educational Process: International Journal*; *Studies in English language and education*; *Iranian Journal of Applied Language Studies*; *LEARN Journal: Language Education and Acquisition Research Network*; *Sustainability*; *IDEAS: Journal of Language Teaching and Learning*; *Linguistics and Literature*; *Revista multidisciplinaria de Difusão Científica*, *PROCEEDING AISELT*; *Cogent Education*; and *English Education and Literature Journal*. These journals were reliable for this study. In addition, these articles were categorized by their findings on the effects of using graphic organizers on reading comprehension, with a focus solely on the reading skill.

Finally, for this research, it was necessary to include participants' interviews and opinions to complement this study, providing a more realistic focus on the use of graphic organizers to improve reading comprehension in EFL/ESL contexts. The data collected from these interviews were analyzed according to each research question in this paper. In addition to assessing the impact of using graphic organizers on reading comprehension in both EFL/ESL contexts, this study has analyzed several types of graphic organizers used by researchers in the selected articles, such as concept maps, mind maps, and Venn diagrams.

Analysis of the Results

The purpose of this study was to examine the impact of graphic organizers on reading comprehension and the factors that influence their effectiveness in improving reading comprehension in EFL/ESL contexts. This research presents an analysis of results from previous studies, organized into two main questions included in this investigation.

First, Section 1 addresses the impact of graphic organizers on reading comprehension. Second, Section 2 explores the specific variables that improve reading comprehension, such as types of graphic organizers, proficiency level, and instructional context. Finally, Section 3 synthesizes how these factors interact to condition the effectiveness of these pedagogical tools.

Section 1: General Impact of the Graphic Organizers

Regarding the first research question, the findings showed that using graphic organizers in class positively improves reading comprehension skills in both EFL and ESL contexts. The levels of reading comprehension literal, inferential, and critical have been the most used by researchers; however, in some studies, other levels have been found, such as relational, as can be observed in Table 1.

Table 1. Reading Comprehension Levels

Levels	N° studies	Author and Year
Literal	17	Abrar and Zafar (2025); Ayiz and Hidayatulloh (2024); Calvin and Gray (2022); Campoverde and Lopez (2022); Castillo et al., (2024); Imsa-ard (2022); Juliantini and Wahyuningsih (2026); Kalizhanova et al. (2022); Lai and Mukundan (2023); Marginingsih et al. (2025); Namaziandost et al. (2023); Prasansaph (2024); Qi and Jiang (2021); Ramadhan (2023); Rodríguez and García (2025); Setyaningsih and Hariyanti (2025); Yan and Kim (2023)
Inferential	15	*Abrar and Zafar (2025); *Ayiz and Hidayatulloh (2024); *Campoverde and Lopez (2022); *Castillo et al. (2024); *Imsa-ard (2022); *Juliantini and Wahyuningsih (2026); *Kalizhanova et al. (2022); *Lai and Mukundan (2023); *Marginingsih et al. (2025); *Namaziandost et al. (2023); *Prasansaph (2024); *Ramadhan (2023); *Rodríguez and García (2025); *Setyaningsih and Hariyanti (2025); *Yan and Kim (2023)

Levels	N° studies	Author and Year
Critical	9	*Campoverde and Lopez (2022); Hazaymeh and Alomery (2022); *Imsa-ard (2022); *Juliantini and Wahyuningsih (2026); *Kalizhanova et al. (2022); Katemba and Sihombing (2023); Min et al. (2023); *Ramadhan (2023); *Setyaningsih and Hariyanti (2025)
Others	1	*Calvin and Gray (2022)
Total	41	

*Studies were counted in more than one category.

Source: own elaboration.

Table 1 presents the reading comprehension levels, with literal, inferential, and critical being the most common, according to the studies analyzed. Some articles are considered in more than one category; therefore, the total does not match the count of articles analyzed in this research, which is 20. The literal and inferential levels have higher scores because most studies contrasted these levels to show how the use of graphic organizers can impact the development of reading comprehension, progressing from basic to more advanced levels. In contrast, the critical level showed comparatively lower scores, being applied in only nine studies out of the twenty, emphasizing the development of learners' critical thinking, which increased favorably; however, in one study, it was found in an implicit way that the critical level was not consolidated because the students did not reach the required level to evidence the result of this level despite having used graphic organizers in the study (Castillo et al., 2024). This was due to the students' low proficiency in the language, as indicated by the pre- and post-test scores in Table 2.

Table 2. Pre-tests and Post-tests According to the Level of Proficiency

Level	Pre-test	Post-test	Improvement	Author and Year
Beginner	44,25%	87,74%	Absolute: 43,49 Relative: 98,28%	*Calvin and Gray (2022)
	67,50%	82,50%	Absolute: 15% Relative: 22,22%	Rodríguez and García (2025)
	54,17%	62,33%	Absolute: 8,16% Relative: 15,06%	Setyaningsih and Hariyanti (2025)
Intermediate	44,25%	87,74%	Absolute: 43,49% Relative: 98,28%	*Calvin and Gray (2022)
	52%	95%	Absolute: 43% Relative: 82,69%	Campoverde and Lopez (2022)
	N/A	N/A	Absolute: N/A Relative: N/A	Kalizhanova et al. (2022) (qualitative study)
	70,55%	86,95%	Absolute: 16,40% Relative: 23,25%	Min et al. (2023)
	41,07%	52,53%	Absolute: 11,46% Relative: 27,90%	Namaziandost et al. (2023)
	54,17%	62,33%	Absolute: 8,16% Relative: 15,06%	*Setyaningsih and Hariyanti (2025)
Advanced	54,17%	62,33%	Absolute: 8,16% Relative: 15,06%	*Setyaningsih and Hariyanti (2025)

Level	Pre-test	Post-test	Improvement	Author and Year
Total				7 studies
*Studies were counted in more than one category.				

Source: own elaboration.

Table 2 quantifies absolute and relative improvements based on pre- and post-tests. The seven articles analyzed in this table explicitly reported students' levels. Calvin and Gray (2022) worked with students with learning problems at the basic to intermediate levels; their results were impactful, achieving a higher percentage of relative improvement than other articles, at 98.28%. On the other hand, Setyaningsih and Hariyanti (2025) were the only researchers who worked with the three levels of English and explicitly mentioned them in their research: beginner, intermediate, and advanced in general form. Their results showed a relative improvement of 15,06% in developing reading comprehension through graphic organizers. It is worth emphasizing that none of the studies analyzed in this research reported results by English proficiency level; rather, they studied their participants in general, regardless of proficiency. In addition, Kalizhanova et al. (2022), conducted a qualitative study in which researchers obtained their results through interviews with teachers and students. Through this research, we can identify the advantages and disadvantages of using graphic organizers for improving reading comprehension.

In sum, the results showed that for there to be a meaningful increase in reading comprehension with graphic organizers, prior language knowledge is necessary to link new knowledge and thereby achieve positive results. This aligns with Ausubel's (1968) theory of meaningful learning, which argues that new knowledge is built on prior knowledge that students must master.

Section 2: Factors that Influence the Effectiveness of Graphic Organizers

Regarding the second research question, the results showed that using different types of graphic organizers according to their proficiency level or instructional context influences their effectiveness on reading comprehension in EFL/ESL contexts, as shown in Table 3.

Table 3. Types of Graphic Organizers

Graphic Organizer	N° studies	Author and Year
Sequence and chronology organizers	7	Ayiz & Hidayatulloh (2024); Campoverde & López (2022); Castillo et al. (2024); Juliantini & Wahyuningsih (2026); Kalizhanova et al. (2022); Qi & Jiang (2021); Rodríguez y García (2025)
Hierarchy and conceptual structure organizers	12	Abrar & Zafar (2025); *Campoverde & López (2022); *Castillo et al. (2024), Hazaymeh & Alomery (2022); *Juliantini & Wahyuningsih (2026), Lai & Mukundan (2023); Min et al. (2023); Namaziandost et al. (2023); Prasansaph (2024); *Qi & Jiang (2021); *Rodríguez y García (2025); Setyaningsih & Hariyanti, (2025)

Graphic Organizer	N° studies	Author and Year
Comparison and relationship organizers	10	*Ayiz & Hidayatulloh (2024); Calvin & Gray (2022); *Campoverde & López (2022); *Castillo et al. (2024); *Juliantini & Wahyuningsih (2026); Katemba & Sihombing (2023); Marginingsih et al. (2025); *Min et al., (2023); *Qi & Jiang (2021); *Setyaningsih & Hariyanti, (2025)
Association and brainstorming organizers	10	*Abrar & Zafar (2025); *Castillo et al. (2024); *Hazaymeh & Alomery (2022); *Juliantini & Wahyuningsih (2026); *Katemba & Sihombing (2023); *Lai & Mukundan (2023); *Namaziandost et al. (2023); *Qi & Jiang (2021); Ramadhan et al. (2023); Yan & Kim, (2023)
Others	1	Imsa-ard (2022)
Total	40	
*Studies were counted in more than one category.		

Source: own elaboration.

Table 3 shows the main types of graphic organizers analyzed by the researchers in their studies. The totals do not coincide because most articles use more than one graphic organizer; for example, Castillo et al. (2024) used multiple graphic organizers to assess their impact on learners' development of reading comprehension. Therefore, hierarchical and conceptual-structure organizers are more widely accepted due to their ease of organizing ideas, which supports reading comprehension. Sequence and chronology organizers have low acceptance because students who use them find them more complex to understand and use for organizing information in a text. However, only one of the 20 articles chosen for this literature review used a different type of graphic organizer than the rest (Imsa-ard, 2022), the guided question organizer, which the researcher applied to students to obtain information through open questions related to the text according to the proficiency level, as shown in Table 3. However, most studies do not emphasize their proficiency level, as shown in Table 4.

Table 4. Level of Proficiency

Level	Implicit	Explicit
Beginner	8	3
Intermediate	8	6
Advanced	1	1
Total	17	10

Source: own elaboration.

As shown in Table 4, most studies implicitly mention the level of English proficiency. The total for the study does not match the total for the articles analyzed in this research because some studies use more than one proficiency level. Then, according to the approach of each article, the students' level is not considered too important for consolidating their analysis in most of them; however, in the results, they mention limitations in their studies, including students' low proficiency, a lack of motivation to learn the language, and the instructional context in which the study was developed, as shown in Table 5.

Table 5. Instructional Context

Institutions	N°	Context	Key finding	Author and Year
Public	12	EFL	Information organized coherently Students with low averages improved Interpret the text Synthesize information Significant improvement Improve reading comprehension skills and critical thinking Categorize the information Decrease cognitive load	Campoverde and Lopez (2022); Imsa-ard (2022), Juliantini and Wahyuningsih (2026); Kalizhanova et al. (2022); Katemba and Sihombing (2023); Min et al. (2023); Prasansaph (2024); Qi and Jiang (2021); Ramadhan (2023); Rodríguez and García (2025); Setyaningsih and Hariyanti (2025); Yan and Kim (2023)
			Improve literal reading comprehension Structure of thinking Active participation	Calvin and Gray (2022); Castillo et al. (2024); *Kalizhanova et al. (2022); Lai and Mukundan (2023)
Private	5	EFL	Improve critical thinking Improve reading comprehension skills Motivation Metacognitive awareness	Hazaymeh and Alomery (2022); Marginingsih et al. (2025); Namaziandost et al. (2023); *Qi and Jiang (2021); *Yan and Kim (2023)
			Making inferences Identification of clue ideas	Abrar and Zafar (2025);
Not specified	1	EFL	Identify the textual structure Improve reading comprehension skills	Ayiz and Hidayatulloh (2024)
	0	ESL		
Total	20			
*Studies were counted in more than one category.				

Source: own elaboration.

Table 5 shows the impact of graphic organizers on the development of reading comprehension skills. The total number of articles analyzed does not match because three articles are repeated in two classifications. This table indicates that the researchers studied more EFL contexts than ESL contexts; however, the results were meaningful despite some having limited resources in their classes, such as Castillo et al. (2024). Ayis and Hidayatulloh (2024), were the only researchers who did not emphasize the study's location because they did not mention their institutional context, yet the result was the same as the previous one: positive.

In sum, the present study analyzed the effectiveness of graphic organizers in improving reading comprehension among EFL/ESL students. The 20 articles analyzed in this research showed that using graphic organizers had positive effects on students, despite limitations such as limited time or limited language knowledge (Qi & Jiang, 2021). Then, this study employed two research questions as its approach. First, with respect to the first question, the impact of the graphic organizers on the development of reading comprehension was meaningful for students, independent of context (EFL/ESL). Most students had prior knowledge, according to the pre-test results; hence, the final results showed evident improvement, both absolute and relative, regardless of students'

proficiency in the language. Second, with respect to the second research question, the factors that influence the development of reading comprehension using the graphic organizers analyzed in this article were three: the type of graphic organizers that researchers used in their studies, the level of proficiency of the students, and the instructional context in which the previous studies were conducted. According to the analysis, the graphic organizers had to be used in accordance with the readings' context and the students' proficiency level, regardless of the instructional context. Therefore, both questions confirmed that using graphic organizers to develop reading comprehension increased students' knowledge in both EFL/ESL contexts.

Discussion

The main objective of this research was to analyze the impact of graphic organizers on reading comprehension in EFL/ESL contexts, examining factors such as the type of graphic organizer, students' proficiency level, and the instructional context in which learners are taught.

The findings of this study show that using graphic organizers to improve reading comprehension is an effective teaching tool for developing this skill in comparison with traditional teaching methods. This result aligns with previous studies (Solís-Martínez & Ramas-Arauz, 2024) reporting that using graphic organizers helped students construct their own knowledge by identifying and organizing main ideas of the readings in a meaningful way reaffirming the consensus in the literature on the effective impact of graphic organizers on students' reading comprehension skills in both EFL/ESL contexts.

While the positive relationship between the use of graphic organizers and the factors that influence it to increase reading comprehension skills has been documented, this article provides valuable evidence in an EFL or ESL context, where the use of graphic organizers has not shown a meaningful difference in application in either context. Prior knowledge has also been a major factor in obtaining study results; hence, in most studies it was not a problem, as indicated by the results of the initial test.

This confluence of results can be explained through the three theories mentioned in this article as the previous studies, theory of schemes that explains the activation of prior knowledge; Ausubel's (1968) meaningful learning who mentioned that new information influence the prior knowledge; and Vygotsky's (1978) scaffolding who through the Zone of Proximal Development, agree the visual strategies such as graphic organizers to reduce that cognitive burden in the students in acquiring new information from the readings.

On the other hand, limitations include a lack of time to consolidate the study (Rodríguez & Garcia, 2025), a reduced sample size (Prasansaph, 2024), and a lack of motivation to learn the

language (Ramadhan et al., 2023), which were the most common among students, as evidenced in these articles.

Conclusions

In conclusion, this study analyzed the impact of graphic organizers on improving reading comprehension in EFL/ESL contexts. The findings showed that developing students' reading comprehension skills is an important challenge that teachers face every day in the classroom; however, according to the 20 studies analyzed, using graphic organizers improves these skills. Regarding the two research questions, the study concluded that using graphic organizers inside the class to improve the reading comprehension in EFL or ESL students generates a meaningful and effective impact, where factors such as the types of graphic organizers, the level of language proficiency, and the instructional context in which the students are developing influence reading comprehension positively, despite the limitations that had the studies, such as the lack of motivation among students to learn the language.

In addition, the graphic organizers must be used during reading, according to students' context and proficiency levels. For example, Kalizhanova et al. (2022) reported that their participants felt overwhelmed by the amount of information they needed to gather to build their timeline of the text. Then, in this context, the participants preferred using more concise graphic organizers. This result contributes to existing research and motivates teachers to investigate this teaching methodology strategy more, using graphic organizers to improve reading comprehension.

The main limitation identified in this literature review was the lack of articles focusing on graphic organizers to improve reading comprehension in both EFL and ESL contexts. Therefore, it is recommended to analyze graphic organizers more deeply, such as mindfacts, which are another type of graphic organizer, more analytical and useful for improving reading comprehension.

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