

## The Effectiveness of Mind Mapping to Teach Writing Procedure Text in SMPN 1 Diwek

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### Abstract

The objective of this research is to find out whether or not the use of mind mapping method effective to improve the students' writing skill on procedure text, in terms of content, vocabulary, grammar and mechanics. The researcher conducted a pre-experimental group design. The population of this research is the ninth-grade students of SMPN 1 Diwek Jombang in the academic year 2022/2023. Total of the population was 8 classes and the total 254 students. The sample in this study was class IX C SMPN Diwek Jombang, totaling 32 students. Based on the data normality test that has been carried out by the researcher, it shows that sig. 2-tailed is 0.200 meaning that the data is normally distributed, then it will be continued with a simple paired t-test. based on the Testing of Hypothesis Terms, If the score of t is sig.  $<0.05$ ,  $H_a$  is accepted and  $H_0$  is rejected. on the simple paired t-test calculation, the data shows sig. (2-tail) 0.000. The data is smaller than 0.05, meaning that  $H_0$  is rejected and  $H_a$  is accepted.

**Keywords:** mind mapping, writing skill, procedure text, ninth graders of junior high school, pre-experimental study.

### Introduction

Writing is one of important skills in English subject beside the other skills. Even though writing skill is important, it does not get enough attention and proper time allocation in the teaching and learning process (Mundriyah & Parmawati, 2016). The students have to have knowledge about the elements of writing in order to deliver a good writing. Furthermore, it is stated that writing is one of the most challenging skills for students.

Then, the researcher conducted observation in SMP Negeri 1 Diwek. The teacher recommended IX C as object to conduct the research. The teacher recovers that the students' writing skill still not good enough and identifies some problem from students to improve their writing skills. it was difficult for students to develop the ideas and write it down. They used to write down what the teacher writes in whiteboard or copying from the book, the teacher did not explain how to create the outline from the topic, the develop the outline into idea and write them down to make writing easier. Then, they failed to arrange the words into

sentences and sentences into paragraphs. According to pre-observation in the class, students could not arrange words into sentences and sentences into paragraphs well. The researcher still found error in their writing, students do not know how to organize the introduction, body, and conclusion in writing assignment. Third, when students completing assignment, students' writing contained improper word selection or diction. Students still make misspelled when writing, some of them could not write well, as they misspelled disappoint as disappoint, and some students have problems in translating, students used to translate word by word while writing.

The problem is most students were difficult to find and others do not have idea in writing. Beside the students' problem, the researcher also found other problems come from the teacher. Most of them used monotonous strategy, it makes students not interesting in learning writing. In teaching writing, the teacher only gave topic without helping the students to develop their ideas. Unfortunately, the teachers do not guide them how to write well. It makes most students bored in learning writing process.

Based on the problem above, the researcher needs a creative method to motivate students to be active. The researcher chose one of the learning methods and model as solutions to deal with the problems of students and teacher, which can be developed in an effort to improve students' writing skills by using the mind mapping method. One of learning models that is taught to be able to create an interesting learning atmosphere, motivate students and have fun when students study the material is the mind mapping method (Hamid, 2014). Buzan stated that Mind mapping is a powerful graphical method which provides a universal key to unlock brain's potential. This process makes students more active and creative, improves their memory and solves writing problems more effectively. Mind mapping method has advantages over other methods. Mind mapping represents concepts or ideas more than the outline method, and mind mapping is easier to organize and link concepts or ideas than generate new ideas, such as the brainstorming method. This learning model is suitable to improve students' writing skills.

In order to know, if the mind mapping method is effective in improving students' writing or not, the researcher would like to conduct the research under the title of "The Effectiveness of Mind Mapping to Teach Writing Procedure Text in SMPN 1 Diwek".

Based on the analysis in the background of study above, the statement of the problems in this study are as follows: (1) How is the students' writing skill on procedure text before being taught using the mind mapping learning method? (2) How is the students' writing skill on procedure text after being taught using the mind mapping learning method? (3) Is there any significant difference of the

students' writing skill on procedure text between before and after being taught using mind mapping method in improving students' writing skills?

The researcher reviewed some previous studies that support his view about improving students' writing skill by using mind mapping method. First, Romadhloni (2015). She discussed about the positive responses of using mind mapping as a pre-writing strategy to help the students in writing for eighth grader of junior high school. Second, Sasongko (2017) found that the using of mind mapping could develop the capability and students learning outcomes. Third, Indirana & Rahman (2019). They did treatment in SMK to improve English teaching and learning process in writing descriptive text using mind mapping. Next, Yahrif (2021). He conducted treatment a study about teaching recount text using mind mapping technique in class tenth of senior high school to increase students' writing ability. Last, Saputra et al. (2021). They did treatment in Elementary School to improve students' learning outcomes using mind mapping method.

Therefore, the purpose of the problems in this study are to find out: (1) The students' writing skill on procedure text before being taught using the mind mapping learning method. (2) The students' writing skill on procedure text after being taught using the mind mapping learning method. (3) Whether or not there is significant difference of students' writing skill on procedure text between before and after being taught using mind mapping method in improving students' writing skills.

The researcher hopes this study would give information about improving students' writing skill on procedure text using the mind mapping learning method as consideration, support and contribution. And hopes this study will be useful for the teacher, students and another researcher.

## **Method**

Research method is a systematic activity using certain method to find new thing or to prove a theory (Safitri, 2018).

### ***Research Design***

Considering the purpose of this research, the researcher used quantitative method applied pre-experimental research which is the type of research that has only one class as an object. Quantitative research is an approach for testing objectives theories by examining the relationship among variables (Creswell, 2014). The class as object of pre-experimental research is called the experimental group. It entails pre-test, treatment, and post-test. In this research the researcher gave pre-test for students, then the treatment by using mind mapping method. After gave the treatment the researcher gave post-test for students. In the pre-experimental design, the researcher used One-Group Pretest-Posttest design.

### ***Research Participants***

The researchers often find difficulties in determining and distinguishing which are the characteristics of the research location that can be used as a population and sample. This difficulty is often caused by the existence of internal criteria that determine the population, such as content, scope, limited time and population to be studied (Samsu, 2017). So, population is about data, not people or things. In line, the population is the entire sample.

The population of this research was all the students in the ninth grade at SMP Negeri 1 Diwek consist of eight classes and the total of 254 students. The researcher used purposive sampling technique of ninth classes, this research only took one class as the sample. Based on observation, the teacher give recommendation and it was conducted at the ninth grade in class IX C consist of 32 students.

### ***Data Collection***

Technique of data collection refers to the way to get accurate data for supporting this research. The technique that used in gathering data in this research was a pen and paper method. The experimental group got two tests. Those tests were pre-test and post-test.

In quantitative research, the researcher conducted validity test of the test and measurement. Then, the researcher also conducted readability test to ensure that the test could be understood.

### ***Procedures of the Research***

#### ***1. Observation***

Observation is held in order to know how the student' writing skills and their behavior during teaching-learning process in class, especially in writing class, and to know the class management.

#### ***2. Determining Mind Mapping as Method***

After conducting observation, the researcher considered mind mapping method as solution to teach writing class. Based on observation, the researcher determined mind mapping after knowing their behavior during teaching-learning process in class.

#### ***3. Preparing Instruments of Research***

The researcher prepared the research instruments after determining mind mapping, the instruments included learning material, RPP, pre-test and post-test.

#### 4. *Pre-test*

Pre-test is a test that the researcher gave to the students to find out how far the students' writing skill in procedure text. The pretest gave to the students at the first meeting in the school.

#### 5. *Treatment*

The treatment was given to the experimental group after the researcher gave the pre-test. In writing the procedure text, the researcher treated the students by using mind mapping technique in two meetings. Each meeting took time about 2x40 minutes.

#### 6. *Post-test*

The post-test is the final test for the experimental group. Post-test gave to the students, after that they submit their answers to the researcher. In this test, the researcher provided a test with similar difficulty level but in different topics. For post-test, the researcher gave topic "How to Make Ice Strawberry Bird Nest".

### **Data Analysis**

The researcher analyzed the data after collecting the data. The scores obtained by students in writing calculated using descriptive statistics to determine the average of pre-test and post-test scores. Furthermore, the researcher should look for the normality of pre-test and post-test. The next step, the researcher conducts an analysis using paired-samples t-test to determine if a significant difference in mean score occurred. If the difference between the average pre-test score and the post-test score is significant, it can be said that the mind mapping method is an effective method for learning writing. This effectiveness is achieved when the score of sig. 2 tailed is lower than 0.05. All calculations using the SPSS application version 25.

### **Findings**

Research findings describe the results of data analysis, the researcher explains the results of data analysis from the data that has been collected. The aim was to find out the significant difference in students' writing skill in procedure text before and after applying the Mind Mapping Method. The writing test consists of a pre-test and a post-test. The pre-test was given to determine the students' writing skill before being given a method or giving treatment, and the post-test was given to determine the students' improvement in writing skill in procedure text after being given treatment. The improvement in writing skill on procedure text is known from the results of the pre-test and post-test. The researcher compared the results of the pre-test and post-test, if the post-test result is higher than the pre-test, it means that students' writing skill in procedure text is increasing.

Next, the researcher explained the process of pre-test to post-test. In first meeting the researcher gave pre-test to student, Then, the researcher gave treatment to students. Before explaining about procedure text, the researcher explained the mind mapping. After that, the researcher explained procedure text using mind mapping method. As a form of evaluation, students were asked to mention verbs, conjunctions and construct sentences from the given topic. In second meeting, researcher and students review material in first meeting. And last, the researcher gave post-test to the students.

### *The Students' Writing Skill on Procedure Text Before Being Taught Using Mind Mapping Method*

Before giving pre-test and post-test to the students, the researcher conducted a readability test. Readability test conducted to show how readable the test is and ensure that the test could be understood. The researcher used the Flesch reading ease scoring to know how readable the text and Flesch Kincaid grade level to know what educational level will need in order to understand the particular text.

Readability test can be conducted by manually and automatically. To conduct readability manually, you can use calculate by the following equation. For Flesch reading ease scoring is  $206,835 - 1015 \times (\text{total words/ sentences}) - 84,6 \times (\text{total syllables/ words})$ . And Flesch Kincaid grade level is  $0,39 \times (\text{total words/ sentences}) + 11,8 \times (\text{total syllables/words}) - 15,59$ . Then, conducting readability test automatically can be calculated online in <https://goodcalculators.com/flesch-kincaid-calculator/>. The result that conducted online by the researcher, it showed that the score of flesh reading ease is 62,8 and score of flesh Kincaid grade level is 6,6. From the score of 60-70 estimated reading grade level in eighth and ninth grade.

Next, the researcher conducted the process of pre-test. The test was in the form of mind mapping, in steps form contained pictures. The topic of the mind mapping was "How to Make Pam Sugar Coffee". The students are asked to observe the picture that contain the mind map, then they write procedure text from mind mapping and make appropriate sentences from the pictures in the steps form. The test scoring based on content, mechanics organization, and grammar. The time that they have to finish the test is 40 minutes. The last, the students have to submit their answer to the researcher.

To calculate the score of students' writing skill in pre-test and post-test. The researcher used the scoring rubric adopted from brown. The scoring rubric of writing assessment by brown has four components to score, they are Content, Vocabulary, Grammar and Mechanics. All components have four level in scoring, one point for poor, two points for fair, three points for good and four points for excellent. Then the point in every component multiplied by the weighting. The

Content have three points to be multiplied, Vocabulary and Grammar have 2.5, and Mechanics has two points to be multiplied. After multiplying the score, then divided by 40, and multiple the score by 100. The last, the result of the counting is the score that the students obtained.

From the students' score of pre-test, the frequency of students' writing scores which was sampled by twenty-eight students, the result explained that none of the students gained score of 90-100, none student gained score of 0-29, three students gained 80-89, also three students gained 30-39, five students gained score 70-79 and five students also gained 50-59, and eight students gained 60-69. The total was 1652 and the average was 59. It can be concluded that the students' writing skill on procedure text was low in pre-test.

### ***Students' Writing Skill on Procedure Text After Being Taught Using Mind Mapping Method***

After conducting the treatment in second meetings, the researcher gave post-test to the students. The researcher provided the post-test with similar difficulty level as pre-test, but in different topic. The topic of the post-test was "How to Make Ice Strawberry Bird Nest". Same as pre-test, in post-test the students asked to observe the pictures that contained mind mapping, but in steps form contained pictures. They have to write procedure text by the mind mapping and make appropriate sentences from the pictures in the steps form. After they finished the test, the students submit their test to the researcher.

From the students' score of post-test, the frequency of students' writing scores. The result explained that seven students gained score of 90-100, six student gained score of 80-89 and also six students got score of 70-79, four students classified in score 60-69, three students got 50-59, two students gained 40-49, and last, none students gained 0-39 of score. It meant the students' score of writing skill in post-test was better than in pre-test, because the percentage rate in post-test was higher than pre-test. The total was 2092 and the average was 74,73. It can be concluded that the students' writing skill on procedure text was medium in post-test.

***The Significant Difference Between Students' Writing Skill on Procedure Text Before and After Being Taught Using Mind Mapping Method***

In analyzing the data, the researcher tried to find out the analysis using the descriptive statistic. The result can be shown in the table below:

Table 1. Descriptive Statistics

	N	Range	Mini mum	Maxi mum	Sum	Mean		Std. Deviation
						Statistic	Std. Error	
Pre-test	28	52.5	32.5	85.0	1652.0	59.000	2.8853	15.2674
Post-test	28	60.0	40.0	100.0	2092.5	74.732	3.3712	17.8385
Valid N (listwise)	28							

Based on the table 1 above, from 28 students, during the pre-test, the minimum score is 32,5, and the maximum is 85. And during the post-test the minimum score is 40, and the maximum is 100. The total score during the Pre-Test is 1652, and on the Post-Test is 2092,5. The average score of the Pre-Test is 59,0, and on the Post-Test 74,73. The standard error score in the Pre-Test is 2,885, and in the Post-Test 3,371. The standard deviation statistic in the pre-test is 15,267, and in the post-test is 17,838. Based on the Descriptive Statistics table, it can be seen that the students' post-test scores are higher than the pre-test scores.

After calculating the descriptive analysis by descriptive statistics, followed by the normality test. The researcher tried to find out analysis one-sample Kolmogorov-smirnov test to analyze the normality of the data. The result can be shown in the table 2.

Table 2. One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		28
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	8.13108616
Most Extreme Differences	Absolute	.111
	Positive	.101
	Negative	-.111
Test Statistic		.111
Asymp. Sig (2-tailed)		.200 <sup>c,d</sup>
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		



The researcher conducted a normality test to find out whether the data was normal or not. If the data shows more than 0,05, it means that the data is normal. Based on the normality test data that has been carried out by the researcher, it shows that sig. 2-tailed is 0,200, it showed that the data was normal.

After conducting the normality test and the data was declared to be described as normal. Next step the researcher conducted the paired sample test, which was used to test the hypothesis. If sig. t score <0.05, Ha accepted and H0 rejected. The result can be shown in the table 3 as follows:

Table 3. Paired Samples Test

		Paired Differences					t	df	Sig (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the difference				
					Lower	Upper			
Pair 1	Pre-test – Post-test	-15.7321	9.5019	1.7957	-19.4166	12.0477	-8.761	27	.000

Based on the table 3 above, the data shows sig. (2-tailed) 0.000. The data is less than 0.05, it meant that H0 is rejected and Ha is accepted. In conclusion, students' writing skill in procedure text was increased. It has meaning that Mind mapping method was effective to be applied to improve students' writing skill on procedure text at class IX C in SMP Negeri 1 Diwek, Jombang.

### Discussion

In this study, the researcher conducted research at SMP Negeri 1 Diwek, Jombang. Students of class IX C were the sample in this study, the total of students were 28 students. The researcher conducted research around 2 days. On the first meeting, the researcher conducted a pre-test, after giving pre-test, the researcher gave treatment to students. In second meeting, the researcher and students review the material as the second treatment, and last, after giving second treatment, the researcher gave post-test to the students, which is the post-test has same difficulty as pre-test.

#### *Students' Writing Skill on Procedure Text Before Being Taught Using Mind Mapping Method*

The students' writing skill on procedure text in pre-test was low. It happened because the students were difficult to develop their ideas to write. The students said that writing is difficult to learn as it demands them to express their

ideas and organize their ideas. It supported by Nurlaila (2013), conveying their ideas to be written on the paper is one part that makes the students feel that the writing is difficult.

The other cause is the students translated the text using word by word technique to translate. Therefore, the students' text translation was not equivalenced the meaning of the text, it was the common errors that students faced. As mentioned by Putri (2020), every language has different way in arranging word by word to be phrases, sentences, paragraphs or essay.

Then, other problem that the researcher found was the students did not know how to organize in writing procedure text, especially in the steps section. Salviyati et al. (2022) said that every type of writing has different way to organize each part of the text. Therefore, the students have to know the organization before they write the text. Most students in class learned many types of text in writing, it caused the students difficult to remember the organization in every type of text.

### ***Students' Writing Skill on Procedure Text After Being Taught Using Mind Mapping Method***

After the treatment, the researcher conducted post-test to find out the difference between pre-test and post-test score. The post-test has similar level with the pre-test, but in different topic. And the scoring of post-test also employed rubric that adopted by Brown that including four aspects, namely content, grammar, vocabulary and mechanic.

In post-test their score increased into medium level. The score of students' writing skill on post-test improved in four aspect that included in scoring rubric adopted by brown, although some students still difficult to translate and use dictionary to help them. As said by Bharati & Shitaprajan (2016) that the students tend to translate their ideas from mother tongue then express their ideas into long sentences in English.

. Mind mapping method helped students to plan their writing in procedure text. Most of the students plan their writing easily after applying mind map. As said by Nurlaila (2013) the students reported that the rough idea in bubbles help them to plan their writing. Furthermore, the content of the paragraph could be classified well when the students made mind mapping.

Another cause was the students were confused to choose appropriate diction. As mentioned by Bharati & Shitaprajan (2016), one of students' problems in writing is the students were confused in choosing words and sentences when writing. Other problem that the researcher found was the students did not know how to organize in writing procedure text, especially in steps section. Meanwhile some students cannot arrange the word into sentences and sentences into paragraph.

Then, the improvement of students' writing skill in procedure text using mind mapping method is the students able to write enjoyably. Mind mapping facilitated fun writing by visualization of the ideas and refreshed the students' mind. Romadhloni (2015) said that mind mapping helped the students to write enjoyably by facilitating fun learning to the students. As mentioned by Hamid (2014), Mind mapping is one of learning method that is taught to be able to motivate students, create an interesting atmosphere, and enjoyable when the students study the material.

### ***The Significant Difference Between Students' Writing Skill on Procedure Text Before and After Being Taught Using Mind Mapping Method***

After being taught using mind mapping method, the students' writing skill in procedure increased. It shows that students are more interested in learning when the researcher used mind mapping method.

From the data that the researcher has collected through Pre-Test and Post-Test, it can be concluded that teaching writing using Mind Mapping method is more effective and improves students' writing procedure text. Where at the time of the pre-test, many students were still weak in several criteria namely Content, Grammar, Vocabulary and Mechanics, and when given treatment, the overall score increased when giving the post-test questions. This means that the effectiveness of the Mind Mapping method is considered to be successfully applied in improving students' writing skill in procedure text.

Regarding to the findings of this research, the effectiveness of mind mapping was supported by several of relevant studies; First, Salviyati et al. (2022). They conducted treatment in ninth grade of junior high school 14 Palu to improve writing skill in writing procedure text using mind mapping technique. Second, Indirana & Rahman (2019). They did treatment in SMK Yusuf Abdussatar Kediri to improve English teaching and learning process in writing descriptive text using mind mapping. Third, Yahrif (2021). He conducted treatment a study about teaching recount text using mind mapping technique in class tenth of SMAN 12 Makassar to increase students' writing ability. Next, Sasongko, (2017) found that the using of mind mapping could develop the capability and students learning outcomes. Last, Saputra (2021). He did treatment in Elementary School to improve students' learning outcomes using mind mapping method.

From the findings that supported this research above, the researcher concluded that mind mapping method was effective and applicable to teach writing English, also had positive effect and responses from the students. Mind mapping also could develop the capability and students' learning outcomes and improve English teaching and learning process. Furthermore, mind mapping

also suitable for all level of education, elementary school, junior high school until senior high school.

### **Conclusion**

The research results improve four indicators which is showed in the score of pre-test, and the post test. The indicators include content, grammar, vocabulary and mechanics. Test by test showed significant improvement. Mind Maps also make the students' skill in writing procedure text increase. The students showed great interest in doing pre-writing using Mind Maps. The teaching learning writing was no longer boring.

Based on the findings and discussion, it can be concluded that mind mapping method was effective to build students' writing skill in procedure text. The writing skill on procedure text of class IX C SMP Negeri 1 Diwek Jombang was still considered lacking when the pre-test was carried out before treatment. It is known that the mean score of the pre-test is 59, it means that the students' writing skill in procedure text were low in pre-test. The writing skill on procedure text of class IX C SMP Negeri 1 Diwek Jombang students increased when the post-test was carried out after treatment. It is known that the mean score of the post-test is 74. It can be concluded that the students were increased to medium level of writing, and the Mind mapping is an effective method for teaching writing in class IX C SMP Negeri 1 Diwek Jombang.

The researcher conducted a three-stage test to find out the significant differences between students' writing skill on procedure text before and after being taught using mind mapping. First is a descriptive analysis test, based on the table, the post-test score is higher than the pre-test score. Followed by the normality test (One-Sample Kolmogorov-Smirnov Test) the data will be declared normally distributed if  $> 0.05$ , based on the normality test of the data that has been carried out by the researcher, it shows that sig. 2-tailed is 0.200, meaning that the data is normally distributed. Followed by the Paired Samples Test, based on the table, the data shows sig. (2-tail) 0.000. The data is smaller than 0.05, meaning that  $H_0$  is rejected and  $H_a$  is accepted. Therefore, students' writing skill in procedure text was increased. This means that mind mapping method is effectively applied in improving students' writing skill on procedure text at SMP Negeri 1 Diwek Jombang.

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