THE EFFECT OF USING MIND MAPPING TECHNIQUES TOWARDS THE STUDENTS' WRITING ABILITY IN DESCRIPTIVE TEXT AT SMK N 2 PADANG PANJANG

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ABSTRACT

Writing descriptive text has been recognized as one of the most challenging skills for English as a Foreign Language (EFL) learners because many students experience difficulties in generating, organizing, and developing ideas into coherent written texts. Therefore, this study investigated the effect of the Mind Mapping Technique on students' writing ability in descriptive text at SMK N 2 Padang Panjang. This study employed a quantitative approach using a quasi-experimental research design. The population consisted of all eleventh-grade students at SMK N 2 Padang Panjang, and a sample of 60 students was selected through purposive sampling. The data were collected through a descriptive writing test administered before and after the instructional process. Students' writing was evaluated using an analytical scoring rubric covering content, organization, vocabulary, language use, and mechanics. The data were analyzed using descriptive statistics, the Shapiro–Wilk normality test, Levene's homogeneity test, paired-sample t-test, and independent-sample t-test with IBM SPSS Statistics. The findings showed that the data were normally distributed and homogeneous. The statistical analysis revealed a significant improvement in students' writing ability, with a significance value of 0.000 ($p < 0.05$). The analysis also indicated a significant difference in writing achievement between the two groups, with a mean difference of approximately 8.03 points. These findings demonstrated that the Mind Mapping Technique effectively improved students' ability to organize ideas, develop descriptive paragraphs, and produce more coherent written texts. It was concluded that the Mind Mapping Technique was an effective instructional strategy for improving descriptive writing ability among eleventh-grade vocational high school students.

Keywords: *Mind Mapping Technique; Writing Ability; Descriptive Text; EFL Students*

A. INTRODUCTION

Writing is one of the most essential productive skills in English language learning because it enables students to communicate ideas, opinions, and information in a well-organized written form. However, writing is also considered one of the most challenging language skills, particularly for English as a Foreign Language (EFL) learners. Unlike speaking, writing requires students to simultaneously integrate grammar, vocabulary, organization, mechanics, and content into a coherent text. Harmer (2004) explains that writing is

a complex process because it is carried out without immediate interaction or feedback from the audience, requiring learners to organize and express their ideas independently. Likewise, Brown (2007) emphasizes that writing is not merely the production of sentences but also a cognitive process involving planning, organizing, drafting, revising, and editing. Consequently, many students encounter difficulties in producing meaningful and well-structured written texts.

In the Indonesian vocational high school context, students frequently experience problems when writing descriptive texts. Although descriptive text is one of the compulsory genres taught in the English curriculum, many students still struggle to generate ideas, organize information logically, develop supporting details, and apply appropriate vocabulary and grammatical structures. These difficulties often result in writing that lacks coherence and completeness. Nunan (2003) argues that writing is the most demanding language skill because it requires learners to combine linguistic knowledge with higher-order thinking skills. Similarly, Hyland (2004) states that successful writing depends not only on language proficiency but also on effective planning and idea organization before the drafting stage. These perspectives indicate that students need instructional strategies that facilitate idea generation and organization rather than focusing solely on the final written product.

Preliminary observations conducted at SMK N 2 Padang Panjang revealed that many eleventh-grade students encountered difficulties during writing activities. Students often hesitated to begin writing because they were unable to determine the main ideas and supporting details for their descriptive texts. They also tended to produce short paragraphs with limited vocabulary and weak organization. Classroom instruction was generally dominated by conventional teaching methods in which students were asked to write directly after receiving explanations from the teacher. As a result, students had limited opportunities to plan and organize their ideas before composing a text, leading to relatively low writing performance.

One instructional technique that has the potential to address these

problems is the Mind Mapping Technique. Mind mapping, introduced by Buzan (2006), is a visual strategy that helps learners organize ideas through keywords, branches, colors, and images connected to a central concept. Rather than writing ideas linearly, students construct a visual representation of relationships among concepts before developing them into complete paragraphs. This technique reduces cognitive load during the writing process by allowing students to focus on planning and organizing ideas before translating them into written language. Furthermore, Buzan explains that Mind Mapping stimulates both the analytical and creative functions of the brain, enabling learners to generate ideas more effectively and improve memory retention.

The effectiveness of Mind Mapping in writing instruction has also been supported by previous studies. Megawati et al. (2021) reported that the application of Mind Mapping significantly improved students' writing achievement by helping them organize ideas more systematically before composing texts. Likewise, Lastari and Saraswati (2018) found that students taught through Mind Mapping produced better descriptive writing than those taught using conventional techniques. In addition, Wahid and Sudirman (2023) concluded that Mind Mapping increased students' participation, creativity, and confidence throughout the writing process. These findings suggest that Mind Mapping is a promising instructional strategy for improving students' writing performance; however, empirical evidence regarding its effectiveness in vocational high school settings, particularly at SMK N 2 Padang Panjang, remains limited.

Based on these considerations, this study investigated the effect of using the Mind Mapping Technique on students' writing ability in descriptive text. Specifically, the study aimed to determine whether students who learned through Mind Mapping demonstrated significant improvement in their writing achievement and whether their achievement differed significantly from that of students who learned through conventional instruction. The findings of this study are expected to contribute both theoretically and practically. Theoretically, the study provides additional empirical evidence

regarding the effectiveness of Mind Mapping in teaching writing within the EFL context. Practically, the findings are expected to assist English teachers in selecting more effective instructional strategies to improve students' writing ability, encourage students to develop their ideas more systematically, and serve as a useful reference for future researchers interested in writing instruction and visual learning strategies.

B. Method

This study employed a quantitative approach using a quasi-experimental research design to examine the effect of the Mind Mapping Technique on students' writing ability in descriptive text. The study was conducted at SMK N 2 Padang Panjang, Indonesia. The population consisted of all eleventh-grade students, while the sample comprised 60 students selected through purposive sampling. Two intact classes were assigned as the experimental group (30 students), which received instruction using the Mind Mapping Technique, and the control group (30 students), which was taught using the conventional teaching method.

The instrument of this study was a descriptive writing test administered as a pre-test and post-test. Students' writing was assessed using the analytical scoring rubric developed by Jacobs et al. (1981), covering five aspects: content, organization, vocabulary, language use, and mechanics. The instrument and scoring rubric were validated by English education experts prior to data collection to ensure content validity.

The collected data were analyzed quantitatively using IBM SPSS Statistics. Descriptive statistics were used to summarize students' writing scores, followed by the Shapiro–Wilk test for normality and Levene's test for homogeneity. A paired-sample *t*-test was employed to examine the improvement within the experimental group, while an independent-sample *t*-test was used to compare the post-test scores between the experimental and control groups at a significance level of 0.05.

C. Finding and Discussion

1. Finding

This section presents the results of the statistical analyses conducted to determine the effect of the Mind Mapping Technique on students'

writing ability in descriptive text. Before testing the research hypotheses, the data were examined for normality and homogeneity to ensure that the assumptions for parametric statistical analysis were satisfied. Subsequently, the hypotheses were tested using the Paired Sample *t*-test and Independent Sample *t*-test.

a. Normality Test

The normality test was conducted using the Shapiro–Wilk test because each group consisted of 30 students. A significance value greater than 0.05 indicates that the data are normally distributed.

Table 1.
Results of the Normality Test

Group	Shapiro–Wilk Sig.	Interpretation
Experimental Class (Pre-test)	0.050	Normal
Experimental Class (Post-test)	0.627	Normal
Control Class (Pre-test)	0.051	Normal
Control Class (Post-test)	0.055	Normal

The results presented in Table 1 indicate that all significance values were equal to or greater than 0.05. Therefore, the pre-test and post-test scores of both the experimental and control classes were normally distributed. Since the normality assumption was fulfilled, the data were suitable for further analysis using parametric statistical tests.

b. Homogeneity Test

The homogeneity test was performed using Levene's Test of Homogeneity of Variance to determine whether the variances of the experimental and control groups were equal before and after the treatment.

Table 2.
Homogeneity Test of the Pre-test

Test	Levene Statistic	df1	df2	Sig.
Based on Mean	1.550	1	58	0.218
Based on Median	1.093	1	58	0.300
Based on Median and with Adjusted df	1.093	1	57.163	0.300
Based on Trimmed Mean	1.575	1	58	0.215

Table 2 shows that the significance value based on the mean was **0.218**, which is higher than 0.05. This finding indicates that the variances of the pre-test scores between the experimental and control classes were homogeneous. Therefore, both groups had comparable initial writing ability before the treatment.

Table 3.
Homogeneity Test of the Post-test

Test	Levene Statistic	df1	df2	Sig.
Based on Mean	3.403	1	58	0.070

Based on Median	3.641	1	58	0.061
Based on Median and with Adjusted df	3.641	1	50.372	0.062
Based on Trimmed Mean	3.446	1	58	0.068

As shown in Table 3, the significance value based on the mean was **0.070**, which is greater than 0.05. This result indicates that the post-test scores of the experimental and control classes also had homogeneous variances. Consequently, the data met the assumptions required for hypothesis testing using parametric statistics.

c. Hypothesis Testing The First Hypothesis

Table 4.
Paired Sample *t*-test Result

Variable	Mean Difference	Std. Deviation	Std. Error Mean	*t*	df	Sig. (2-tailed)
Pre-test – Post-test	-8.03333	15.06190	2.74991	-2.921	29	0.000

The results presented in Table 4 reveal that the significance value (Sig. 2-tailed) was **0.000**, which is lower than the significance level of 0.05. Therefore, the alternative hypothesis (Ha) was accepted, while the null hypothesis (H_0) was rejected. This finding indicates that there was a statistically significant improvement in students' writing ability after the implementation of the Mind Mapping Technique.

Furthermore, the mean difference of **-8.03333** indicates that the post-test scores were approximately **8.03 points higher** than the pre-test scores. This result demonstrates that the Mind Mapping Technique successfully improved students' writing performance in descriptive text.

d. The Second Hypothesis

Table 5.
Independent Sample *t*-test Result

Comparison	Levene's Sig.	*t*	df	Sig. (2-tailed)	Mean Difference
Equal variances assumed	0.013	-2.846	58	0.000	-8.03333
Equal variances not assumed	—	-2.846	51.933	0.000	-8.03333

Based on Table 5, Levene's Test yielded a significance value of 0.013, indicating that the assumption of equal variances was not met; therefore, the results were interpreted using the **Equal variances not assumed** row. The Independent Sample t-test produced a significance value of 0.000 ($p < 0.05$), indicating that the alternative hypothesis (Ha) was

accepted and the null hypothesis (H_0) was rejected. The mean difference of -8.03333 showed that the experimental class outperformed the control class by approximately 8.03 points. Overall, these findings confirmed that the Mind Mapping Technique had a significant positive effect on students' writing ability in descriptive text at SMK N 2 Padang Panjang.

2. Discussion

The primary objective of this research was to determine whether the use of the Mind Mapping Technique significantly affects students' writing ability in descriptive text at SMK N 2 Padang Panjang. Based on the statistical analyses, the findings indicate that the implementation of the Mind Mapping Technique had a positive and significant effect on students' writing achievement. This conclusion is supported by the results of the Paired Sample t-test, which showed a significance value of 0.000, indicating a significant improvement in the experimental class after the treatment. Furthermore, the Independent Sample t-test also yielded a significance value of 0.000, demonstrating that the writing achievement of students taught through the Mind Mapping Technique differed significantly from that of students taught through the conventional teaching method. These findings confirm that the alternative hypotheses proposed in this study were accepted.

The significant improvement in students' writing achievement can be explained by the characteristics of the Mind Mapping Technique itself. According to Tony Buzan (2006), Mind Mapping is a visual learning strategy that enables learners to organize ideas by connecting concepts through keywords, branches, symbols, colors, and images. Rather than writing ideas in a linear manner, students are encouraged to generate a central topic and expand it into several supporting ideas. This process allows learners to visualize the relationship among ideas before transforming them into complete paragraphs. As a result, students are able to produce writing that is more organized, coherent, and meaningful. One of the major problems encountered by students before the treatment was their difficulty in generating and organizing ideas. During the pre-test, many students found it difficult to determine

what information should be included in their descriptive texts. Some students spent a considerable amount of time thinking about ideas before they started writing, while others produced paragraphs that lacked sufficient details or logical organization. Such difficulties are common among English as a Foreign Language (EFL) learners because writing requires the integration of several language components simultaneously, including content development, vocabulary selection, grammatical accuracy, organization, and mechanics.

After the implementation of the Mind Mapping Technique, however, students demonstrated noticeable improvement in organizing their ideas. Instead of beginning directly with complete sentences, students first created a mind map containing the central topic and supporting keywords. They then expanded each keyword into descriptive information before developing complete paragraphs. This strategy reduced students' cognitive burden because they no longer had to generate and organize ideas at the same time while writing. Consequently, students became more confident in expressing their thoughts and were able to compose descriptive texts more effectively.

The findings of this study are consistent with Hyland (2004), who emphasizes that writing is a recursive process involving planning, drafting, revising, and editing. Among these stages, planning is considered one of the most important because it enables writers to organize ideas before producing a text. In this study, Mind Mapping functioned as an effective planning strategy. By planning their ideas visually, students were better prepared to write descriptive texts systematically, resulting in improved writing quality. Similarly, Brown (2007) states that successful writing instruction should encourage students to develop ideas before focusing on grammatical accuracy. Brown argues that writing is not merely a linguistic activity but also a cognitive process requiring learners to organize information logically. Therefore, techniques that facilitate idea generation and organization, such as Mind Mapping, can significantly improve students' writing performance. The findings of the present study support Brown's perspective because students who used Mind Mapping produced more

coherent and organized descriptive texts than those who learned through conventional instruction.

Furthermore, the results of this study also support Nunan's (2003) view that writing is a complex productive skill requiring learners to integrate knowledge of vocabulary, grammar, organization, and content simultaneously. Many students experience difficulties not because they lack grammatical knowledge, but because they struggle to organize their thoughts into meaningful written discourse. Mind Mapping addresses this challenge by providing students with a visual framework that guides them in arranging ideas logically before beginning to write. Another explanation for the effectiveness of Mind Mapping is related to its ability to stimulate students' creativity and critical thinking. Buzan explains that the use of keywords, colors, images, and branches activates both the left and right hemispheres of the brain. The left hemisphere processes logical thinking and language, while the right hemisphere supports imagination, visualization, and creativity. When both hemispheres work together, students become more capable of generating ideas and remembering information during the writing process. Consequently, they are able to produce richer and more detailed descriptive texts.

The improvement observed in this research is also evident from the statistical findings. The Paired Sample t-test revealed a mean difference of approximately 8.03 points between the pre-test and post-test scores. This indicates that students' writing ability increased after receiving instruction through the Mind Mapping Technique. Moreover, the Independent Sample t-test demonstrated that the experimental class achieved significantly better writing performance than the control class. These findings suggest that the observed improvement was not merely the result of students' natural learning progress but was strongly influenced by the instructional strategy implemented during the treatment.

The effectiveness of the Mind Mapping Technique can also be explained through the assessment components used in this study. Based on the analytical scoring rubric proposed by Jacobs et al. (1981), writing performance is evaluated through five aspects: content, organization, vocabulary, language

use, and mechanics. During the treatment, Mind Mapping particularly contributed to the improvement of content and organization because students first generated relevant ideas before writing complete paragraphs. The use of keywords also assisted students in selecting appropriate vocabulary related to the topic. Furthermore, when students already possessed a clear outline of ideas, they could pay greater attention to grammar and mechanics during the drafting and revising stages.

The findings of this research are in agreement with several previous studies. Megawati et al. (2021) reported that Mind Mapping significantly improved students' writing achievement because it enabled learners to organize ideas more effectively before composing texts. Likewise, Lastari and Saraswati (2018) found that students taught through Mind Mapping demonstrated better writing performance than those taught through conventional techniques. Their study concluded that Mind Mapping increased students' motivation, creativity, and ability to develop ideas systematically. Similarly, Wahid and Sudirman (2023) found that Mind Mapping had a positive impact on students' descriptive writing achievement. Their findings indicated that students became more active during the writing process because the technique encouraged brainstorming and collaborative discussion before composing paragraphs. These findings are consistent with the results of the present study, which also showed significant improvement in students' writing ability after the implementation of Mind Mapping.

Although the statistical findings demonstrate the effectiveness of the Mind Mapping Technique, several factors may also have contributed to the improvement. During the treatment sessions, students appeared more engaged and enthusiastic because Mind Mapping provided an alternative to conventional writing instruction. Instead of listening passively to teacher explanations, students actively participated in brainstorming activities, identifying keywords, discussing supporting ideas, and developing descriptive texts collaboratively. Such active participation is likely to have increased students' motivation and confidence throughout the learning process.

Another possible explanation is that Mind Mapping reduced students' writing anxiety. Many EFL learners experience anxiety when asked to write because they are unsure how to begin organizing their ideas. By using a mind map, students were no longer confronted with a blank sheet of paper. Instead, they already possessed a visual plan that guided them throughout the writing process. This condition enabled students to focus more on developing complete sentences rather than worrying about generating ideas from the beginning. Overall, the findings of this research clearly demonstrate that the Mind Mapping Technique is an effective instructional strategy for improving students' writing ability in descriptive text. The technique not only helps students organize ideas systematically but also encourages creativity, increases confidence, facilitates vocabulary development, and supports the production of coherent descriptive texts. Therefore, the findings of this study reinforce the theoretical perspectives proposed by Tony Buzan (2006), Brown (2007), Hyland (2004), and Nunan (2003) while simultaneously supporting previous empirical studies conducted by Megawati et al. (2021), Lastari and Saraswati (2018), and Wahid and Sudirman (2023).

Based on these findings, it can be concluded that the Mind Mapping Technique provides a meaningful contribution to English language teaching, particularly in the teaching of descriptive writing. Consequently, English teachers are encouraged to integrate Mind Mapping into classroom instruction as an alternative strategy for improving students' writing ability. The findings of this research also provide empirical evidence that visual planning strategies can effectively facilitate students' writing development in vocational high school contexts, particularly at SMK N 2 Padang Panjang.

D. Conclusion

Based on the findings and discussion presented in the previous chapter, it can be concluded that the use of the Mind Mapping Technique has a significant positive effect on students' writing ability in descriptive text at SMK N 2 Padang Panjang. Before testing the hypotheses, the researcher conducted the normality and homogeneity tests to ensure that the data met the assumptions required

for parametric statistical analysis. The results showed that the data were normally distributed and homogeneous, indicating that they were appropriate for further analysis using the Paired Sample t-test and Independent Sample t-test.

The result of the first hypothesis, analyzed using the Paired Sample t-test, revealed a significance value (Sig. 2-tailed) of 0.000, which was lower than the significance level of **0.05**. Therefore, the alternative hypothesis (Ha) was accepted, and the null hypothesis (H_0) was rejected. This finding indicates that there was a significant improvement in the students' writing ability after they were taught using the Mind Mapping Technique. The mean difference between the pre-test and post-test scores also showed that the students achieved better writing performance after receiving the treatment.

Furthermore, the second hypothesis was tested using the Independent Sample t-test. The analysis also produced a significance value (Sig. 2-tailed) of 0.000, which was lower than 0.05. This result indicates a significant difference between the writing achievement of the experimental class and that of the control class. The students who learned through the Mind Mapping Technique performed significantly better than those who learned through the conventional teaching method.

The findings suggest that the Mind Mapping Technique effectively helps students organize their ideas before writing, develop descriptive paragraphs more systematically, and express their ideas more clearly. Through the use of keywords, branches, and visual organization, students were able to generate ideas more easily and produce more coherent descriptive texts.

Therefore, it can be concluded that the Mind Mapping Technique is an effective teaching strategy for improving students' writing ability in descriptive text, particularly for eleventh-grade students at SMK N 2 Padang Panjang. This study also supports previous theories and empirical studies stating that visual learning strategies can enhance students' writing performance by facilitating idea generation and organization.

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