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Using the Semantic Mapping Technique in Improving Students' Writing Procedure Text at Vocational High School

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ABSTRACT

This research aimed to investigate the effectiveness of the Semantic Mapping Technique in improving students' writing ability of procedure text at a vocational high school. This research employed a quantitative method using a quasi-experimental design involving an experimental class and a control class. The population of this research consisted of tenth-grade students at SMK Darussalam Makassar in the academic year 2025/2026. The sample consisted of 42 students divided into two classes, namely 21 students in the experimental class and 21 students in the control class. The instrument used was a writing test in the form of a pre-test and a post-test. The data were analyzed using descriptive and inferential statistics with the assistance of SPSS version 25. The results showed that the mean score of the experimental class improved from 70.24 in the pre-test to 91.00 in the post-test, while the control class improved from 76.05 to 84.10. The result of the independent samples t-test showed that the significance value (Sig. 2-tailed) was lower than 0.05, indicating that there was a significant difference between students taught using the Semantic Mapping Technique and those taught using conventional teaching techniques. Therefore, the Semantic Mapping Technique was effective in improving students' writing ability of procedure text, particularly in organizing ideas, arranging procedural steps systematically, and developing vocabulary.

Keywords: Semantic Mapping Technique; Writing Skills; Procedure Text

INTRODUCTION

Writing is one of the most important productive skills in learning English because it enables students to express ideas, thoughts, feelings, and information in written form. In the context of English as a Foreign Language (EFL), writing is often considered the most complex language skill because students must simultaneously organize ideas, apply grammatical rules, select appropriate vocabulary, and arrange coherent sentences and paragraphs. Furthermore, writing requires an accurate use of grammar, sentence organization, and vocabulary mastery (Yahrif et al., 2025).

According to Nunan (2003), writing is a mental process that involves generating ideas, organizing thoughts, and transforming them into understandable written language. Similarly, Hyland (2022) explains that writing is not only a linguistic activity but also a cognitive and social process that requires learners to communicate meaning effectively within a specific context. Therefore, writing instruction plays an important role in developing students' communicative competence in English learning.

In Indonesia, English is taught as a compulsory subject at secondary schools, including vocational high schools. Vocational High Schools emphasize practical and functional communication skills that are relevant to students' future careers and workplace demands. One of the text types taught in vocational high schools is procedure text. Procedure text is a text that explains how to do or make something through a sequence of steps or instructions. This text is highly relevant to vocational education because students are often required to understand and produce instructional texts related to operating tools, explaining work processes, and performing practical activities systematically. Therefore, mastering procedure text is essential for vocational students in both academic and professional contexts.

However, many EFL students still experience difficulties in writing procedure texts. Recent studies reveal that students commonly struggle with organizing generic structures, using imperative sentences, applying temporal conjunctions, selecting appropriate vocabulary, and maintaining grammatical accuracy in procedure writing. A recent study conducted by Ningsih et al. (2025), found that students experienced significant difficulties in writing procedure texts, particularly in organizing goals, materials, and steps, as well as using language features such as action verbs, adverbials, temporal conjunctions, and simple present tense correctly. Another recent study at the vocational high school level reported that students still made frequent grammatical and vocabulary errors when writing procedure texts, especially in verb selection, punctuation, and sentence construction. These findings indicate that students' difficulties in writing procedure texts are not only related to grammar but also to idea organization and coherence.

In addition, writing problems are often influenced by students' limited ability to generate and organize ideas before writing. Many students feel confused when starting to write because they do not know how to connect concepts and arrange information logically. As a result, their writing tends to be incomplete, disorganized, and difficult to understand. This condition is also affected by conventional teaching methods that are still teacher-centered and provide limited opportunities for students to actively explore and organize ideas independently. Consequently, students become passive during the writing process and rely heavily on teachers' explanations.

To address these problems, teachers need effective and interactive teaching strategies that can help students organize ideas visually and systematically before writing. One teaching strategy that can be applied is Semantic Mapping Technique.

Semantic mapping is a visual learning strategy that helps students connect concepts, vocabulary, and ideas through diagrams or graphic organizers. According to Anam & Hidayanti (2021), semantic mapping helps learners organize words and concepts visually so that they can understand relationships among ideas more easily. Through semantic mapping, students can brainstorm ideas, categorize vocabulary, and arrange information systematically before composing a text. This strategy is considered suitable for writing instruction because it supports students during the pre-writing stage and helps them develop coherent writing.

Several previous studies have investigated the use of semantic mapping in teaching writing. Agustina & Nur (2018) found that semantic mapping increased students' motivation and helped them organize ideas in writing activities. Jusmaya & Afriana (2019) revealed that semantic mapping significantly improved university students' argumentative writing ability. Nuraini et al. (2022) also reported that semantic mapping effectively improved junior high school students' descriptive writing skills. Furthermore, Hartati & Basuni (2024) found that students taught using semantic mapping achieved higher writing scores than those taught using conventional teaching methods. These studies indicate that semantic mapping has positive effects on students' writing development.

Although previous studies have shown the effectiveness of semantic mapping, several research gaps still exist. First, most previous studies focused on descriptive and argumentative texts, while research investigating procedure text writing remains limited. Second, the majority of studies were conducted at junior high school or university levels, whereas research involving vocational high school students is still insufficient. Third, many previous studies emphasized students' perceptions, motivation, or general writing achievement without specifically examining the organization of procedural writing components such as goals, materials, and sequential steps. In addition, previous studies rarely explained the specific form of semantic mapping used during instruction. Most studies broadly discussed semantic mapping without focusing on cloud or cluster diagrams as a visual strategy to organize procedural ideas systematically.

Another important gap is related to the current educational context in vocational schools. Recent studies highlight that EFL students continue to struggle with writing coherence, vocabulary control, and grammatical accuracy despite technological developments and digital learning environments. However, limited research has explored how visual and student-centered strategies, such as semantic mapping, can specifically support vocational high school students in producing structured and coherent procedure texts. Therefore, this research attempts to fill these gaps by investigating the effectiveness of the Semantic Mapping Technique using cloud or cluster diagrams in improving vocational high school students' ability in writing procedure texts. Based on the explanation above, the researcher is interested in conducting research entitled "Using the Semantic Mapping Technique in Improving Students' Writing Procedure Text at Vocational High School." This research aims to investigate whether the use of the Semantic Mapping Technique

significantly improves students' achievement in writing procedure texts and to provide empirical evidence regarding the effectiveness of cloud or cluster diagrams in supporting vocational high school students' writing development.

LITERATURE REVIEW

Previous Related Research

Several previous studies have investigated the use of the Semantic Mapping Technique in teaching writing skills. However, these studies show differences in research focus, educational level, research design, and writing genres, which reveal important gaps for further investigation. The first previous study was conducted by Agustina & Nur (2018), entitled *"Students' Positive Response on Semantic Mapping Strategy in English Writing Skill."* This study focused on students' perceptions of the implementation of semantic mapping in writing classes at the university level. Using a descriptive qualitative approach, the researchers found that semantic mapping helped students organize ideas and increased their motivation during writing activities. Most students responded positively because the technique made writing more enjoyable and less complicated. However, this study mainly emphasized students' affective responses rather than measuring actual improvement in writing achievement. In addition, the study did not focus on a specific genre of writing. Compared to the present research, Agustina and Nur's study provides evidence regarding students' positive attitudes toward semantic mapping, but it lacks empirical statistical evidence about the effectiveness of the technique in improving students' writing performance, particularly in writing procedure texts at the vocational high school level.

The second study was conducted by Jusmaya & Afriana (2019), entitled *"The Effectiveness of Semantic Mapping as Pre-Writing Activity in Argumentative Writing."* Unlike Agustina and Nur (2018), this research employed a quasi-experimental quantitative design to examine the effectiveness of semantic mapping in improving argumentative writing skills among university students. The findings revealed significant improvement in students' writing achievement after using semantic mapping as a pre-writing strategy. This study provided stronger empirical evidence than the previous descriptive qualitative research because it measured writing improvement statistically using pre-test and post-test scores. However, the study focused on argumentative writing, which requires critical reasoning and opinion development, whereas procedural text focuses more on sequencing actions and organizing instructional steps systematically. Therefore, although both studies support the usefulness of semantic mapping in writing instruction, the instructional needs and writing characteristics differ substantially.

Another relevant study was conducted by Nuraini et al. (2022), entitled *"Semantic Mapping Strategy for Students' Writing Skill."* This study investigated the effectiveness of semantic mapping in improving descriptive writing skills among junior high school students using a pre-experimental quantitative design. The

findings showed significant improvement in students' writing ability, especially in vocabulary development and idea organization. Compared to Jusmaya and Afriana's research, Nuraini et al. focused on lower educational level learners and descriptive text rather than argumentative writing. Both studies similarly concluded that semantic mapping facilitates idea generation and organization. Nevertheless, both studies concentrated on descriptive and argumentative genres, while procedural text writing remains underexplored. In addition, the studies did not specifically examine vocational school students whose learning needs are closely related to practical and instructional communication.

Sugianto (2018), in his classroom action research entitled *"Penggunaan Semantic Mapping Strategy dalam Meningkatkan Menulis Teks Berita,"* investigated the implementation of semantic mapping in improving students' ability to write news texts. The study found that students became more active and motivated during writing instruction, and their writing scores improved significantly after two learning cycles. Unlike the previous quantitative studies, Sugianto's research emphasized classroom participation and instructional improvement through cyclical teaching interventions. While the study successfully demonstrated pedagogical benefits, the research design lacked a control group, making it difficult to measure the direct effectiveness of semantic mapping objectively. Compared to the current research, Sugianto's study contributes insights into classroom interaction and learning engagement, but it does not provide inferential statistical evidence regarding the effectiveness of semantic mapping compared to conventional teaching techniques.

Furthermore, Wahab & Astri (2022), in their study *"Students' Interest in Using Semantic Mapping Technique in Learning English Writing Ability,"* focused primarily on students' interest and engagement in writing instruction using semantic mapping. Similar to Agustina and Nur (2018), this study highlighted students' positive emotional responses and increased classroom participation. However, both studies mainly examined psychological and motivational aspects without deeply analyzing writing achievement outcomes. In contrast, the current research not only considers students' engagement but also focuses on measurable improvement in students' writing performance, especially in procedural text writing.

Another important study was conducted by Rifa'at (2021), entitled *"The Role of Semantic Mapping Strategy in Helping Students to Write Descriptive Text."* This research used a pre-experimental design involving senior high school students and found significant improvement in students' descriptive writing achievement after applying semantic mapping. Similar to Nuraini et al. (2022), the study emphasized semantic mapping as a pre-writing strategy that helps students organize ideas visually. However, both studies focused on descriptive writing, which mainly emphasizes describing objects, places, or people in detail. This differs from procedure text writing, which requires logical sequencing, imperative forms, and

systematic instructional steps. Therefore, the findings cannot fully represent the effectiveness of semantic mapping in teaching procedure texts.

The most recent related study was conducted by Hartati & Basuni (2024), entitled *"Teaching Writing to Eighth Grade Students Using Semantic Mapping."* This study employed a quasi-experimental design and found that students taught using semantic mapping achieved significantly higher writing scores than students taught using conventional methods. Compared to earlier studies, Hartati and Basuni's research provided stronger methodological rigor because it involved experimental and control groups. In addition, the study highlighted the integration of creativity and critical thinking during writing activities. However, the study still focused on junior high school students and descriptive writing contexts. Moreover, the researchers broadly discussed semantic mapping without specifically identifying which form of semantic mapping was most effective in supporting students' writing organization.

Based on the comparison above, it can be concluded that previous studies consistently show that semantic mapping contributes positively to writing instruction. However, several important gaps remain. First, most previous studies focused on descriptive and argumentative writing rather than procedural text writing. Second, many studies were conducted at junior high school or university levels, while research at the vocational high school level is still limited. Third, previous studies rarely focused on specific forms of semantic mapping, such as cloud or cluster diagrams to support procedural writing organization. Fourth, several studies emphasized students' perceptions and motivation rather than objectively measuring writing achievement through controlled experimental designs. Therefore, the current research attempts to address these gaps by investigating the effectiveness of Semantic Mapping Technique using cloud or cluster diagrams in improving vocational high school students' ability in writing procedure texts through a quasi-experimental quantitative approach.

Writing

Writing is one of the productive skills in language learning that enables students to express ideas, opinions, and feelings in written form. According to Nunan (2003), writing is a mental process of generating ideas, organizing them, and transforming them into coherent sentences and paragraphs. Writing is considered a complex skill because students must pay attention to grammar, vocabulary, organization, mechanics, and content simultaneously. Similarly, Brown (2001), as cited in Kurniasih et al. (2020), states that writing is a process of thinking in which writers produce ideas and arrange them into meaningful written communication. This means that writing is not only about putting words on paper, but also about organizing ideas logically so that readers can understand the intended message clearly.

In addition, Hyland (2004) explains that writing is both a cognitive and social activity because it involves thinking processes and communication purposes. Students need to understand how language functions in different contexts and how to organize information appropriately. Furthermore, writing plays a strategic role in preparing students to write scientific papers of an international standard (Yahrif & Suharti, 2026). Therefore, writing instruction should guide students through the stages of planning, drafting, revising, and editing. Writing also plays an important role in academic and professional contexts. Through writing, students can communicate information, explain processes, and demonstrate their understanding of particular topics. In vocational education, writing skills are especially important because students are often required to write reports, instructions, and procedural documents related to workplace activities.

Procedure Text

Procedure text is a type of text that explains how to do or make something through a sequence of steps. According to Anderson, as cited in Mukti et al. (2025), procedure text is a text that gives instructions about how to perform an activity or process. The purpose of the procedure text is to guide readers in completing tasks systematically and correctly. Generally, procedure text consists of three generic structures: goal, materials, and steps. The goal explains the purpose of the activity, the materials present the tools or ingredients needed, and the steps explain the sequence of actions that should be followed. Procedure text commonly uses imperative sentences, action verbs, and sequence connectors such as *first*, *next*, *then*, and *finally*. Procedure text is highly relevant to vocational high school students because it relates closely to practical activities and workplace instructions. Through writing procedure texts, students learn how to organize ideas logically and communicate instructions clearly. However, many students still face difficulties in arranging steps coherently and using appropriate language features in their writing.

Semantic Mapping Technique

Semantic Mapping Technique is a visual learning strategy used to organize concepts, vocabulary, and ideas into diagrams or graphic organizers. According to Heimlich & Pittelman (1986), as cited in Pakaja et al. (2025), semantic mapping is a technique that helps students visually display relationships among concepts and words related to a topic. Through semantic mapping, students can activate prior knowledge and connect it with new information. Semantic mapping is commonly used in language learning because it helps students organize ideas before writing. According to Johnson (2008), as cited in Wahab & Astri (2022), semantic mapping is an effective strategy for helping students generate and organize ideas systematically. This technique also helps students improve vocabulary mastery and understand relationships among concepts more clearly. In writing instruction, semantic mapping can support students during the pre-writing stage. Students can brainstorm ideas, categorize information, and connect related vocabulary visually

before composing a text. This process helps students develop coherent and organized writing more easily.

There are several forms of semantic mapping, such as spider maps, tree diagrams, fishbone diagrams, and cloud or cluster diagrams. In this research, the researcher uses cloud or cluster diagrams because they are simple and suitable for organizing ideas in procedure texts. Through cluster diagrams, students can place the main topic in the center and develop supporting ideas into connected branches. The use of semantic mapping is expected to help vocational high school students improve their ability in writing procedure texts by assisting them in generating ideas, organizing steps systematically, and enriching vocabulary.

METHOD

Design and Samples

This research employed a quantitative research method with a quasi-experimental design. The researcher used two classes, consisting of an experimental class and a control class. The experimental class was taught using the Semantic Mapping Technique, while the control class was taught using conventional teaching techniques. Both classes were given a pre-test before the treatment and a post-test after the treatment to measure students' improvement in writing procedure text. The population of this research consisted of all tenth-grade students at SMK Darussalam Makassar in the academic year 2025/2026, totaling 225 students. The sample of this research was selected using a purposive sampling technique. The researcher chose two classes as the sample: class X TKJ, consisting of 21 students, as the experimental class, and class X RPL, consisting of 21 students, as the control class. Therefore, the total sample of this research was 42 students.

Instruments and Procedures

The instrument used in this research was a writing test consisting of a pre-test and a post-test. The tests aimed to measure students' ability in writing procedure texts before and after the treatment. Students were instructed to write a procedure text based on the topic provided by the researcher. The students' writing was assessed using a writing rubric adapted from Jacobs et al., covering five aspects: content, organization, vocabulary, language use, and mechanics.

This research was conducted in three stages: pre-test, treatment, and post-test. The pre-test was administered to both experimental and control classes to measure students' initial writing ability in a procedure text. The treatment was conducted in four meetings. In the experimental class, students were taught using the Semantic Mapping Technique through cloud or cluster diagrams. In the first meeting, the researcher introduced the procedure text and explained how to use semantic mapping to organize ideas visually. In the second meeting, students were guided to create semantic maps based on a given topic and develop them into procedure texts.

In the third meeting, students practiced creating semantic maps and writing procedure texts independently. In the fourth meeting, the researcher reviewed the material and provided reinforcement activities by asking students to create semantic maps and write procedure texts individually. Meanwhile, the control class was taught using conventional teaching techniques. The teacher explained the material through lectures, textbook discussion, and direct writing activities without using semantic mapping. After the treatment, a post-test was administered to both classes to determine students' improvement in writing procedure texts. The results of the pre-test and post-test were analyzed using descriptive and inferential statistics to determine the effectiveness of the Semantic Mapping Technique in improving students' writing achievement.

Data Analysis

The data obtained from the pre-test and post-test were analyzed using descriptive and inferential statistics with the assistance of SPSS version 25. Descriptive Statistics were used to calculate the mean score, standard deviation, minimum score, and maximum score of students' writing achievement in both classes. These statistics were used to describe students' performance before and after the treatment. Writing Scoring Rubric**:** Students' writing was assessed using an analytic scoring rubric adapted from Jacobs et al. The rubric consisted of five components, namely content, organization, vocabulary, language use, and mechanics. Each component had different score ranges and assessment criteria.

Component	Criteria	Score Range
Content	Relevance and completeness of ideas in the procedure text	13-30
Organization	Logical arrangement and coherence of procedural steps	7-20
Vocabulary	Appropriate vocabulary usage related to the procedure text	7-20
Language Use	Grammar accuracy and sentence construction	5-25
Mechanic	Spelling, punctuation, and capitalization	2-5

The explanation of each component is as follows: Content: Content assessed students' ability to develop ideas related to the topic. Students received high scores if the procedure text contained complete, clear, and relevant information regarding goals, materials, and steps. Organization: The organization assessed how students arranged ideas and procedural steps logically and systematically. The use of sequence connectors such as first, next, then, and finally was also considered. Vocabulary: Vocabulary assessed students' ability to use appropriate and varied

vocabulary related to the procedure text. Students with effective word choice and accurate terminology received higher scores. Language Use: Language use focused on grammar accuracy, sentence structure, and the use of imperative sentences commonly found in procedure texts. Mechanics: Mechanics assessed students' accuracy in spelling, punctuation, and capitalization. Students with fewer mechanical errors obtained higher scores. The total score of students' writing was calculated by summing all components of the rubric. Inferential statistics were used to test the research hypothesis. Before conducting the hypothesis test, the researcher performed prerequisite tests consisting of a normality test and a homogeneity test. Normality Test: The normality test was conducted to determine whether the data were normally distributed. The researcher used the Shapiro-Wilk test with a significance level of 0.05. Homogeneity Test: The homogeneity test was conducted to determine whether the variances of both groups were homogeneous. Levene's Test was used with a significance level of 0.05. Hypothesis Test: To determine the effectiveness of the Semantic Mapping Technique, the researcher used an independent samples t-test. If the significance value (Sig. 2-tailed) was less than 0.05, the alternative hypothesis (H^1) was accepted, and the null hypothesis (H^0) was rejected. This indicated that there was a significant difference between students taught using the Semantic Mapping Technique and those taught using conventional teaching techniques.

Tabel 1 Interval Score of Pre-Test and Post-Test

Range of Score	**Classification**
96-100	Excellent
86-95	Very Good
76-85	Good
66-75	Fairly Good
56-65	Fair
46-55	Poor
0-45	Very Poor

RESULTS AND DISCUSSION

This research was conducted to determine the effectiveness of the Semantic Mapping Technique in improving students' writing procedure text at vocational high school. The data were obtained from the pre-test and post-test scores of the experimental class and the control class. The experimental class consisted of 21 students who were taught using the Semantic Mapping Technique, while the control class consisted of 21 students who were taught using conventional teaching techniques. The students' writing was assessed based on five aspects: content, organization, vocabulary, language use, and mechanics.

Tabel 2 Descriptive Statistics of Pre-Test and Post-Test in both classes

Classes	N	Pre-Test	Post-Test	Improvement
Experimental	21	70.24	91	20.76
Control	21	76.05	84.10	8.05

Source: IBM SPSS Statistics 25 Version

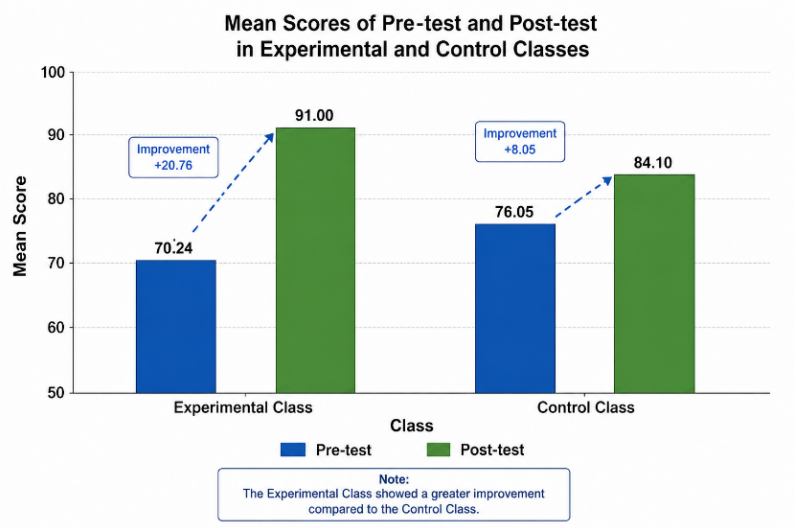

Chart 1 Improvement Scores between Experimental and Control Classes

The descriptive statistics showed that students in the experimental class achieved better improvement compared to students in the control class. The mean score of the experimental class in the pre-test was 70.24, while the mean score in the post-test increased to 91.00. Meanwhile, the control class obtained a mean score of 76.05 in the pre-test and increased to 84.10 in the post-test. These findings indicate that the improvement in the experimental class was higher than the improvement in the control class. Before testing the hypothesis, the researcher conducted normality and homogeneity tests.

Tabel 3 Normality Tests in both classes

Tests of Normality							
	Class	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pre-Test	Experimental	,103	21	,200*	,948	21	,317
	Control	,169	21	,122	,929	21	,129
Post-Test	Experimental	,105	21	,200*	,929	21	,132
	Control	,112	21	,200*	,977	21	,884

Source: IBM SPSS Statistics 25 Version

The result of the normality test using Shapiro-Wilk showed that the data were normally distributed because the significance values were greater than 0.05.

However, the result of the homogeneity test showed that the significance value in the post-test was lower than 0.05, indicating that the data variance between the experimental class and the control class was not homogeneous. Since the post-test data were not homogeneous, the researcher used Welch's t-test to analyze the hypothesis because Welch's t-test is appropriate for data with unequal variances.

Tabel 4 Welch T-Test

Robust Tests of Equality of Means				
Pre-Test				
	Statistic[a]	df1	df2	Sig.
Welch	3,879	1	30,135	,058
a. Asymptotically F distributed.				
Post- Test				
	Statistic[a]	df1	df2	Sig.
Welch	20,312	1	32,802	,000
a. Asymptotically F distributed.				

Source: IBM SPSS Statistics 25 Version

The result of Welch's t-test in the pre-test showed that there was no significant difference between the experimental class and the control class before treatment because the significance value was greater than 0.05. This indicates that both classes had relatively similar initial writing ability. Meanwhile, the result of Welch's t-test in the post-test showed that the significance value (Sig. 2-tailed) was lower than 0.05. Therefore, the alternative hypothesis (H_1) was accepted, and the null hypothesis (H_0) was rejected. It means that there was a significant difference in students' writing achievement between students taught using the Semantic Mapping Technique and those taught using conventional teaching techniques after the treatment. After conducting the normality and homogeneity tests, the researcher continued the analysis by using the Independent Samples t-test to determine whether there was a significant difference between the experimental class and the control class in students' writing achievement. The result of the Independent Samples t-test can be seen in the following table:

Tabel 5 Independent Sample T-Test

Independent Samples 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
Post-Test Control & Experimental	Equal variances assumed	5,950	,019	-4,507	40	,000	-6,905	1,532	-10,001	-3,808
	Equal variances not assumed			-4,507	32,802	,000	-6,905	1,532	-10,022	-3,787

Based on the result of the Independent Samples t-test, the significance value (Sig. 2-tailed) was lower than 0.05. Therefore, the alternative hypothesis (H_1) was accepted, and the null hypothesis (H_0) was rejected. It means that there was a significant difference between the students who were taught using the Semantic Mapping Technique and those who were taught using conventional teaching techniques in writing procedure text. Thus, the use of the Semantic Mapping Technique was effective in improving students' writing achievement.

The findings of this research showed that the use of the Semantic Mapping Technique significantly improved students' writing achievement in procedure text. The improvement could be seen from the increase in the students' post-test scores in the experimental class, which was higher than those in the control class. This indicates that the Semantic Mapping Technique was effective in helping students develop their writing ability.

The effectiveness of the Semantic Mapping Technique can be explained through several aspects. First, semantic mapping helps students organize their ideas visually before writing. Many students usually face difficulties when starting to write because they do not know how to generate and organize ideas. Through semantic mapping, students can place the main topic in the center and develop related ideas into connected branches. This process helps students understand the relationship between ideas and arrange information systematically. As a result, students become more confident and focused when writing procedure texts.

Second, the Semantic Mapping Technique helps students improve the organization and coherence of their writing. Procedure text requires students to arrange steps sequentially and logically. By using semantic mapping, students can visually map the sequence of actions before writing the complete text. This makes it easier for students to organize procedural steps clearly and avoid missing important information. Consequently, the procedure texts produced by students become more structured, coherent, and easier to understand.

Third, semantic mapping also contributes to vocabulary development. During the mapping process, students brainstorm and categorize words related to the topic. This activity enriches students' vocabulary and helps them choose appropriate words when writing. In writing procedure text, vocabulary mastery is important because students need to use action verbs, sequence connectors, and specific terms accurately. Semantic mapping provides opportunities for students to recall and connect vocabulary meaningfully, which supports better writing performance.

Furthermore, the Semantic Mapping Technique creates a more interactive and student-centered learning environment. Students actively participate in brainstorming, discussing, and organizing ideas during the learning process. This active involvement increases students' motivation and interest in writing activities. Students become more engaged because they are not only receiving information from the teacher but also constructing ideas independently through visual learning

activities. This finding supports the opinion of Anam et al. (2021), who state that semantic mapping is an active learning strategy that helps students organize concepts and ideas visually.

The findings of this research are consistent with previous studies. Agustina and Nur (2018) found that semantic mapping helped students organize ideas and increased their motivation in writing. Jusmaya and Afriana (2019) also revealed that semantic mapping significantly improved students' argumentative writing ability because it helped students arrange ideas logically before writing. In addition, Hartati and Basuni (2024) found that students taught using semantic mapping achieved better writing performance than those taught using conventional techniques. These similarities indicate that semantic mapping is an effective strategy for improving students' writing ability in different educational contexts.

In the context of vocational high school students, the Semantic Mapping Technique is highly suitable because vocational students generally prefer practical and visual learning approaches. Procedure text is also closely related to vocational education because students often need to explain steps, instructions, and work processes systematically. Therefore, semantic mapping becomes an effective technique to assist students in understanding and composing procedure texts more clearly and logically. Based on the discussion above, it can be concluded that the Semantic Mapping Technique significantly improves students' writing procedure text because it helps students generate ideas, organize information systematically, enrich vocabulary, and increase motivation during the writing process. Thus, the Semantic Mapping Technique can be used as an effective alternative teaching strategy in writing instruction, especially for vocational high school students.

CONCLUSION

Based on the findings and discussion of this research, it can be concluded that the use of the Semantic Mapping Technique is effective in improving students' writing procedure text at a vocational high school. The technique helps students generate ideas, organize procedural steps systematically, and develop their vocabulary more effectively. In addition, semantic mapping creates a more interactive and engaging learning environment that encourages students to participate actively in the writing process. The use of cloud or cluster diagrams in semantic mapping also supports students in arranging their ideas visually before writing, making their procedural texts clearer, more coherent, and easier to understand. Therefore, the Semantic Mapping Technique can be used as an alternative teaching strategy to improve students' writing ability, especially in writing procedural text. For English teachers, it is recommended to apply the Semantic Mapping Technique in writing classes to help students organize ideas and increase their motivation in learning. Teachers are also encouraged to use visual and student-centered learning activities to create a more active classroom atmosphere. For future researchers, it is suggested to conduct further studies on semantic mapping with different text types, educational levels, or

learning contexts. Future research may also compare semantic mapping with other teaching techniques to identify more effective strategies in teaching writing.

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