

Research Paper

## The Effectiveness of Graphic Organisers for Improving Reading Comprehension in ESL Learners: A Systematic Literature Review

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**Abstract:** The objective of this study is to examine the effects of graphic organisers (GOs) as an instructional tool for enhancing reading comprehension among ESL learners. This paper presents a systematic review of related topics over the past decade, from 2015 to 2020, and found 31 journal papers that fulfilled the research criteria, representing the scholarly work in this field. These studies were published in journals indexed in Google Scholar, Eric, ProQuest, and JStor, and were selected according to a set of inclusion and exclusion criteria. The current literature review reveals that graphic organisers help learners visually organise and structure information, making complex concepts and relationships more accessible. They promote active engagement with the content as well as support the identification of main ideas, supporting details, and relationships between concepts. This enhanced comprehension leads to better retention and understanding of the material. However, the effectiveness of graphic organisers is influenced by issues such as visual literacy challenges, lack of familiarity with GOs, low cognitive level, and selection of an appropriate GO. In conclusion, our findings suggest that incorporating graphic organisers in language learning can be a valuable tool for educators to enhance their students' reading comprehension skills. By considering the influencing factors, educators can tailor their teaching methods to optimise the benefits of graphic organisers.

**Keywords:** Graphic organisers, ESL learners, reading comprehension, second language, systematic literature review (SLR)

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## Introduction

The importance of teaching reading comprehension cannot be understated in the realm of education. Reading comprehension lays the foundation for a child's ability to acquire knowledge, think critically, and effectively communicate their ideas (Alhassan & Ismail, 2018). It is not enough for students to simply decode words on a page; they must also be able to understand and derive meaning from what they read. Teaching reading comprehension encompasses a wide range of skills, including identifying main ideas, making inferences, interpreting figurative language, and analysing text structure. These skills are not only crucial for success in academic subjects, but also in real-life situations where the ability to comprehend written information is essential (De Silva, 2019). To nurture strong readers with a high-level reading comprehension ability, educators must implement explicit teaching strategies that enhance vocabulary development, promote active engagement with diverse texts, and encourage metacognitive thinking. By prioritising the instruction of reading comprehension skills across curriculum areas, educators are equipping their students with lifelong tools necessary for critical thinking and effective communication in both personal and professional contexts.

Beydarani (2015) posited that reading comprehension is critical for the development of lifelong literacy among ESL readers, and an effective reading process hinges on the implementation of appropriate reading comprehension strategies. In ESL reading classrooms, ESL readers employ various reading strategies to comprehend the reading material. These strategies are used to monitor a reader's cognitive progress and to rectify comprehension failures, which necessitates the application of strategies to regulate the reading process. As such, the application of strategies is crucial in helping students to construct meaning from text (Mohamad Razak et al., 2022). The differences in strategy use stem from variations in attitudes and cognitive styles that the reader adopts in response to the information in the reading material. Therefore, the readers need to utilise a reading comprehension strategy that is appropriate for the text they are reading. The use of appropriate reading strategies has a significant impact on the reader's ability to comprehend the reading material successfully (Rusmiati, 2015). This implies that the implementation of the right strategy can enhance comprehension results, while the application of inappropriate strategies can impede comprehension success. To teach reading comprehension, ESL teachers should direct students towards familiarising themselves with and utilising appropriate reading strategies in the ESL reading classrooms.

One reading approach cited in the available literature review and proposed by many reading experts to promote critical reading among students is Graphic Organisers (GOs). Reviewing the literature on reading comprehension, Davoudi and Yousefi (2014) pointed out that GOs promote active engagement in the learning process. When students create or interact with GOs, they actively organise

and connect ideas, stimulating higher-order cognitive processes. This contrasts with passive reading, where learners may struggle to grasp connections and patterns in the material. Moreover, GOs foster critical thinking by encouraging students to analyse relationships between concepts, identify key components, and make connections between different topics. As a result, students gain a deeper understanding of the subject matter. Additionally, Özlem (2017) asserted that GOs can be adapted to various learning styles and subjects, catering to individual preferences and needs. Whether used for note-taking, brainstorming or organising research findings, GO provides a flexible tool applicable across different disciplines. In a nutshell, GOs stand out as a superior learning strategy due to their capacity to present information visually, engage learners actively, stimulate critical thinking and accommodate diverse learning styles.

GOs are invaluable visual aids that facilitate the organisation of information and ideas, thereby enhancing comprehension and retention. These versatile tools come in a variety of types, each tailored to fulfil specific objectives (Özlem, 2017). For instance, concept maps are excellent for brainstorming and as a post-reading tool for ESL students to organise and represent knowledge. It encourages the readers to connect meaningfully with the printed materials, improves self-awareness as well as fosters critical thinking and academic success. Besides, Venn Diagram is a valuable tool for comparing and contrasting two or more entities. They are composed of overlapping circles, with each circle representing a distinct set of characteristics. They aid in visualising the similarities and differences, facilitating a comprehensive understanding of the subject matter.

Additionally, the KWL chart is another valuable graphic organiser to organise knowledge before, during and after the process of learning about a particular topic (Hatahap, 2015). The acronym KWL represents three essential components: K for what the learners already know, W for what they desire to know and L for what they have learned. It is an interactive and effective reading approach to actively engage students at the initial stage of the reading process by activating their prior knowledge (Know), questioning, and seeking solution (Want) and reflecting what they have learned at the end of the learning process (Learned). It provides ESL learners with the purpose of reading and allows the learners to play an active role before, during and after reading (Usman et al., 2018).

While referring to the effects of GO instruction as a teaching method, Wachyunni (2015) reiterated that GO instruction can “promote deep learning as opposed to surface learning in students” (p.160). ESL learners would be directed to use a cognitive mechanism to grasp and understand the reading materials in deep learning. Thus, developing reading skills through GOs is essential when learning English as a second language as it also involves boosting critical thinking in ESL learners (Alhassan & Ismail, 2018).

When graphic organisers are used in learning, they play a crucial role in enhancing cognitive processes by visually representing complex information, fostering critical thinking, and facilitating knowledge retention. Graphic organisers serve as a cognitive tool that aids learners in organising, synthesising, and connecting ideas, making it easier to comprehend and remember information. By employing various types of graphic organisers, such as mind maps, concept maps, and flowcharts, learners can engage in higher-order thinking tasks, such as analysing relationships between concepts, identifying patterns, and generating creative ideas. The importance of graphic organisers lies in their ability to support metacognitive skills, allowing students to become more aware of their learning process and encouraging active engagement with the subject matter. By promoting cognitive organisation and facilitating meaningful learning, graphic organisers serve as an invaluable tool in the educational setting, enabling students to become more effective learners and critical thinkers (Griffin & Tulbert, 1995).

The purpose of Systematic Literature Review (SLR) is to provide a comprehensive, unbiased, and rigorous synthesis of existing research and literature on a specific topic or research question. It involves a systematic and transparent process to identify, select, evaluate, and analyse relevant studies from various sources. To successfully conduct an SLR, carefully crafted research questions are essential for guiding the search strategy, data extraction, and data analysis. The research question defines the specific topic or issue to be investigated and sets the boundaries for what should and should not be included in the review. It acts as a compass, guiding the selection of relevant search terms and keywords for the literature search. The formulated research question aids in developing the inclusion and exclusion criteria, ensuring that only studies directly related to the research question are considered. As reviewers conduct a comprehensive literature search, the research question keeps them on track, helping to identify and screen relevant studies. Once the studies are selected, the research question serves as a framework for data extraction and synthesis, categorising and analysing findings based on the initial query. Throughout the review process, the research question facilitates critical assessment of study quality, and it guides the formulation of meaningful conclusions and the identification of research gaps. Ultimately, the research question is the anchor that ensures the SLR remains focused, relevant, and aligned with its intended purpose, producing valuable insights and contributing to the body of knowledge in the field.

The current SLR collected papers from the past 5 years, from 2015 to 2020 only. The types of sources considered were peer-reviewed journals and academic journals with a focus on databases such as Google Scholar, Eric, ProQuest, and JStor online library. The research questions identified in this study are given below:

1. What are the effects of graphic organisers on reading comprehension performance?
2. What are the main difficulties that impact one's ability to comprehend text when utilising graphic organisers?

Systematic Review Protocol

This section describes the approach and procedures used in conducting the research, including the criteria for selecting literature for the review. The study examines how the use of graphic organisers affects the reading comprehension of ESL learners and investigates the factors that can affect the incorporation of graphic organisers as an instructional tool in second language learning. Figure 1 depicts the systematic process used for conducting the literature review in this study.

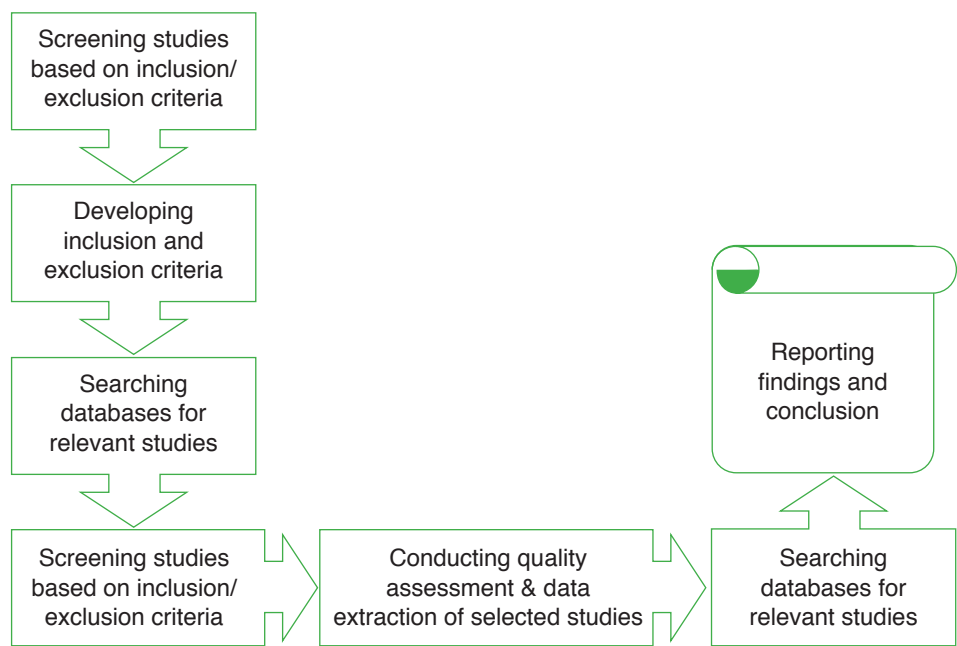


Figure 1. Steps in conducting systematic literature review

This SLR was started after June 2020, and we have been collecting papers from the past 5 years, dating back to 2015. To ensure the success of the review, we began by formulating research questions and defining a search strategy, including relevant keywords. In addition, we established clear inclusion and exclusion criteria to guide the selection of studies. This helped us researchers to identify the types of studies that are most useful for the current review.

Once we had defined the search strategy, we conducted a thorough search of the database to obtain relevant studies based on the selected keywords (De Silva & Rajandram, 2022). However, we understand that the initial search may yield numerous papers that may or may not be relevant to our study. Therefore, the results were filtered to narrow down to only those studies that were useful and relevant to

the current research questions. Once we had identified the relevant studies, we began reviewing them and summarising the results based on the analysis. This involved a detailed examination of each paper, including its methodology, findings, and conclusions. In sum, this systematic literature review would be a comprehensive and rigorous analysis of the literature from the past 5 years. By following these steps, we ensured that the review was both thorough and informative, providing valuable insights into the research questions that we had formulated.

### **Search Strategy**

This section outlines the methodology employed to identify pertinent studies that addressed the research objectives. The following paragraphs provide a comprehensive overview of the approach utilised to achieve these objectives.

### **Data Source**

A comprehensive literature search was conducted utilising various databases, including Google Scholar, Eric, ProQuest, and JStor. These four online databases curate content from reputable academic institutions, journals, conferences, and publications. Researchers can trust the reliability and credibility of these sources, which is crucial for conducting academic research and citing references. Databases such as JStor and ProQuest frequently offer access to complete articles, enabling users to explore content more extensively. This feature proves particularly valuable for conducting a thorough SLR.

The vast number of articles retrieved posed a challenge in identifying relevant literature. To overcome this obstacle, the search was primarily conducted using relevant keywords, and the search scope was broadened by incorporating synonyms and Boolean operators. Furthermore, a secondary search was conducted by reviewing relevant documents to ensure comprehensive coverage. This approach ensured that all relevant literature was included in the study, providing a solid foundation for the research.

### **Search Terms**

To conduct a thorough search for relevant literature, we utilised the keyword search method. Our team carefully selected keywords from the title and abstract that were directly related to the research objectives of our paper. During the advanced search, we selected two to three keywords simultaneously to search side by side, recognising that each database may have a different focus. For this particular topic, we employed the following search terms to gather papers: graphic organiser instruction, reading comprehension, second language, and reading-based. By utilising these specific keywords, we were able to effectively and efficiently gather the necessary information to support our research.

Search Procedure

To begin our research, we conducted a thorough search of relevant data in various paper databases. We carefully screened all papers in three distinct stages to ensure that we only included the most pertinent information. The first filter was based on title and abstract keywords, which allowed us to exclude any studies that were not directly related to our research topic. Next, we used the second filter to further refine our results by excluding any irrelevant literature. Finally, we used the third filter to refine for primary studies based on overall quality. This ensured that only the most reliable and trustworthy sources were included in our research. Throughout the search process, we followed the guidelines provided by Kitchenham et al. (2009) to ensure that our methods were rigorous and thorough. A summary of our entire search process can be found in Figure 2. By carefully screening and filtering our results, we were able to gather the most relevant and reliable information for our research topic. This allowed us to draw accurate and meaningful conclusions from our findings.

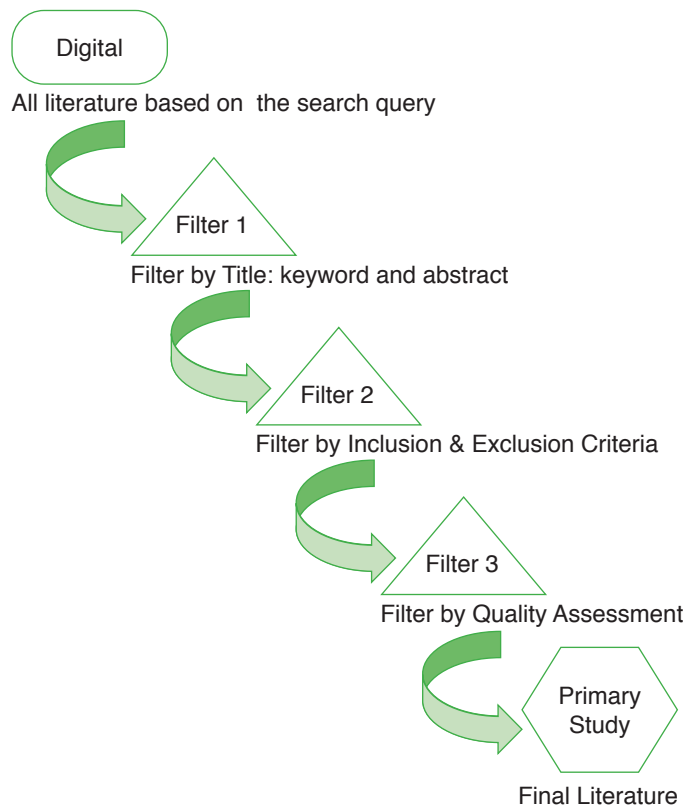


Figure 2. Summary of search process

## Study Selection

### *Inclusion Criteria*

The purpose of this study was to identify research papers that directly addressed the research question at hand, with a specific focus on the topic of English reading comprehension. To ensure the highest quality of research, a set of inclusion criteria was developed. These criteria included the requirement that the study be research papers published in peer-reviewed journals or conferences, with a focus on databases such as Google Scholar, Eric, ProQuest, and JStor online library. Additionally, the study must be relevant to the research question and available in open access and full-text format. Finally, the research must have been published between 2015 and 2020. By adhering to these strict criteria, we were able to identify high-quality research papers that directly addressed our research question.

### *Exclusion Criteria*

The following criteria were used to exclude papers from our research:

1. Papers that are not written in English.
2. Papers, reports, and books that are not considered reliable sources (such as web pages).
3. Studies that are not relevant to our research topic.
4. Studies that are not accessible or cannot be obtained.
5. Duplicate studies were also excluded.

To ensure the validity and reliability of our research, we could only consider studies that met these criteria. This helped us to focus on high-quality research that is directly related to our topic of interest. By excluding studies that did not meet these criteria, we could ensure that our findings were accurate and trustworthy.

## Result and Findings

After cross-referencing to ensure that the selected articles adhered to the inclusion criteria throughout all seven database search results and those of Google Scholar, and duplicate articles or “overlap between databases” (Kitchenham et al. 2009) were removed, 153 relevant articles were selected.

**Table 1.** Overall search results according to search engine

|   | Database       | No of Initial Papers | Filter 1 | Filter 2 | Filter 3 |
|---|----------------|----------------------|----------|----------|----------|
| 1 | Google Scholar | 2,489                | 102      | 84       | 13       |
| 2 | ERIC           | 3,198                | 73       | 58       | 8        |

Table 1. (con't)

|   | Database | No of Initial Papers | Filter 1 | Filter 2 | Filter 3 |
|---|----------|----------------------|----------|----------|----------|
| 3 | ProQuest | 2,713                | 97       | 71       | 2        |
| 4 | JStor    | 2,087                | 112      | 60       | 8        |
|   | Total    | 10,487               | 384      | 153      | 31       |

Quality Assessment

Quality assessment is an essential step in the systematic literature review process. It involves evaluating the relevance and validity of the selected articles to ensure that the review is based on accurate and reliable data. This process is typically carried out using a set of predefined criteria, which allows for objective and systematic evaluation. The quality assessment step helps to identify any potential biases or limitations of the studies, which could impact the validity and generalisability of the review findings. Ultimately, conducting a thorough quality assessment ensures that the systematic literature review is robust and trustworthy, which is crucial for making evidence-based decisions (McDonough, 2017).

It is important to be aware that biases could significantly impact the findings of studies as a result of poor research methodology. As such, it is crucial to exercise caution when interpreting such results. Selecting an appropriate tool to analyse the strength of evidence and any biases present in each paper is also vital. The quality assessment team for this study comprised five professors, all of whom are language experts from different universities in Malaysia. Before the review, they underwent Guidelines and Best Practices training to ensure they fully understood the quality assessment standards. During the training, the trainers familiarised the professors with the guidelines and best practices for conducting SLRs, including tools like PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). Understanding these guidelines ensures that the SLR follows rigorous and transparent methods.

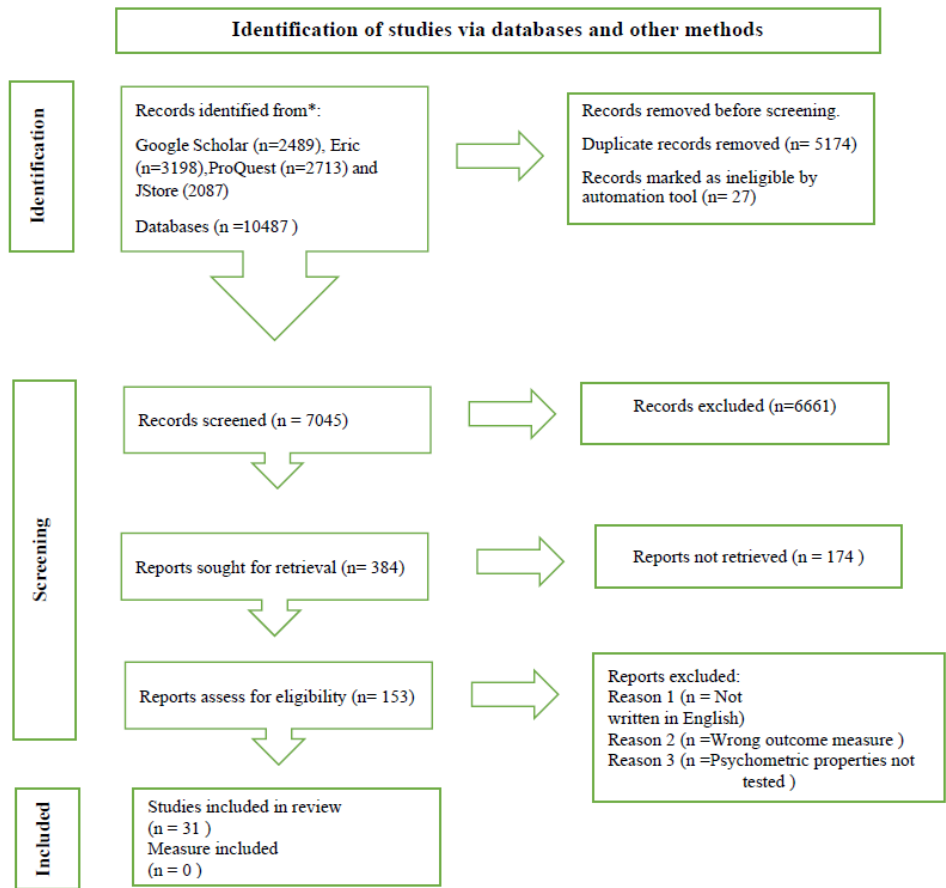
- The specific content or items of the quality assessment review are as follows:
1. Study selection: Were the inclusion and exclusion criteria for selecting studies clearly defined and applied consistently? Were the search methods comprehensive and free from bias?
  2. Study characteristics: Were the characteristics of the included studies clearly presented, such as study design, sample size, population characteristics, intervention or exposure, and outcome measures?
  3. Risk of bias assessment: Was the risk of bias assessed for each included study using a recognised tool or framework? Were the results of the risk of bias assessment presented in a clear and transparent manner?

4. Data extraction: Was data extracted from the included studies in a standardised and reproducible manner? Were any disagreements or discrepancies between reviewers resolved through consensus or arbitration?
5. Data synthesis: Was a clear and appropriate method of data synthesis used, such as meta- analysis or narrative synthesis? Were the methods of analysis appropriate for the type and quality of the data? Were the results presented in a clear and transparent manner?
6. Publication bias: Was the potential for publication bias assessed, such as through funnel plots or other methods? Were any potential biases taken into account when interpreting the results?
7. Conclusion and implications: Were the conclusions supported by the evidence presented in the review? Were the implications of the findings clearly discussed, including any limitations or areas for future research?

To conduct a quality assessment review, four standard options were used: Yes, No, Can't tell, and N/A. Only papers that met the review conditions and had all options as YES were eligible for inclusion in the systematic literature review. After two weeks of evaluation, the review team had identified and selected 31 materials out of 153 papers that met the review criteria and were deemed suitable for inclusion in the SLR.

### **Data Extraction**

The initial search for articles using keywords resulted in 10,487 articles. After reviewing the titles and abstracts, 10,103 articles that did not meet the criteria were removed, leaving 384 articles. After applying the inclusion and exclusion criteria, the search was narrowed down to 153 articles, and a quality assessment was conducted. Finally, the scope of the literature was determined to be 31 articles. The systematic review followed the PRISMA 2020 flow diagram, which is shown in Figure 3. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) model is a widely recognised and respected tool for conducting and reporting systematic literature reviews. It provides a standardised approach to conducting a comprehensive search and selection of relevant articles to include in a systematic review.



**Figure 3.** Flow diagram of PRISMA 2020 for systematic literature review

To extract relevant data for further analysis in a systematic literature review, a thorough assessment of each study’s research content and gaps was conducted. The literature selected for this study was collected and searched on relevant topics from the period between 2015 to 2020. The studies were initially grouped by topic and recorded in an Excel sheet. The data extracted included information such as the search engine used, the type of publication, publication year, author, title, abstract, research significance, research object, research question, research limitation, research results, and other relevant information. By recording this information in an organised and systematic manner, it could facilitate the subsequent analysis and synthesis of the data and enable the identification of trends, gaps, and research needs in the literature.

## Discussion

### **What are the Effects of Graphic Organiser Instruction (GOI) on Reading Comprehension Performance?**

The utilisation of graphic organisers instruction in reading comprehension has been extensively researched and most of the studies reveal that it has a positive impact on students' overall performance (Fajri et al., 2019; Mahdi, 2015; Ozlem, 2017; Rohani & Abdul, 2017). Graphic organisers provide visual representations of complex ideas and concepts, which can facilitate students' ability to identify connections and relationships between different pieces of information. This, in turn, enhances their comprehension of the material and their capacity to retain the information for longer periods (Trang, 2017).

Miandoab et al.'s work (2019) has demonstrated that the use of graphic organisers in reading comprehension instruction can enhance students' intelligence and critical thinking skills. When students are presented with text-based information, they often struggle with making connections between different pieces of information and comprehending the main ideas. Graphic organisers help to address this issue by visually representing the information in a way that is more comprehensible for students (Marashi & Badheri, 2015; Marashi & Kangani, 2018). By utilising graphic organisers, students are also encouraged to think more critically, as they must actively engage with the material and make decisions about how to organise the information presented. For example, students can use graphic organisers to compare different ideas, to identify cause-and-effect relationships, or to make predictions about the future based on what they have read (Usman et al., 2018). By engaging with a text in this way, students can develop more advanced critical thinking skills that will serve them well in all areas of their academic life.

Research has demonstrated that GOI can enhance students' reading comprehension performance by improving their cognitive processes, including critical thinking, analysis, and synthesis. For instance, a study conducted by Morfidi et al. (2018) revealed that GOI significantly boosts the reading comprehension skills of school students, particularly those who had lower reading comprehension abilities at the outset. Similarly, Muhid et al. (2020) found that the KWL Strategy had a positive impact on the reading comprehension performance of senior high school students studying English as a foreign language. These findings suggest that GOI can be an effective tool for educators seeking to improve their students' reading comprehension skills. By providing students with structured guidance and support, GOI can help them develop the cognitive processes necessary for effective reading comprehension (Guo et al., 2020). As such, educators may wish to consider incorporating GOI into their teaching strategies to help their students achieve greater success in reading comprehension.

Moreover, research has shown that the implementation of GOI not only enhances reading comprehension but also positively impacts students' motivation and engagement. By utilising visual aids to structure information, students are encouraged to become more involved in the learning process, leading to heightened motivation and engagement. A recent study conducted by De Silva (2019) revealed that GOI significantly increased the motivation and engagement levels of elementary school students, particularly those who exhibited lower levels of motivation at the outset. This finding highlights the potential of GOI to address the needs of students who may struggle with traditional teaching methods. Furthermore, Hatahap (2015) carried out another research to investigate the effects of GOI on the engagement level of school students. The findings revealed that GOI significantly increases the engagement levels of school students. This suggests that GOI can be a valuable tool for educators seeking to promote active learning and student engagement in the classroom.

In sum, the implementation of GOI can have a positive impact on both reading comprehension as well as student motivation and engagement. These findings underscore the importance of incorporating visual aids and active learning strategies into teaching practices to enhance student learning outcomes.

### **What are the Main Challenges that Impact One's Ability to Comprehend Text when Utilising Graphic Organiser Instruction?**

Graphic organisers are highly effective visual aids that can greatly assist readers in comprehending and organising information presented in a text. However, despite their numerous benefits, they can also present certain challenges that may impede a reader's ability to fully comprehend the text. In other words, certain difficulties can hinder one's ability to comprehend text when utilising this instructional approach.

In the following section, we will delve into some of the primary challenges that can impact a reader's ability to comprehend text when utilising graphic organiser instruction. By understanding these challenges, educators and learners alike can better navigate the potential obstacles and maximise the benefits of this powerful tool.

#### *Visual Literacy Challenges*

According to Ahour (2016), one of the most significant hurdles in conveying information through graphic organisers is the varying levels of visual literacy among readers. While graphic organisers are intended to present information in a visual format, some readers may find it difficult to comprehend the information presented in this manner. For instance, they may struggle to read charts or diagrams or interpret symbols and arrows, leading to confusion and misunderstandings. This challenge can

impede the effectiveness of graphic organisers, hindering the reader's ability to grasp the material (Demiriz & Okur, 2019).

Therefore, it is crucial to consider the audience's visual literacy level when designing graphic organisers to ensure that the information is presented in a clear and understandable manner. Understanding the challenges of visual literacy is essential in creating effective graphic organisers. By taking into account the audience's visual literacy level, we can ensure that the information is presented in a way that is both engaging and easy to comprehend. In a nutshell, it is imperative to recognise the importance of visual literacy when designing graphic organisers. By doing so, we can overcome the obstacles that hinder the effectiveness of these tools and ensure that the information is conveyed in a manner that is both professional and engaging. Ultimately, this will lead to a more comprehensive understanding of the material and a more successful outcome.

### *Lack of Familiarity with GOs*

One of the primary obstacles that can impede an individual's ability to comprehend text when utilising graphic organiser instruction is a lack of familiarity with the graphic organiser format (Jiang & Grabe, 2017). Although graphic organisers are highly effective in providing a visual representation of information, learners who are new to using them may struggle to understand how to use them effectively, which can hinder their ability to receive the full benefits of this tool. This lack of familiarity can lead to confusion and frustration, ultimately hindering comprehension. To overcome this challenge, it is crucial to provide proper instruction on how to use graphic organisers and help readers understand their purpose and function (Kansizoglu, 2017). By doing so, learners can gain a better understanding of how to utilise graphic organisers to their fullest potential, resulting in improved comprehension and retention of information. In short, it is essential to recognise the importance of familiarity with graphic organisers in enhancing one's ability to comprehend text. By providing proper instruction and guidance, learners can overcome this obstacle and reap the full benefits of this valuable tool.

### *Low Cognitive Level*

Learners may face challenges when attempting to effectively utilise graphic organisers due to the high level of cognitive processing required. Graphic organisers demand that learners engage in higher-order thinking skills, such as analysing, synthesising, and evaluating information. If learners lack proficiency in these skills, they may struggle to utilise the graphic organiser effectively, ultimately hindering their comprehension (Mahdi, 2015). It is crucial to note that the use of graphic organisers can significantly enhance learning outcomes. However, it is equally important to

ensure that learners possess the necessary cognitive skills to utilise them effectively. Educators must provide learners with the appropriate support and guidance to develop these skills, enabling them to reap the benefits of graphic organisers fully. As a result, learners with low cognitive levels may face challenges when utilising graphic organisers. However, with the right support and guidance, they can develop the necessary cognitive skills to utilise these tools effectively, ultimately enhancing their comprehension and learning outcome (Shirmohammadi & Salehi, 2017).

### *Selection of an Appropriate GO*

Another primary challenge associated with utilising graphic organisers is the selection of an appropriate type for a given text (Manoli, 2019). This is because not all graphic organisers are equally effective for all types of texts. Without proper guidance, learners may select an unsuitable organiser, which can impede their comprehension of the text. For instance, a Venn diagram may be ideal for comparing and contrasting characters in a novel, but it may not be the best option for organising historical events in a social studies textbook. Therefore, it is crucial to provide learners with clear instructions on which graphic organiser to use for a particular text. This instruction can include identifying the key elements of the text, such as main ideas, supporting details, or cause and effect relationships, and then selecting the appropriate graphic organiser that can best represent these elements visually. By doing so, learners can enhance their ability to comprehend and analyse the text effectively, ultimately improving their overall reading comprehension skills (Marashi & Bagheri, 2015). Therefore, selecting the right graphic organiser is a critical step in utilising this powerful tool to enhance reading comprehension. By providing clear guidance and instruction, learners can maximise the benefits of graphic organisers and achieve greater success in their academic pursuits.

## **Conclusion**

In conclusion, GOs play a pivotal role in enhancing reading comprehension among learners. By visually presenting information, GOs assist students in organising complex texts, fostering improved retention and critical thinking skills. The visual representation of ideas allows learners to grasp the overall structure of the material and identify key concepts, leading to a deeper understanding of the content.

The implications of using GOs in reading comprehension are significant. By encouraging active engagement, GOs prompt students to interact with the text actively, rather than passively consuming information. This promotes higher levels of cognitive processing and metacognitive awareness, as students reflect on their comprehension strategies and adjust their approach accordingly. As a result, learners become more self-regulated and independent in their learning journey.

Furthermore, GOs facilitate the identification of relationships and connections within the text, enabling students to analyse cause-effect relationships, compare and contrast information, and infer meaning from context. This not only strengthens their comprehension but also enhances their critical thinking skills, which are essential for making informed judgments and decisions in various academic and real-life contexts.

To make the most of the advantages GOs have to offer, educators can adopt several effective teaching pedagogies. Firstly, teachers should actively integrate GOs into their instructional practices, guiding students on how to construct and utilise GOs effectively. Modelling the process of creating GOs and providing explicit instructions empowers students to apply these strategies independently in their reading tasks. Secondly, recognising the diverse learning preferences of students, teachers should offer a variety of GO formats and allow students to choose the one that best suits their learning style. This personalisation promotes engagement and motivation, as students feel empowered and connected to the learning process. Moreover, collaborative learning activities involving GOs can be beneficial. Group discussions and peer reviews of GOs encourage active participation and create a supportive learning environment. Through collaboration, students can gain new perspectives and insights, enriching their understanding of the material. Lastly, continuous assessment and feedback are essential to monitor students' progress and ensure the effective use of GOs. Regularly reviewing students' GOs allows teachers to identify areas for improvement, provide constructive feedback, and tailor instruction accordingly. This iterative process helps students refine their comprehension strategies and reinforce their learning.

In conclusion, GOs are valuable tools that have a profound impact on reading comprehension. By implementing these pedagogical strategies, educators can harness the full potential of GOs and empower students to become proficient, independent readers with enhanced critical thinking skills. As students develop stronger comprehension abilities, they are better equipped to succeed academically and become lifelong learners, capable of navigating complex information and understanding the world around them.

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## References

- Ahour, T., & Haradasht, P. N. (2014). The comparative effect of using competitive and cooperative learning on the reading comprehension of introvert and extrovert EFL learners. *Advance in Language and Literary Studies*, 5(4), 206–215.

- Alhassan, A., & Ismail, K. (2018). Social constructivism-based reading comprehension teaching design at Politeknik Negeri Sriwijaya. *Arab World English Journal (AWEJ)*, 9(4), 447–467.
- Beydarani, V. (2015). The influence of concept mapping on reading comprehension of Iranian English students employing persuasive and descriptive texts. *Journal of Language Teaching and Research*, 6(1), 196–203. <https://doi.org/10.17507/jltr.0601.24>
- Davoudi, M., & Yousefi, D. (2014). *The effect of graphic organizer instruction on reading comprehension improvement of ESL learners in Iran* [Conference presentation]. International Conference on Literature and Linguistics, Rome, Italy.
- De Silva, V. (2019). Developing reading comprehension skills in university students studying in the open & distance learning environment by using KWL method. *Commonwealth of Learning*, 13(3), 9.
- De Silva, M. B., & Rajandram, K.V. (2022). Tracing racially inclusive identity in Malaysian theatre: A systematic literature review. *Asia-Pacific Journal of Futures in Education and Society*, 1(2), 69–84.
- Demiriz, H. N., & Okur, A. (2019). Orthographic depth and orthographic depth of Turkish Language. *Modern Journal of Language Teaching Methods*, 9(1), 42–51.
- Fajri, F. A, Susilohad, G. & Elyono, D. (2019). Improving students' reading comprehension through KWL strategy. *English Education Journal*, 7(3), 325–332.
- Griffin, C. C., & Tulbert, B. L. (1995). The effect of graphic organizers on students' comprehension and recall of expository text: A review of the research and implications for practice. *Reading and Writing Quarterly*, 11, 73–89. doi:10.1080/1057356950110106
- Guo, D., Zhang, S., Wright, K. L., & McTigue, E. M. (2020). Do you get the picture? A meta-analysis of the effect of graphics on reading comprehension. *AERA Open*, 6(1), 233285842090169. <https://doi.org/10.1177/2332858420901696>
- Hatahap, S. M. (2015). *The effect of using K-W-L strategy on students' reading comprehension at grade VIII MTs YPKS Padangsidimpuan* [Unpublished undergraduate thesis]. IAIN Padangsidimpuan, Indonesia.
- Jiang, X., & Grabe, W. (2017). Graphic organisers in reading instruction: Research findings and issues. *Reading in a Second Language*, 19(1), 34–55.
- Kansizoglu, H. B. (2017). The effect of graphic organisers on language teaching and learning areas: A meta-analysis study. *Egitim ve Bilim*, 42(191), 139–164.
- Kitchenham, B., Brereton, O. P., Budgen, D., Turner, M., Bailey, J., & Linkman, S. (2009). Systematic literature reviews in software engineering—a systematic literature review. *Information and Software Technology*, 51, 7–15.
- Mahdi, S. A. (2015). *The effectiveness of using GO Strategies on tenth graders' reading comprehension* [Unpublished master's thesis]. Al-Azhar University, Palestine.
- Manoli, P. (2019). *Developing reading strategies in elementary ESL classrooms* [Unpublished doctoral thesis]. Greece.
- Marashi, H., & Bagheri, N. (2015). Using concept mapping and paraphrasing for reading comprehension. *English Language Teaching Journal*, 5(3), 12–18.

- Marashi, H., & Kangani, M. (2018). Using concept mapping and KWL in reading Classes. *Journal of Language and Translation*, 8(2), 93–106.
- McDonough, K. (2017). Experimental research methods. In S. Loewen & M. Sato (Eds), *The Routledge Handbook of Instructed Second Language Acquisition* (pp. 562–576). Routledge.
- Miandoab, A.D, Dortaj, F, & Farrokhi, N. (2019). Comparison of effect of KWL educational strategy and concept mapping strategy on students' critical thinking. *Iranian Journal of Educational Sociology*, 3(8), 95–107.
- Mohaidat, M. M. T. (2018). The impact of electronic mind maps on students' reading comprehension. *English Language Teaching*, 11(4), 32–42. <https://doi.org/10.5539/elt.v11n4p32>
- Mohamad Razak, N., Tharumaraj, J. N., Rajandram, K. V., Ponnudurai, P., Pereira, J. T., Jimbun, S. L., Cheah, J. K. S., & Tee, K. P. L. (2022). Development and implementation of an online English Entrance Test system during the COVID-19 pandemic in a Malaysian university. *Asia-Pacific Journal of Futures in Education and Society*, 1(2), 85–104.
- Morfidi, E., Mikropoulos, A., & Rogdaki, A. (2018). Using concept mapping to improve poor readers' understanding of expository text. *Education and Information Technologies*, 23(1), 271–286. <https://doi.org/10.1007/s10639-017-9600-7>
- Muhid, A., Amalia, E. R., Hilaliyah, H., Budiana, N., & Wajdi, M. B. N. (2020). The effect of metacognitive strategies implementation on students' reading comprehension achievement. *International Journal of Instruction*, 13(2), 847–862. <https://doi.org/10.29333/iji.2020.13257a>
- Ozlem, O (2012). The effect of graphic organizer on reading comprehension achievement of ESL learners. *Pamukkale University Journal of Education*, 32, 37–45.
- Rohani, P., & Abdul, M. (2017). Facilitating reading comprehension among ESL learners using graphic organisers. *Malaysian Journal of ELT Research*, 13(1), 30–42.
- Rusmiati. (2015). *Using KWL strategy to improve the reading comprehension skills*. <https://media.neliti.com/media/publications/215604-using-kwl-strategy-to-improve-students-r.pdf>
- Shirmohammadi, M., & Salehi, M. (2017). Comparative effect of scaffolding instruction and self-regulated learning on ESP learners' reading comprehension. *International Journal of English Language & Translation Studies*, 5(4), 203–213.
- Trang, P. T. (2017). The effect of concept mapping on ESL students' reading comprehension. *European Journal of English Language Teaching*, 2(2), 178–203. <https://doi.org/10.5281/zenodo.581801>
- Usman, B., Fata, I. A., & Pratiwi, R. (2018). Teaching reading through Know- Want-Learned (KWL) strategy: The effects and benefits. *Englisia Journal of Language, Education & Humanities*, 6(1), 35–42.
- Wachyunni, S. (2015). *Scaffolding and co-operative learning: Effects on reading comprehension and vocabulary knowledge in English as a second language* [Unpublished doctoral thesis]. University of Groningen, Netherlands.