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The Effect of Mind Mapping on Students' Outcomes in Writing Observation Texts in Indonesian Language Learning

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ABSTRACT

This study investigates the effect of the Mind Mapping learning model on students' learning outcomes in writing observation texts in the Indonesian language subject. The research employed a quantitative experimental design, involving two class X groups from a senior high school. The experimental group was taught using the Mind Mapping model, while the control group received instruction through conventional learning methods. Data were collected through pre-tests and post-tests, and analyzed using statistical techniques to assess the impact of the intervention. The results showed that the average post-test score of the experimental group was significantly higher than that of the control group. Specifically, the t-test analysis yielded a p-value of 0.02 ($p < 0.05$), indicating a statistically significant difference between the two groups. This suggests that the Mind Mapping learning model positively influences students' ability to understand and compose observation texts. The use of visual tools in the Mind Mapping strategy helps students organize ideas more effectively, enhancing their comprehension and creativity during the writing process. These findings align with previous research highlighting the effectiveness of Mind Mapping in improving student engagement and academic performance in language learning contexts. This study contributes to the growing body of evidence supporting the integration of creative and structured learning models like Mind Mapping into language instruction. However, the research was limited to a single school and a specific topic, suggesting that future studies should explore broader contexts and larger populations to validate and expand upon these findings.

Keywords: Mind Mapping; Learning Outcomes; Observation Text

INTRODUCTION

Education plays a fundamental role in shaping human resources who are competent, creative, and ready to face global challenges. In the Indonesian context, the improvement of learning quality is closely linked to the development of the national curriculum and pedagogical strategies that prioritize student-centered learning. One

of the key subjects that contributes significantly to the development of intellectual, emotional, and social competencies is the Indonesian language subject. Through this subject, students are expected to master various literacy skills, including listening, speaking, reading, and writing. Among the various types of texts taught, observation texts hold a special place because they demand critical thinking, attention to detail, and the ability to express ideas in a structured manner.

Observation text is a type of factual writing that requires students to observe a specific object, phenomenon, or event and report their findings in a coherent and informative format. This kind of writing not only develops students' descriptive and analytical abilities but also fosters their curiosity and scientific thinking. According to Adili (2023), teaching observation text contributes to students' cognitive development as it encourages active engagement with their environment. However, despite its importance, many students still struggle with producing well-organized observation texts due to limited understanding and weak mastery of text structure and language features.

These difficulties are often exacerbated by the use of conventional teaching methods that rely heavily on lectures and textbooks, which do not adequately cater to diverse learning styles. Research by Prasetyo and Sutopo (2023) revealed that traditional pedagogical approaches fail to engage students in meaningful learning experiences, especially in language classes where creativity and interaction are essential. Hence, there is an urgent need to implement innovative and student-friendly learning models that can motivate students and enhance their comprehension of complex texts.

One such approach is the Mind Mapping learning model, which offers a visual and associative method of organizing ideas. Developed by Tony Buzan, Mind Mapping is based on the principle of radiant thinking, where ideas are branched out from a central concept. This technique not only stimulates students' creativity but also helps them in structuring their thoughts logically. Arsyad (2017) supports the use of visual media in enhancing student engagement and information retention, particularly in subjects that require cognitive structuring like Indonesian language.

Empirical studies have confirmed the effectiveness of the Mind Mapping model in various educational settings. For instance, Rahmawati and Prasetyo (2022) found that the use of digital-based mind mapping tools significantly improved students' understanding of Indonesian text structures. Similarly, Munandar (2020) reported positive results in junior high school students' writing performance after the integration of interactive mind maps in the writing process. These findings indicate that the Mind Mapping model has the potential to overcome learning difficulties, particularly in mastering the structure and content of observation texts.

Moreover, Mind Mapping aligns with the principles of constructivist learning, where students actively construct their knowledge based on prior experiences and new input. This approach supports differentiated instruction, allowing students with

various learning preferences to process information effectively. Riyanti and Anggaini (2021) argue that visual and collaborative strategies like mind mapping can increase students' motivation and reduce learning anxiety, especially in language subjects that often require abstract thinking and creativity.

In the context of observation text learning, Mind Mapping can help students break down their observations into key components such as object description, characteristics, and factual information. By using branches and sub-branches, students can organize their thoughts before translating them into coherent paragraphs. This preparatory step is crucial in ensuring the clarity and structure of their writing.

This study is grounded in the need to find effective and innovative teaching strategies to improve students' learning outcomes in Indonesian language classes, particularly in writing observation texts. By focusing on the Mind Mapping learning model, this research aims to contribute to the growing body of knowledge on instructional innovations that promote active and meaningful learning. The significance of this study lies in its potential to improve the quality of teaching and learning in Indonesian language classrooms. It highlights the relevance of adopting innovative pedagogical models to address persistent challenges in students' writing skills, especially in mastering factual and structured text genres.

Given the challenges identified in teaching observation texts and the potential of the Mind Mapping model as an innovative learning strategy, this study seeks to investigate the extent to which this model influences students' learning outcomes. Specifically, the research aims to examine whether the application of the Mind Mapping learning model has a significant effect on students' ability to comprehend and produce observation texts in Indonesian language instruction. The objective is to evaluate the effectiveness of Mind Mapping in enhancing students' capacity to structure their ideas clearly, organize content coherently, and improve overall writing performance in observation text assignments. Furthermore, this research is expected to provide theoretical and practical contributions. Theoretically, it will strengthen previous studies that advocate the use of visual learning strategies in language education. Practically, it will offer educators an alternative model that is easy to implement and effective in enhancing student engagement and learning outcomes.

Lastly, in line with the demands of 21st-century education and the Merdeka Curriculum which emphasizes creative and critical thinking, Mind Mapping serves as a strategic tool to bridge the gap between curriculum goals and classroom realities. This study thus aligns with national efforts to create a more engaging, participatory, and student-centered learning environment.

LITERATURE REVIEW

Mind Mapping Learning Model

Mind Mapping is a creative learning strategy developed by Tony Buzan, which emphasizes organizing ideas in a visual and interconnected diagram. This technique allows learners to structure complex information into more accessible and memorable formats. In an educational context, Mind Mapping serves as a cognitive tool that supports student learning by encouraging active involvement in organizing, connecting, and synthesizing information (Buzan, 2006). Zahra (2015) notes that Mind Mapping enhances understanding by presenting materials in a structured and visual way, boosting creativity, and facilitating knowledge retention.

Recent studies have shown that this model has a positive impact on student achievement across various disciplines. For example, research by Suparman and Wulandari (2020) found that Mind Mapping significantly improves students' writing ability, especially in organizing main ideas and supporting details in essays. Similarly, Hasanah et al. (2021) emphasized that students exposed to the Mind Mapping model are better able to produce coherent and well-structured written texts.

Moreover, Widodo and Gunawan (2019) argue that Mind Mapping increases student motivation and engagement, particularly in language learning environments. It encourages learners to visualize connections between concepts, which is crucial for developing higher-order thinking skills. This is supported by Rahayu (2022), who reported that students using Mind Mapping were more active in class discussions and demonstrated greater improvement in comprehension tasks.

Observation Text

Observation text is one of the genres in Indonesian language learning aimed at training students to observe, describe, and report phenomena or objects systematically and objectively. According to Santosa (2013), observation text must be descriptive, structured, and fact-based. The structure typically consists of an introduction, a description of the observed object or phenomenon, and a concluding statement. Understanding and producing observation texts requires students to practice critical thinking, descriptive writing, and logical organization of ideas. Therefore, the use of a supportive learning model is essential. Research by Ningsih and Fitri (2021) highlighted that students often struggle to present information in observation texts due to a lack of understanding of structure and content organization. Mind Mapping, as a pre-writing technique, can help overcome this issue by offering a visual outline to guide students' thinking processes.

The Influence of Learning Models on Learning Outcomes

The choice of an appropriate learning model greatly influences the learning outcomes of students. Learning outcomes, especially in writing, depend not only on content knowledge but also on the students' ability to structure and express their ideas coherently. According to Dwijendra (2018), active learning strategies such as Mind Mapping provide students with frameworks for organizing content, thus improving comprehension and performance. Furthermore, Agustin (2017) found that Mind Mapping was especially effective in teaching descriptive and observation texts because it allows students to visualize relationships between ideas and concepts. Her study reported increased writing quality and coherence among students taught using the Mind Mapping model.

A study by Putri et al. (2021) concluded that the integration of Mind Mapping into classroom instruction improved both cognitive and affective learning domains, particularly in language learning. Students were not only better at composing structured texts but also demonstrated increased confidence in expressing ideas. Additionally, Wibowo and Rahmawati (2020) showed that students trained using Mind Mapping had higher post-test scores in text writing tasks compared to those using conventional methods. This is in line with the findings of Fauziah and Kurniawan (2023), who emphasized the need for more visual and student-centered learning models to improve academic writing skills.

In summary, Mind Mapping as a learning model has consistently proven to enhance students' ability to write observation texts through improved comprehension, creativity, and organization of ideas. This model provides a visual framework that supports students in planning, developing, and structuring their written work, ultimately leading to better learning outcomes.

METHOD

Design and Sample

This research employed a quantitative experimental design using a pre-test and post-test control group approach. The design aimed to determine the influence of the Mind Mapping learning model on students' learning outcomes in writing observation texts. Two groups of students were involved: one as the experimental group that received instruction through the Mind Mapping model, and the other as the control group that followed conventional learning methods. The population in this study consisted of all students of class X at a public senior high school. A random sampling technique was used to select two classes as the sample. Class X-1 was assigned as the experimental group, and class X-2 served as the control group. Each group received the same instructional content but through different learning models.

Instruments and Procedures

The research instrument used was a written test in the form of essay questions to measure students' ability to compose observation texts. The test comprised 10 questions designed to evaluate students' understanding of the structure, language features, and coherence in observation texts. The test was validated by expert judgment to ensure its relevance and reliability.

The research procedure in this study was conducted in three main stages: preparation, implementation, and evaluation. In the preparation stage, the researchers designed instructional materials focused on the topic of observation texts. They also developed pre-test and post-test instruments in the form of essay questions to assess students' writing ability. These instruments were validated by subject matter experts to ensure the accuracy, clarity, and alignment with the learning objectives. A trial test was also conducted to measure the reliability and effectiveness of the test items before being administered to the research subjects.

In the implementation stage, the experimental group received instruction using the Mind Mapping learning model. Students were guided to visually organize their ideas using diagrams that highlighted the key elements and structure of observation texts. This visual approach was intended to foster better comprehension and creativity in expressing their observations. Meanwhile, the control group was taught using conventional learning methods, which relied heavily on direct instruction and textbook-based learning. Both groups received the same instructional content, but through different instructional strategies.

In the evaluation stage, both groups were administered a pre-test before the learning intervention and a post-test after the intervention. The purpose of the pre-test was to measure the initial understanding and skill level of students in writing observation texts, while the post-test aimed to determine the extent of improvement after the instructional treatment. The results of these tests were then collected and analyzed statistically to assess the impact of the Mind Mapping model on students' learning outcomes.

Data Analysis

The data collected from the pre-test and post-test scores were analyzed statistically using descriptive and inferential analysis. The mean, standard deviation, and percentage of improvement were calculated to compare the performance between the two groups. To determine the significance of the difference in learning outcomes, a paired sample t-test was applied. The significance level was set at $p < 0.05$. If the p-value was below this threshold, it indicated a statistically significant difference between the experimental and control groups. The analysis was performed using the SPSS software version 25.0.

RESULT AND DISCUSSION

This section presents the findings of the study based on the data obtained from pre-tests and post-tests conducted in both the experimental and control groups. The goal is to evaluate the impact of the Mind Mapping learning model on students' ability to write observation texts.

Descriptive Statistics

Before the intervention, both the experimental and control groups had relatively similar performance levels. The experimental group achieved an average pre-test score of 65, while the control group had an average pre-test score of 64. This indicates that both groups started from a nearly equal baseline in terms of their ability to compose observation texts. Such similarity is important to ensure that any post-test differences are likely due to the learning model applied rather than initial disparities in ability. After applying the different learning models, significant improvements were observed. The experimental group, which was taught using the Mind Mapping model, saw their average post-test score increase to 85, indicating a 20-point gain. In contrast, the control group, which received instruction through conventional methods, only improved to an average score of 75, showing an 11-point gain. This 9-point difference in improvement between the two groups suggests a stronger influence from the Mind Mapping learning model in enhancing learning outcomes.

Table 1. Pre-test and Post-test Scores for Experimental and Control Group

Group	Average Pre-test Score	Average Post-test Score	Score Increase
Experimental Group	65	85	20
Control Group	64	75	11

These findings suggest that the visual and structured format of Mind Mapping likely helped students better organize their ideas and translate observations into coherent texts.

Inferential Statistics

To test the significance of the difference in post-test scores, an independent sample t-test was conducted. The results are displayed below:

Table 2. T-Test Results of Post-Test Scores Between Groups

Group	Average	Standard Deviation	t-value	p-value	Decision

Experimental Group	85	06.08	02.45	00.02	Significant difference found
Control Group	75	07.02	-	-	-

The p-value of 0.02 is below the 0.05 significance threshold, indicating that the difference in post-test scores between the two groups is statistically significant. This confirms that the Mind Mapping learning model had a positive effect on students' ability to write observation texts. The standard deviation also provides insight into the data spread. The experimental group's lower deviation (6.8) compared to the control group (7.2) shows that the students' performance in the experimental group was not only higher on average but also more consistent.

To better illustrate the performance gap, the following chart visually compares the average post-test results between the two groups:

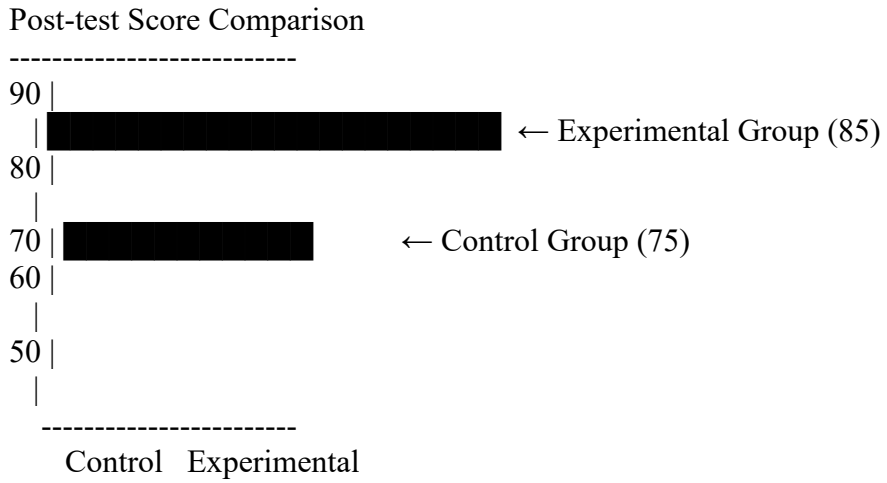

Figure 1. Comparison of Post-Test Averages Between Experimental and Control Groups

The chart clearly depicts the performance advantage of students taught using the Mind Mapping model over those taught with conventional methods. The visual gap reinforces the conclusion that Mind Mapping effectively enhances learning outcomes in observation text writing.

The results of this study demonstrate a significant positive impact of the Mind Mapping learning model on students' ability to write observation texts. The experimental group, which received instruction using Mind Mapping, showed a greater improvement in post-test scores compared to the control group. These findings support the hypothesis that visually organizing information enhances students' cognitive processing and writing performance, particularly in tasks that require structured observation and reporting.

This study contributes new evidence that Mind Mapping is not only useful in subjects like science or social studies, as commonly studied, but also highly effective in language learning contexts, particularly in improving students' ability to generate, organize, and express ideas in written form. This aligns with the findings of Yuliana & Sari (2020), who reported that visual-based learning strategies significantly enhance students' writing abilities. In this study, the Mind Mapping model helped students more easily identify key observations, group related ideas, and form coherent sentences, which are crucial elements of observation text writing.

Furthermore, this study confirms the findings of Pratiwi et al. (2019), who highlighted the role of Mind Mapping in increasing students' writing creativity and logical flow. Similar to their research, this study also found that students in the experimental group not only performed better but also demonstrated more confidence in developing and presenting their ideas. The visual structure helped minimize confusion and anxiety, allowing students to focus on the clarity and quality of their texts.

The implications of these findings are significant for language educators. Traditional, lecture-based approaches may not be sufficient to foster deeper understanding and practical writing skills in students. The Mind Mapping learning model provides an engaging alternative that promotes student-centered learning. It encourages learners to be active participants in the process, promoting both comprehension and retention. As such, it can be integrated into curriculum planning, especially for text-based materials such as observation, descriptive, and narrative texts.

This study also emphasizes the importance of using multimodal tools in language learning. Mind Mapping combines visual, spatial, and verbal learning modalities, which, according to Mahfud & Rahayu (2018), can cater to diverse learning styles within the classroom. The use of color, images, and branches in mapping activities further enhances memory retention and helps students scaffold their ideas more effectively.

However, the study is not without limitations. One of the main limitations is the relatively small and localized sample, as the research was conducted only in one school with two classes. This limits the generalizability of the findings. Future studies could include a larger sample from diverse schools or regions to examine whether the observed effects hold across different educational contexts.

Another limitation lies in the assessment method. Although the test measured students' ability to write observation texts, it primarily focused on structure and content rather than creativity or personal engagement. Future research might include qualitative assessments or rubrics that evaluate a wider range of writing qualities to provide a more comprehensive understanding of students' progress.

Despite these limitations, the findings open promising avenues for future research. Researchers could explore the long-term effects of using Mind Mapping on students' writing development or combine it with digital tools to create more interactive experiences. Studies like those of Rahmawati & Anwar (2021) suggest that digital Mind Mapping platforms can further increase student motivation and engagement, especially in blended or online learning environments.

Lastly, this study supports the effectiveness of the Mind Mapping model in improving students' observation text writing skills. It validates the use of creative, visual strategies in language education and encourages educators to incorporate such models in classroom practices. With the growing emphasis on 21st-century skills, learning models that foster creativity, critical thinking, and communication—like Mind Mapping—are essential for enhancing student outcomes in various subjects, including the Indonesian language.

CONCLUSION

Based on the findings of this study, it can be concluded that the Mind Mapping learning model has a significant positive impact on the learning outcomes of observation texts in the Indonesian Language subject for class X students. The application of Mind Mapping enables students to organize information more systematically and present their observations in a coherent and structured manner. This visual-based learning strategy facilitates better comprehension and enhances students' ability to compose observation texts effectively. The results of this study support the integration of Mind Mapping as an alternative and innovative approach in Indonesian language instruction, particularly when teaching text types that require clear organization and detailed description. Teachers are encouraged to adopt this model to increase student engagement and improve academic performance in writing-related tasks. It is recommended that Indonesian language teachers apply the Mind Mapping learning model, especially in the teaching of observation texts, as it has proven to enhance students' writing abilities. Furthermore, future research is suggested to explore the application of Mind Mapping in other genres of writing or across different language skills such as reading comprehension and speaking. Researchers may also consider examining its effectiveness across various educational levels or in diverse classroom contexts to further validate and expand upon these findings.

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