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The Use of Visualization Strategy on Students' Reading Comprehension: Is it Effective?

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Abstract

The objective of this research is to find out the effect of using the visualization strategy on students' reading comprehension in tenth grade at one senior high school in Serang City, Banten Province. This research used quasi-experimental design. The population in this research was all tenth grades students while the samples were from class X MIPA 4 as the experimental class and X MIPA 5 as the control class. The two classes were selected using purposive sampling. To obtain data, the researcher used pre-test and post-test as instruments consisting of 40 multiple choice items. The data obtained from both tests were analyzed using the T-test. The results of the post-test average scores show a significant increase between the pre-test and post-test. The average score in the pre-test of the experimental class is 60.5 while the control class got 59.5. In addition, the average score in the post-test experimental class is 80.33 while the control class is 72.00. The hypothesis tests reveal that sig. 2 tailed is 0.001 while the determined alpha (α) is 0.05 (5%). It means that sig. ≤ α or 0.001 ≤ 0.05. Therefore, it can be said that Ho is rejected and Ha is accepted. Thus, the visualization strategy is effective on students' reading comprehension.

INTRODUCTION

In Indonesia, English is taught from elementary school through to higher education, reflecting its growing importance in global communication. As English proficiency enables individuals to share ideas, access international information, and engage in cross-cultural exchange, mastering the language has become a key educational goal. Among the four essential language skills—listening, speaking, reading, and writing—reading plays a particularly vital role in the Indonesian EFL context. It not only serves as a foundation for academic success but also provides learners with exposure to vocabulary, grammar, and various text types, all of which are crucial for language development. Therefore, enhancing reading comprehension is a critical component of English education in Indonesia.

The four skills are related to each other but have different functions such as students can get information from what they listen or hear, get information from what they read, can communicate with other people from different countries, and can write down information or feelings that they want

to share with others. From the four of language skills, the first or basic skill to learn is reading skills (Mikulecky & Jeffries, 1996). The facts prove that the key to the success of learning English depends on how students' reading comprehension skills are. Reading is very important for several purposes such as looking for pleasure or as entertainment, for educational purposes in obtaining new information and knowledge.

Mikulecky & Jeffries (1996) further stated that the importance of reading is based on the following reasons: by reading the students can achieve or improve their goals in learning; they will feel more comfortable in writing English when they read; and it helps them to increase their knowledge of vocabulary, ideas, knowledge and information from words or sentences in the text. In improving students' language comprehension skills and knowledge, reading is important for EFL students.

The process associated with reading consists of two, namely word recognition and comprehension (Balota et al., 1990). These two processes are interrelated because the reader will try to recognize the word first before they understand it. Word recognition is a process in which the reader tries to understand how the symbols written on the text match the person's spoken language. Meanwhile, word comprehension is a process where the reader tries to understand the words, sentences and texts that are connected and that they have previously recognized. In understanding written texts, readers usually use vocabulary understanding, grammar knowledge, or other strategies.

Moreover, reading comprehension is a way for people to get the right meaning of what they are reading. In fact, many students are still having difficulty in understanding the content of what they read because for EFL students, reading comprehension skills are not easy for them. There are several difficulties they face in achieving their reading goals, such as different learning styles, their understanding of vocabulary and motivation, and reading habits. Readers who do not have reading habits, do not know what learning style they have, not having mastery of vocabulary and learning motivation will make it difficult for them to comprehend the text.

Besides, based on preliminary interview that has been conducted by the researchers with one of the English teachers, the researcher concluded that some students, especially in the tenth grade, still have difficulties in learning reading. The students still face difficulties in identifying main ideas, getting information from the reading text, knowing the sequence of the text and also understanding the contents of the reading text due to their lack of mastery of vocabulary. In addition, from the admissions of several students that the researchers interviewed regarding the difficulties they face in learning reading comprehension, it was found that they thought that the way the teacher taught when explaining material was not easy for them to understand and they often felt bored and did not easily focus during the learning process so that making it difficult for them to gather information and comprehend the reading text.

To make students more active and easier to understand the material presented by the teachers, they must be able to find or create learning methods to overcome those problems and make students interested in reading. Desta (2016) states that the choice of suitable teaching materials and strategies needs to be considered by the teacher because to make students optimally involved in the learning process, proper teaching materials and strategies are needed as the keys to success in the teaching and learning process. One of the alternative strategies in teaching reading is visualization.

There are several activities that show the visualization strategy: (1) create a picture, sound, or feeling from the words in the text they read; (2) make ideas in text or personal experiences that are connected with sensory or emotional; (3) when reading, they place themselves as in the text; (4) better understand the text that is read by processing the text or text features within the text; (5) enjoy reading activities; (6) remember what they have read even over a long period of time (Kelley & Grace, 2013). In the use of the visualization strategy, the steps that are followed in sequence will help students understand it easily. Then, there are three steps in using image and label visualization (Goudvis & Harvey, 2007): (1) the teacher model, the teacher demonstrates the visualization using text headings and the first paragraph to students; (2) guided practice, it begins with the teacher reading the text or paragraphs aloud, then stops at one point and asks students to visualize the text and make the visualization into pictures; and (3) practice independently, this begins with the teacher reading the entire text without stopping at a certain point while students visualize and label the reading text and discuss the results of their visualization in order to improve their understanding.

Some previous studies had discussed certain methods and strategies to enhance students' reading comprehension, such as Hani & Gailea (2018) by using literature circles, Islami et al. (2024) by implementing Thieves strategy, Kusfitriyatna et al. (2021) by applying close passage, Maharani et al. (2022) by using Kahoot, Nadia et al. (2023) and Syafrizal & Syamsun (2023) by implementing peer tutoring, and Usman & Baihaqi (2020) by using Microsoft Sway. Also, the use of visualization strategy has been discussed by several previous studies. The study from Damiri et al. (2022) and Hanna (2020) concluded that there was an increase in students' reading comprehension after using visualization strategies. Another research that has done by Musdizal (2019) established that there was an increase in the student's ability to find main ideas and detailed information in the reading text by using visualization and visualization as well as increasing student activity in the learning process. So, from the results of those studies, it can be concluded that there was an increase in students' reading comprehension using visualization strategy. Therefore, the researchers are interested in conducting research using visualization as a learning strategy on reading descriptive text.

This present research used a quasi-experimental design to find out the effect of the visualization strategy on students' reading comprehension on descriptive text since the use of visualization strategy in teaching descriptive text have not been investigated in the previous research. Descriptive text is a type of text that is intended to describe a particular person, place, or thing. The

researchers chose descriptive text as learning material in the application of the visualization strategy since the text must be taught and mastered by senior high school students.

In the visualization strategy, the way students understand the reading text is to draw in their minds what they have understood. That way, students can be more focused on the text they read. Then by speculating about how the reading they read will end, it can increase students' motivation and interest in reading. The visualization can also be shared by students with their friends, and it will improve their vocabulary mastery. It also makes it easier for teachers to determine whether students really understand the text they are reading or not. Therefore, the aim of this study is to find out the effect of using the visualization strategy on students' reading comprehension of tenth grade at one senior high school in Serang City, Banten Province.

METHOD

This research used quasi-experimental research with pre-test and post-test designs. The purpose of this research is to find out the effect of visualization strategy on students' reading comprehension. Creswell (2014) stated that experimental research was a quantitative study with a traditional approach that aimed to explain the results of an intervention whether it affected one group when compared to other groups. In this research, the independent variable (X) was the visualization strategy; the dependent variable (Y) was students' reading comprehension.

The researchers divided the research subjects into experimental and control groups. The visualization strategy was used to teach reading comprehension to the experimental group, while the conventional strategy was used in the control group. In the experimental group, the researchers administered a pre-test to assess students' reading comprehension prior to treatment and a post-test to assess their reading comprehension following treatment with the visualization strategy. In the control group, both a pre-test and a post-test were administered after the students were treated using the conventional strategy. The researchers requested them to read the content and complete the tasks provided in their textbooks. Each group met four times.

The population in this research is the tenth-grade students at one senior high school in Serang City that consisted of 360 students. Then, the researchers selected two classes as the sample of this research by using purposive sampling, there were X MIPA 4 with 30 students as the experimental group and X MIPA 5 with 30 students as the control group. There are two types of tests that the researchers gave to the two groups; it consists of a pre-test and post-test. The pre-test was given to determine the student's achievement in reading comprehension before the researchers treated using the visualization strategy. Meanwhile, the post-test was given after the researchers gave the treatment and aim to find out the effect of visualization strategy on students' reading comprehension by comparing the results of the scores of the two groups.

The research instrument was test. There are two types of tests, pre-test, and post-test. Pearson Product Moment was used to check the validity, while reliability was tested using Split-Half Spearman-Brown. To find out whether the hypothesis is accepted or rejected, the researcher used independent sample T-test. For testing hypothesis, the determined α (alpha) is 0.05 (5%). If the result of p-value (p) or sig (2-tailed) is lower than α or $p \leq \alpha$, it means that the null hypothesis (Ho) was rejected and the alternative hypothesis (Ha) was accepted.

RESULTS

The try-out was analyzed using the Pearson Product Moment to check the validity of the test. The t_{table} value of the number of 30 students is 0.361, therefore the test can be said to be valid if $t_{count} \geq t_{table}$. The researchers gave a total of 50 try-out questions and got 40 valid item questions. Then, the result of the try-out data for reliability test was 0.948. The results showed that $r_{11} \geq r_{table}$ or $0.948 \geq 0.361$. It can be concluded that the try-out items were reliable.

The normality of the pre-test in the experimental class was 0.200 while the control class was 0.103. It means that the data of both classes are normally distributed because the significance is greater than $\alpha = 0.05$ ($0.200 \geq 0.05$; $0.103 \geq 0.05$). Then, the result of the normality of the post-test in the experimental class was 0.103 while in the control class was 0.161. The results indicate that the data from both classes are also normally distributed since both classes have more significance than $\alpha = 0.05$ ($0.103 \geq 0.05$; $0.161 \geq 0.05$).

The result of homogeneity test of both experimental and control classes show significance 0.418. It means that the data from both classes are homogeneous because the significance value is greater than $\alpha = 0.05$ ($0.418 \geq 0.05$). The post-test data from the experimental class and control class are also homogeneous because the significance shows greater than $\alpha = 0.05$ ($0.179 \geq 0.05$).

Based on the result of the test, it shows that the experimental class consisting of 30 students obtained the highest score on the pre-test was 80 and the lowest score was 30 with an average score was 60.5. While in the post-test, the average score increased to 80.3 with the highest score was 100 and the lowest score was 60. For an average gained score, the experimental class got 19.83 with the highest gain score was 30 and the lowest gain score was 5. From these results, it can be concluded that the students' scores on the post-test increased by 19.8 from the pre-test. Hence, it proved that the visualization method has an influence on students' reading comprehension.

On the other hand, the result in the control class shows that an average score was 59.66 with the highest score was 75 and the lowest score was 30. While an average score of post-tests was 72 with the highest score was 90 and the lowest score was 55. On the other hand, the average of gained score in the control class was 12.33 with the highest score was 25 and the lowest score was 0. It can be seen that the students' scores on the post-test only increased by 12.4 from the pre-test, which means that the control class's average gain score is smaller than the experimental class's average score. There was only a slight improvement in the reading comprehension of students in the control class.

Table 1. The result of post-test in experimental and control class

Group Statistics				
Class	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Post experimental	30	80.33	10.581	1.932
Post control	30	72.00	8.158	1.489

It can be seen that students in the experimental class got a greater score than the control class. The student with average scores on the post-test was 80.3 while the control class was 72 ($80.3 \geq 72$). The results showed that there was a significant difference between the two groups as seen from the results of the post-test scores between the experimental class and the control class. Moreover, in this research, the researchers taught the experimental group using the visualization strategy while the control group taught using conventional strategy.

To test the hypothesis, T-test was conducted to determine whether there was a significant effect of visualization strategy on students' reading comprehension.

Table 2. Independent sample of T-test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.854	.179	3.416	58	.001	8.333	2.439	3.451	13.216
Equal variances not assumed			3.416	54.476	.001	8.333	2.439	3.444	13.223

Based on the independent sample test table above, it shows that the results of the post-test data analysis obtained p-value or sig. (2-tailed) = 0.001 which means the score is lower than the predetermined significant value of 5% or 0.05. Thus, it is proven that the null hypothesis is rejected and the alternative hypothesis is accepted because the p-value (0.001) is lower than sig. $\alpha = 0.05$ (5%). This means that there is a significant effect of using the visualization method on students' reading comprehension.

DISCUSSION

Before using the visualization strategy, the average score of the pre-test in the experimental class was 60.55 which was lower than the average score of post-tests was 80.33. Moreover, the average gain score in this class was 19.83 which indicate that their reading comprehension has significantly improved. On the other hand, the average score of the control class for the pre-test was 59.5 and the post-test which was not much increased from the average score of the pre-test was 72.00. In addition, the average gain score in this class was 12.3 which indicate that their reading comprehension increased but only slightly improved. In addition, the researchers found that

experimental class students were more actively involved in the learning process compared to control class students who were taught and learned to read without using the visualization method

The question of this research is to know whether there is a significant effect of the use of visualization strategy on students' reading comprehension. To answer the question, the researchers conducted an independent sample t-test. Based on the formula, the results of statistical calculations showed that the p-value or sig. (2-tailed) is 0.001 which is lower than $\alpha = 0.05$ (5%) or $0.001 \leq 0.05$. Thus, the null hypothesis (Ho) was rejected and the alternative hypothesis (Ha) was accepted. In other word, there is a significant effect of using the visualization method on students' reading comprehension.

Moreover, the findings of previous studies provide compelling support for the effectiveness of visualization strategies in English language instruction, particularly in enhancing reading comprehension. For instance, Damiri et al. (2022), Hanna (2020), Melia & Reflinda (2022), and Niknejad & Rahbar (2015) demonstrated that visualization significantly improved students' ability to comprehend the detailed within the texts. This suggests that visualization does more than just aid understanding, it enables learners to connect abstract ideas to concrete mental images, thereby deepening engagement with the learning material. Furthermore, Musdizal (2019) reported a statistically significant improvement in reading comprehension among students taught using visualization, particularly in recount texts. This indicates that visualization is not merely an accessory to instruction, but a core component that can differentiate outcomes in text-based learning. Additionally, Royhan et al. (2023) emphasized that visualization not only had measurable statistical effects but also enhanced the overall classroom dynamic. Their findings revealed that visualization strategies encouraged greater student interaction and collaboration, creating a more inclusive and participatory learning environment. These studies collectively highlight the pedagogical value of incorporating visualization into reading instruction. Educators should consider integrating visualization techniques, such as graphic organizers, imagery-based prompts, and multimedia texts, as a means to foster deeper comprehension, increase learner motivation, and promote active classroom engagement. In essence, visualization is not just a cognitive aid but transformative instructional strategies that reshapes how students access, process, and interact with textual information.

CONCLUSION

Based on the results, it can be concluded that the average post-test score of the experimental class was 80.33, which was higher than that of the control class, which scored an average of 72.00. The results from the independent sample t-test indicated that the significance value (2-tailed), p, was 0.001, which is less than the alpha level ($\alpha = 0.05$). Therefore, since $p \leq \alpha$, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_a) is accepted. These findings carry important implications for teaching practice. They suggest that implementing a visualization strategy in reading instruction can be an effective way to enhance students' reading comprehension. This strategy actively engages

students in the learning process, increases their participation, and helps them better understand and retain reading materials.

The researchers recommend that teachers integrate more creative and student-centered strategies that align with the nature of the teaching material. Specifically, the use of visualization strategies proved effective in enhancing students' reading comprehension and engagement. Teachers are encouraged to incorporate visual aids such as mind maps, storyboards, or graphic organizers into reading lessons to help students construct meaning from texts more effectively. The data also highlighted that students who were actively involved in visualization-based activities showed greater improvement in learning outcomes. Therefore, it is essential for students to take an active role in classroom learning by participating in tasks and discussions facilitated through these strategies. Future researchers are encouraged to build on these findings by investigating the application of visualization strategies in developing other language skills, such as writing, speaking, and listening. Moreover, comparative studies across different age groups or proficiency levels could offer deeper insights into the adaptability and effectiveness of visualization in diverse educational settings.

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