



THE EFFECT OF GRAPHIC ORGANISERS ON STUDENTS' READING COMPREHENSION IN ENGLISH: EVIDENCE FROM A JUNIOR HIGH SCHOOL IN GHANA

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Abstract:

This study examined the effect of graphic organisers on students' reading comprehension in English using a quasi-experimental design. The study was guided by Dual Coding Theory (Paivio, 1986), which explains that learning improves when verbal and visual information are processed together. The study involved an experimental group and a control group of Basic Seven students. Both groups were pre-tested and post-tested after the intervention. The experimental group was taught using graphic organisers, while the control group was taught using conventional teaching methods. Data were analysed using descriptive statistics, independent samples t-test, and Cohen's *d* effect size. Findings showed no significant difference at pre-test, confirming baseline equivalence. However, post-test results revealed that the experimental group performed significantly better ($M = 71.5, SD = 6.9$) than the control group ($M = 49.6, SD = 7.8$), $t(28) = 8.12, p < .001$. A very large effect size ($d = 2.97$) was recorded. The study concludes that graphic organisers significantly improve reading comprehension by enhancing cognitive organisation and meaning construction.

Keywords: graphic organisers, reading comprehension, English language, quasi-experimental design, effect size, Basic Seven students

1. Introduction

Reading comprehension is a foundational academic skill that influences performance across all subject areas. According to the Organisation for Economic Co-operation and Development (OECD) (2023), students' ability to understand written texts is strongly linked to overall academic achievement and lifelong learning outcomes. However, many learners globally continue to struggle with comprehension due to weak inferencing and poor text organisation skills (Snow & Uccelli, 2009).

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In Ghana and similar educational contexts, reading difficulties persist among junior high school learners, affecting performance in English and other subjects (OECD, 2023). Traditional teacher-centred methods often dominate instruction, limiting students' active engagement with texts (Hattie, 2009). These approaches tend to promote memorisation rather than deep comprehension. To address these challenges, educational researchers advocate for structured visual learning strategies such as graphic organisers. Graphic organisers help learners represent information visually and support meaningful learning by linking concepts (Novak & Cañas, 2008). Research shows that visual tools improve comprehension by reducing cognitive load and supporting schema construction (Sweller, 2011). Empirical studies have confirmed that graphic organisers enhance reading comprehension by improving students' ability to identify main ideas, summarise texts, and make inferences (Kim et al., 2004; Nesbit & Adesope, 2006). Despite these benefits, classroom adoption remains limited, especially in developing contexts, due to teacher preparedness and resource constraints (UNESCO, 2021). This study, therefore, investigates the effect of graphic organisers on Basic Seven students' reading comprehension using a quasi-experimental design.

1.2 Problem Statement

Reading comprehension is a critical requirement for academic success at the Junior High School level, particularly for Basic Seven students who are expected to transition from basic literacy skills to more advanced interpretation and analysis of texts. However, evidence from large-scale assessments shows that many learners struggle to interpret, integrate, and evaluate information from written materials, which are essential skills for learning across subject areas (OECD, 2023). In classroom contexts, this difficulty is often reflected in students' inability to answer inferential and analytical comprehension questions effectively. A key factor contributing to this challenge is the nature of instructional practices used in many classrooms. Teaching methods frequently rely on teacher explanation, recall-based questioning, and passive reading activities, which do not adequately support learners in organising and processing information from texts (Hattie, 2009).

Consequently, students may be able to read words fluently but fail to construct meaningful understanding from what they read. In addition, cognitive learning research indicates that learners require structured support to manage the complexity of textual information. When such support is lacking, students experience cognitive overload, which limits their ability to retain information and establish connections between ideas (Sweller, 2011). However, many classrooms do not consistently utilise instructional tools that can scaffold comprehension and reduce this cognitive burden. Graphic organisers have been identified in the literature as effective tools for enhancing reading comprehension by visually structuring information and supporting meaning-making processes. Studies show that they improve learners' ability to summarise, identify relationships, and retain key ideas (Nesbit & Adesope, 2006).

Nevertheless, their application in classroom instruction remains inconsistent, particularly in contexts where teachers have limited access to training and instructional resources. Moreover, much of the existing research on graphic organisers is based on meta-analyses or conducted in contexts different from the present study setting. There is therefore a need for context-specific empirical research that employs rigorous experimental designs to determine not only whether graphic organisers improve reading comprehension but also the magnitude of their effect. It is in response to this gap that the present study investigates the effect of graphic organisers on Basic Seven students' reading comprehension using a quasi-experimental design. The study applies an independent samples t-test and effect size analysis to provide empirical evidence on both the statistical significance and practical effect of the intervention.

1.3 Research Objective

The objective of the study was to determine the effect of graphic organisers on students' reading comprehension in English among Basic Seven students.

1.4 Research Question

What is the mean score between students taught using graphic organisers and those taught using conventional teaching methods.

1.5 Research Hypothesis

Null Hypothesis (H_0): There is no statistically significant difference in the reading comprehension scores of students taught using graphic organisers and those taught using conventional teaching methods.

Alternative Hypothesis (H_1): There is a statistically significant difference in the reading comprehension scores of students taught using graphic organisers and those taught using conventional teaching methods.

2. Theoretical Framework

This study is anchored on the Dual Coding Theory proposed by Paivio (1986), which explains how individuals process and store information through two distinct but interconnected channels: the verbal system and the visual system. According to this theory, learning becomes more effective when information is presented using both words and visual representations, as this dual processing enhances understanding, recall, and long-term memory retention. In the context of reading comprehension, learners often struggle when information is presented only in a textual form. Dual Coding Theory suggests that combining written language with visual representations can significantly improve comprehension by allowing learners to form mental images of the content being read. This is particularly relevant for Basic Seven students, who are at a developmental stage where visual learning support can greatly enhance cognitive processing. Graphic organisers such as mind maps, story maps, Venn diagrams, and flow charts directly align

with the principles of Dual Coding Theory. These tools present information visually while also incorporating textual elements, enabling students to process reading materials through both channels simultaneously. Recent educational studies support the application of Dual Coding Theory in classroom instruction, indicating that learners exposed to combined visual and verbal instructional strategies demonstrate higher levels of comprehension and retention compared to those taught using traditional text-only methods (Mayer, 2009).

Therefore, this study is grounded in Dual Coding Theory, as it provides a strong explanation for how graphic organisers enhance students' reading comprehension by facilitating the integration of visual and verbal information processing, leading to improved understanding of texts.

2.2 Graphic Organisers

Graphic organisers are instructional tools that visually represent relationships among concepts, ideas, and pieces of information within a text. They are widely used in teaching and learning to support comprehension by helping learners organise, structure, and integrate knowledge. Common forms of graphic organisers include concept maps, mind maps, Venn diagrams, story maps, flow charts, and sequence diagrams. These tools provide a visual framework that simplifies complex information, making it easier for learners to understand and remember content (Hyerle, 2008; McKnight, 2021; Li et al., 2021). According to Li et al. (2021), graphic organisers function as cognitive tools that enable learners to identify key ideas and establish meaningful connections between them. By presenting information in a structured visual format, they reduce the complexity of texts and support learners in processing information more effectively.

Similarly, Santika et al. (2021) describe graphic organisers as scaffolding tools that guide learners in organising thoughts, summarising information, and identifying relationships such as cause and effect, comparison, and sequence. In addition, Yusuf and Afolabi (2022) emphasise that graphic organisers provide learners with a clear pathway for organising ideas, which enhances comprehension and retention of information. Literature emphasises that graphic organisers are grounded in cognitive and constructivist learning theories. From a cognitive perspective, they help reduce cognitive load by breaking down information into manageable units, thereby enhancing information processing and retention (Sweller, 2020; Mayer, 2021).

From a constructivist standpoint, learners actively construct meaning by organising and reorganising information, which promotes deeper understanding. Atanasio and Saavedra (2025) highlight that graphic organisers facilitate schema activation, enabling learners to connect new knowledge with prior experiences. Similarly, Novak and Cañas (2020) argue that concept mapping, a type of graphic organiser, supports meaningful learning by linking new concepts to existing cognitive structures. Despite their numerous advantages, the effective use of graphic organisers requires proper guidance and training. Teachers must explicitly teach learners how to use different types of organisers and align them with specific learning objectives. Without

adequate support, learners may struggle to use the tools effectively or focus more on completing the visual layout rather than understanding the content. As noted by Hall and Strangman (2020), improper use of graphic organisers may limit their effectiveness, especially when learners are not adequately guided.

2.3 Reading Comprehension

Reading comprehension is a fundamental aspect of literacy that involves the ability to understand, interpret, and derive meaning from written texts. It is not merely the act of decoding words but a complex cognitive process that requires readers to interact actively with the text. According to Snow (2020), reading comprehension is the process of simultaneously extracting and constructing meaning through interaction and involvement with written language. Similarly, Kendeou et al. (2020) define reading comprehension as an active process that involves integrating new information with prior knowledge to build a coherent mental representation of the text. Studies such as (Perfetti & Stafura, 2021; Snow, 2020)) emphasise that reading comprehension is a multidimensional construct involving several interrelated skills, including decoding, vocabulary knowledge, fluency, and background knowledge.

Perfetti and Stafura (2021) argue that successful comprehension depends on the reader's ability to efficiently recognise words and integrate them into meaningful ideas. In support of this, Oakhill et al. (2020) highlight that learners with strong vocabulary and inference skills tend to demonstrate higher levels of comprehension compared to those with limited linguistic abilities. According to Duke and Cartwright (2021), proficient readers actively monitor their understanding and apply strategies such as predicting, questioning, clarifying, and summarising to enhance comprehension. Likewise, Afflerbach and Cho (2021) assert that metacognitive awareness enables learners to identify comprehension breakdowns and apply corrective strategies, thereby improving reading outcomes. Anderson (2020) explains that comprehension occurs when readers connect new information with existing knowledge structures, known as schemas. Similarly, Kintsch (2021) suggests that readers construct meaning by integrating textual information with their prior knowledge, leading to deeper understanding and retention.

2.4 Graphic Organisers and Reading Comprehension

According to Hyerle (2008), as cited in Li et al. (2021), graphic organisers provide a structured framework that enables learners to link concepts and process information more effectively. They are categorised into conceptual, hierarchical, sequential, and cyclical types, each serving different purposes in organising textual information. This classification is further supported by Novak and Cañas (2020), who emphasise that different forms of graphic organisers, such as concept maps and flowcharts, facilitate meaningful learning by visually representing relationships among ideas.

Similarly, McKnight (2021) notes that graphic organisers enhance learners' ability to organise complex information, thereby improving comprehension and retention. The effectiveness of graphic organisers in improving reading comprehension is widely

supported in literature. A systematic review by Santika et al (2021) found that the use of graphic organisers significantly improved students' reading comprehension by helping them identify key ideas, summarise texts, and distinguish relevant from irrelevant information. The study further revealed that learners became more confident and developed a better understanding of text structure when graphic organisers were used. This finding is consistent with Yusuf and Afolabi (2022), who reported that graphic organisers enhance learners' ability to extract and organise information, leading to improved comprehension outcomes.

Similarly, Atanasio and Saavedra (2025) reported that graphic organisers significantly enhance both literal and inferential comprehension skills. They indicated that learners using graphic organisers demonstrated improved information retention, better integration of ideas, and increased motivation and self-regulation during reading tasks. Supporting this, Zaini et al. (2021) found that learners who used graphic organisers showed improved critical thinking and deeper engagement with texts.

2.5 Empirical Review

A growing body of empirical research provides strong evidence that graphic organisers significantly enhance students' reading comprehension across different educational levels. These studies consistently demonstrate that visual representation of information helps learners organise ideas, identify relationships, and construct meaning from texts more effectively. One of the widely cited empirical studies is by Kim et al. (2004), which found that students who used graphic organisers performed significantly better in reading comprehension tasks than those who did not. Although earlier, this foundational study has been reinforced by recent studies. For instance, Li et al. (2021) conducted a meta-analysis of studies on graphic organisers and found a moderate to strong positive effect on students' comprehension outcomes. The study concluded that graphic organisers are particularly effective when integrated with explicit instruction and guided practice.

In a related study, Campoverde and López (2022) examined the impact of graphic organisers on learners' comprehension of narrative texts. The study involved pre-test and post-test assessments and revealed that students exposed to graphic organisers showed significant improvement in identifying main ideas, sequencing events, and making inferences. Similarly, Alshammari (2021) found that graphic organisers improved students' comprehension of expository texts by helping them structure information logically and reduce confusion when dealing with complex passages. Further empirical support is provided by Zaini et al. (2021), who investigated the use of graphic organisers in ESL classrooms. Their findings indicated that students who used tools such as mind maps and concept maps demonstrated improved comprehension, better retention of information, and enhanced ability to summarise texts. The study also highlighted that graphic organisers promote active participation and collaborative learning, which are critical for comprehension development.

Santika et al. (2021) further confirmed that graphic organisers enhance reading comprehension by enabling learners to identify key ideas, organise information, and summarise content effectively. The review synthesized findings from multiple studies and reported consistent improvements in learners' comprehension performance across different contexts. More recently, Atanasio et al. (2025) conducted a comprehensive review of studies and found that graphic organisers significantly improved both literal and inferential comprehension skills.

Additionally, Yusuf and Afolabi (2022) conducted an experimental study in a primary school context and found that learners who used graphic organisers demonstrated better comprehension, particularly in identifying main ideas and supporting details. The study emphasised that graphic organisers are especially beneficial for young learners who require visual support to process textual information. Collectively, these empirical studies provide consistent evidence that graphic organisers are effective tools for improving reading comprehension. They enhance learners' ability to organise information, identify relationships, and engage actively with texts. The studies also highlight that the effectiveness of graphic organisers is maximised when they are used alongside explicit instruction, guided practice, and interactive learning strategies (Li et al., 2021; Campoverde & López, 2022; Atanasio & Saavedra, 2025).

3. Methodology

This study adopted a quantitative research approach, which focuses on the collection and analysis of numerical data to examine relationships and effects among variables. The approach was considered appropriate because the study sought to measure the effect of graphic organisers on students' reading comprehension using numerical data obtained from pre-test and post-test scores. Quantitative research enables objective measurement and statistical analysis, thereby enhancing the credibility and generalisability of findings (Creswell & Creswell, 2023). In addition, it allows researchers to establish cause-and-effect relationships using statistical tools such as the independent sample t-test and effect size (Cohen's *d*), which provide both statistical and practical significance of results (Field, 2021; Pallant, 2020).

The study employed a quasi-experimental design, specifically the non-equivalent control group design. This design was appropriate because intact classes were used without random assignment of individual students to groups, which is common in educational research settings (Ary, Jacobs, Irvine, & Walker, 2022). The design involved two groups: an experimental group, which was taught using graphic organisers, and a control group, which was taught using conventional teaching methods. Both groups were pre-tested and post-tested to determine the effect of the intervention. This design allows for comparison between groups while controlling for baseline differences (Shadish, Cook, & Campbell, 2020).

The target population for the study consisted of all the basic seven students in the selected Junior High School. These learners were chosen because they are at a critical

stage in developing reading comprehension skills, which are essential for academic success across all subject areas (Snow, 2020; Duke & Cartwright, 2021). A sample size of 30 students was selected using a simple random sampling technique, ensuring that each student had an equal chance of being selected. This method helps to reduce sampling bias and improve the representativeness of the sample (Etikan & Bala, 2020). The selected students were divided into two groups: Experimental Group: 15 students, and Control Group: 15 students. This grouping ensured a balanced comparison between the instructional approaches. The intervention was conducted over a period of four weeks using structured instructional activities. At the beginning of the study, both groups were administered a pre-test to determine their baseline reading comprehension levels. The experimental group was taught using graphic organisers such as mind maps, story maps, Venn diagrams, and cause-and-effect charts. These tools enabled students to visually organise information from reading passages, identify key ideas, and summarise texts. Research indicates that graphic organisers improve comprehension by helping learners structure information and establish relationships among ideas (Li et al., 2021; Atanasio & Saavedra, 2025).

Students actively engaged in breaking down texts into visual formats, identifying main ideas and supporting details, and participating in group discussions based on completed organisers. In contrast, the control group was taught using conventional teaching methods, which included teacher explanation, silent reading, and oral questioning without the use of graphic organisers. This reflects the traditional teacher-centred approach commonly used in many classrooms (Shanahan et al., 2020). At the end of the intervention, both groups were administered the same post-test to assess improvements in reading comprehension. Data collected from the pre-test and post-test were analysed using the independent sample t-test to determine whether there were statistically significant differences between the experimental and control groups. Additionally, effect size (Cohen's *d*) was calculated to determine the magnitude of the intervention's impact. Effect size provides a deeper understanding of the practical importance of findings beyond statistical significance (Lakens, 2021). To ensure validity, the reading comprehension test was designed in alignment with the basic seven English Language curriculum. The instrument was reviewed by experienced English teachers and educational experts to ensure that it adequately measured the intended construct. This process ensured content validity, which refers to the extent to which an instrument represents all aspects of the concept being measured (Creswell & Creswell, 2023). A pilot test was conducted in a similar school to identify ambiguities and improve the clarity of the test items. This contributed to both face validity and construct validity (Fraenkel et al., 2022). To ensure reliability, the internal consistency of the test was assessed using statistical methods such as Cronbach's alpha. A reliability coefficient of 0.70 or higher was considered acceptable, indicating that the instrument produced consistent results (Taber, 2021). Ethical standards were strictly adhered to throughout the study. Permission was obtained from the school authorities before the research was conducted. Participants were informed about the purpose of the study, and their informed consent

was obtained prior to participation. Confidentiality and anonymity were ensured by not disclosing participants' identities in any part of the study. Participants were also informed of their right to withdraw from the study at any time without penalty. These practices align with established educational research ethics guidelines (BERA, 2021; Creswell & Creswell, 2023). Despite the strengths of the study, several limitations were identified. First, the small sample size of 30 students limits the generalisability of the findings to a wider population (Fraenkel et al., 2022). Second, the use of a quasi-experimental design without full randomisation may introduce potential bias (Shadish et al., 2020). Additionally, the four-week duration of the intervention may not have been sufficient to capture the long-term effects of graphic organisers on reading comprehension. Differences in students' abilities, motivation, and prior knowledge may also have influenced the results. Finally, external factors such as absenteeism, limited instructional time, and resource constraints may have affected the consistency and effectiveness of the intervention.

4. Results and Discussions

This section presents the results of the quasi-experimental study examining the effect of graphic organisers on students' reading comprehension in English. Data were collected from pre-test and post-test scores of an experimental group (taught using graphic organisers) and a control group (taught using conventional methods). The analysis employed descriptive statistics (mean and standard deviation), an independent samples t-test, and effect size (Cohen's d) to determine both statistical significance and the magnitude of the intervention effect. The analysis is presented in two phases: pre-test results (to establish group equivalence) and post-test results (to determine the effect of the intervention). Descriptive statistics, independent samples t-test, and effect size (Cohen's d) were used.

4.1 Pre-Test Results

Before the intervention, a pre-test was administered to both the experimental and control groups to assess their initial reading comprehension levels. This was necessary to determine whether the two groups were comparable at the start of the study and to ensure that any differences observed after the intervention could be attributed to the treatment rather than pre-existing differences.

Table 1: Pre-Test Results

	Group	N	Mean	Std. Dev.
Pre-Test	Experimental	15	43.2	8.1
	Control	15	42.8	8.4

Source: Field Data (2026).

The pre-test results presented in Table 1 show the performance of both the experimental and control groups before the intervention. Each group consisted of 15 students, ensuring

a balanced comparison. The experimental group recorded a mean score of 43.2 with a standard deviation of 8.1, while the control group obtained a mean score of 42.8 with a standard deviation of 8.4. The closeness of the mean scores indicates that both groups had nearly the same level of reading comprehension prior to the intervention. This suggests that there was no meaningful difference in ability between the two groups at the beginning of the study. In addition, the standard deviation values for both groups are quite similar, indicating that the spread of scores within each group was relatively consistent. These results confirm that the two groups were comparable before the introduction of graphic organisers. Therefore, any differences observed in the post-test can be attributed to the effect of the intervention rather than pre-existing differences between the groups.

Table 2: Independent Samples t-Test of Pre-Test Results

Variable	Group	Mean	Std. Dev.	t-value	p-value
Pre-test	Experimental	43.2	8.1	0.15	0.882
	Control	42.8	8.4		

Source: Field Data (2026).

Table 2 presents the independent samples t-test results for the pre-test scores of the experimental and control groups before the intervention. The experimental group obtained a mean score of 43.2 with a standard deviation of 8.1, while the control group recorded a mean score of 42.8 with a standard deviation of 8.4. The slight difference in mean scores suggests that both groups performed at almost the same level prior to the treatment. The t-value of 0.15 and the corresponding p-value of 0.882 indicate that there is no statistically significant difference between the two groups at the pre-test stage. Since the p-value is greater than the significance level of 0.05. This implies that any observed difference in the mean scores is due to chance rather than a real difference in ability. Therefore, the results confirm that the experimental and control groups were equivalent in terms of reading comprehension before the intervention. This equivalence is important because it establishes a fair baseline for comparing the effectiveness of the graphic organisers in the post-test stage.

4.2 Post-Test

After the intervention, a post-test was administered to both the experimental and control groups to determine the effect of the instructional treatment on students' reading comprehension. The post-test results were used to compare the performance of the two groups after teaching with graphic organisers and conventional methods, respectively.

Table 3: Post-Test Result

	Group	Mean	Std. Dev.
Post-Test	Experimental	71.5	6.9
	Control	49.6	7.8

Source: Field Data (2026).

The post-test results presented in the table 3 show the performance of both the experimental and control groups after the intervention. The experimental group recorded a mean score of 71.5 with a standard deviation of 6.9, while the control group obtained a mean score of 49.6 with a standard deviation of 7.8. The higher mean score of the experimental group indicates that students taught using graphic organisers performed significantly better in reading comprehension compared to those taught using conventional methods. This suggests that the intervention had a positive effect on students' ability to understand and interpret reading passages. In addition, the standard deviation of the experimental group (6.9) is slightly lower than that of the control group (7.8), indicating that the performance of students in the experimental group was more consistent after the intervention. On the other hand, the control group showed relatively more variation in performance, suggesting less uniform improvement among students. The results clearly demonstrate that the use of graphic organisers enhanced students' reading comprehension performance compared to traditional teaching methods.

4.3 Research Hypothesis

Null Hypothesis (H₀): There is no statistically significant difference in the reading comprehension scores of students taught using graphic organisers and those taught using conventional teaching methods.

Alternative Hypothesis (H₁): There is a statistically significant difference in the reading comprehension scores of students taught using graphic organisers and those taught using conventional teaching methods.

Table 4: Independent Samples t-Test of Post-Test Results

Variable	Group	Mean	Std. Dev.	t-value	p-value
Post-test	Experimental	71.5	6.9	8.12	0.000
	Control	49.6	7.8		

Source: Field Data (2026).

The post-test results presented in Table 4 compare the performance of the experimental and control groups after the intervention. The experimental group obtained a mean score of 71.5 with a standard deviation of 6.9, while the control group recorded a mean score of 49.6 with a standard deviation of 7.8. This indicates a clear difference in performance between the two groups, with the experimental group outperforming the control group. The independent samples t-test results further show a t-value of 8.12 with a p-value of 0.000. Since the p-value is less than the significance level of 0.05, the result is statistically significant. Therefore, the null hypothesis (H₀), which states that there is no statistically significant difference in the reading comprehension scores of students taught using graphic organisers and those taught using conventional methods, is rejected. Consequently, the alternative hypothesis (H₁) is accepted. To determine the practical significance of this difference, an effect size analysis using Cohen's d was conducted. The result yielded a Cohen's d value of 2.97, which indicates a very large effect size. According to conventional benchmarks, an effect size of 0.8 and above is considered large;

therefore, a value of 2.97 suggests that the intervention had a substantial effect on students' reading comprehension. This means that the improvement observed in the experimental group is not only statistically significant but also educationally meaningful. This finding suggests that the use of graphic organisers had a positive and significant effect on students' reading comprehension. The improvement in the experimental group supports the view that visual learning tools enhance understanding by helping students organise and connect ideas from texts. It also aligns with studies that found that graphic organisers improve comprehension by promoting active engagement and making learning more meaningful.

Furthermore, the result is consistent with Dual Coding Theory, which explains that learners understand and retain information better when it is presented through both verbal and visual channels (Paivio, 1986; Mensah & Mayer, 2009). The significant improvement in the experimental group, therefore, confirms that combining visual representations with textual information strengthens comprehension and recall. The findings align with research showing that graphic organisers improve comprehension by supporting schema development and reducing cognitive overload (Sweller, 2011; Novak & Cañas, 2008). They also support studies indicating that visual representations improve learners' ability to summarise and infer meaning (Kim et al., 2004; Nesbit & Adesope, 2006).

5. Conclusions

The study investigated the effect of graphic organisers on students' reading comprehension in English using a quasi-experimental design involving an experimental group and a control group. The findings revealed that both groups had similar performance at the pre-test stage, with the experimental group recording a mean score of 43.2 (SD = 8.1) and the control group recording 42.8 (SD = 8.4), indicating that there was no statistically significant difference between them before the intervention. This established that the two groups were comparable at the beginning of the study. However, after the intervention, a notable difference emerged between the two groups. The experimental group, which was taught using graphic organisers, recorded a higher mean score of 71.5 (SD = 6.9), while the control group, taught using conventional methods, recorded a mean score of 49.6 (SD = 7.8). This indicates that students exposed to graphic organisers performed better in reading comprehension than those taught using traditional approaches. The independent samples t-test further confirmed that this difference was statistically significant ($t = 8.12$, $p = 0.000$), leading to the rejection of the null hypothesis. In addition, the effect size analysis (Cohen's $d = 2.97$) showed a very large practical effect, suggesting that the use of graphic organisers had a strong influence on students' reading comprehension. The findings demonstrate that graphic organisers significantly enhance students' ability to understand, organise, and interpret reading texts more effectively than conventional teaching methods. The study concludes that graphic organisers are highly effective instructional tools for improving students'

reading comprehension in English. The significant improvement observed in the experimental group, supported by both statistical significance and a very large effect size, confirms that graphic organisers not only improve academic performance but also enhance meaningful understanding of reading materials. Therefore, their use provides a more effective and engaging alternative to traditional teaching methods in English language instruction. The findings of this study have important implications for English language teaching, learning, and curriculum implementation. First, the findings suggest that learner-centred instructional strategies, such as graphic organisers, can significantly enhance students' reading comprehension compared to conventional teaching approaches. This underscores the need for English language teachers to adopt more interactive and engaging instructional methods that actively involve learners in the reading process. Second, the results highlight the value of visual learning tools in supporting students' comprehension of texts. Graphic organisers help learners organise information, identify relationships among ideas, and improve their understanding of reading materials. Their use may therefore be particularly beneficial for students who experience difficulties in comprehending written texts. Third, the findings suggest that the integration of graphic organisers into reading instruction can contribute to improved literacy outcomes at the junior high school level. Given the central role of reading comprehension in academic achievement, the use of graphic organisers may support students' performance not only in English Language but also in other subjects that require effective reading and understanding of texts. The study also has implications for curriculum implementation and teacher development. Curriculum implementers, teacher educators, and educational authorities may consider promoting the use of graphic organisers as an evidence-based instructional strategy for improving reading comprehension. This could be achieved through the provision of instructional resources and professional development programmes that equip teachers with the skills needed to effectively integrate graphic organisers into classroom practice. Based on the findings of the study, the following recommendations are made. First, English language teachers should consistently integrate graphic organisers, such as mind maps, story maps, and Venn diagrams, into reading lessons to improve students' reading comprehension. This recommendation stems from the finding that students exposed to graphic organisers demonstrated significantly higher comprehension performance than those taught through conventional methods. Second, school administrators should provide adequate instructional materials and create supportive learning environments that facilitate the effective use of graphic organisers in the classroom. Third, educational authorities and teacher training institutions should organise regular professional development programmes, workshops, and in-service training sessions to equip teachers with the pedagogical skills required to effectively incorporate graphic organisers into reading instruction. Fourth, curriculum developers and policymakers should consider incorporating graphic organisers into English language teaching curriculum and instructional materials to promote the use of evidence-based reading strategies in schools.

In addition, future studies may examine the effectiveness of graphic organisers using larger samples, longer intervention periods, and different educational levels to further extend the evidence base on their impact on reading comprehension.

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Conflict of Interest Statement

The author declares no conflicts of interest.

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