

The Effect of Word Mapping Technique on Students' Vocabulary Mastery at the Eighth Grade of SMPT Mulia Hati Insani Warunggunung

Anang Jamaludin¹, Masrupi Masrupi², Raswadi Raswadi³, Iim Khairunnisa⁴, Eneng Liah Khoiriyah⁵, Eka Dewi Fithrotunnisa⁶, Dede Imtihanudin⁷
1,2,3,4,5,6,7 STKIP Syekh Manshur Pandeglang, Indonesia

Jl. Term. Abdul Halim No.Km, RW.5, Kadulisung, Kec. Kaduhejo, Kabupaten Pandeglang, Banten 42253, Indonesia

Korespondensi penulis: anangjamaludin6@gmail.com

Abstract. The purpose of this study was to examine the effect of word mapping technique on vocabulary acquisition of 8th grade students of SMPT Mulia Hati Insani Warunggunung. The quantitative research method was conducted using a pseudo-experimental design. The sample of this study amounted to 62 students who were divided into experimental and control classes. Tests were used to collect data on students' vocabulary acquisition scores, and t-test was used to analyze the data. For the experimental class, the average post-test score was (75.35), higher than the pre-test score (34.81). From the independent sample t-test analysis, the value of t_{count} (11.096) > t_{table} (1.671) was obtained. It's mean H_0 is rejected and H_a is accepted. The effect size value of 2.814 indicates a very large influence. In conclusion, there is a significant effect on speaking ability between students who are taught using the word mapping method and those who are not taught using the word mapping method.

Keywords: Word Mapping Technique, Vocabulary

1. BACKGROUND

Vocabulary mastery is an important aspect that affects students' ability to speak and communicate effectively. A broad and appropriate vocabulary is the main foundation in understanding reading texts, expressing ideas, and interacting in various communication situations. In the midst of the challenges students face in expanding their vocabulary, research on learning techniques that can improve vocabulary mastery becomes increasingly relevant and significant.

On the other hand, many Indonesian students still have difficulties in mastering the four skills of English, such as listening, reading, speaking and writing. This is due to the lack of vocabulary that students have. Therefore, they still have difficulties in understanding the subject matter. Their English skills will not improve if students do not master vocabulary first. Students will not understand what they read, do not know how to speak well, cannot understand what they hear and also do not know what they want to write if they do not understand vocabulary first. So, it means that the four skills (reading, writing, speaking, listening) cannot be done if students cannot master vocabulary well before starting to learn other language skills.

After the researchers made initial observations and conducted interviews with Mrs. Tri Yuni Monita S.Pd. an English teacher at SMPT Mulia Hati gila Warunggunung, revealed that students face serious obstacles in mastering the four basic skills in English learning, namely listening, reading, speaking and writing. The main factor causing these difficulties is the lack of vocabulary mastery. The limited vocabulary can be seen from the students' difficulty in expressing their ideas during the learning process. English has a characteristic where the pronunciation of a word is often different from its writing. This causes students to have difficulty in understanding the meaning of the vocabulary they encounter in reading or conversation. The inability to understand the meaning of these words results in difficulties in their use in the appropriate context. In practice, the difficulties experienced by students are not only limited to understanding the meaning of words, but also to the ability to apply vocabulary in relevant contexts. Without a strong understanding of the meaning of words, students will find it difficult to construct sentences or express ideas just as effectively in English. In addition, there are still many students who have not reached the vocabulary mastery target for junior high school level. Thus, the lack of vocabulary mastery becomes a real obstacle in learning English at SMPT Mulia Hati Insani Warunggunung. To overcome this, more intensive efforts need to be made in expanding students' vocabulary.

The effort made to overcome this problem is by using Word Mapping Technique. The purpose of the word mapping technique is to encourage students to think more broadly and deeply about one word and the words associated with it. By connecting one word with other words or phrases, their vocabulary will expand. By connecting one word with another word or phrase. In vocabulary teaching, Word Mapping technique is considered as an appropriate and applicable technique used by teachers in the classroom, especially in building a large vocabulary.

2. THEORETICAL STUDY

Vocabulary is the key to understanding and most new language learning consists of learning new words (Wahyudin et al., 2018). Vocabulary in learning English is one of the most important components because it is the fundamental skill for mastering a language (Noviyanti et al., 2023). In English, vocabulary has an important influence to build up learners' communication skill (Listyani & Pradina, 2021). Vocabulary is a language component significantly impacts an individual's capacity to generate language (Anggraini, 2023) Vocabulary plays a very important role in learning English. Vocabulary is a fundamental basic

skill to master a language. In addition, vocabulary also plays a role in building the communication skills of English learners. The ability to use vocabulary well also has a significant impact on an individual's ability to produce language effectively. Therefore, understanding and mastering vocabulary is crucial in developing students' language skills.

From the above statement it can be concluded that Vocabulary is very important in learning English because it is a fundamental basic skill to master the language. Mastery of vocabulary helps build communication skills and the ability to produce language well. Therefore, understanding and mastering vocabulary well is very important in developing students' language skills

Word mapping is a visual way to expand vocabulary, and to add information related to those words (Ramadhani, 2023). Word mapping is one of the techniques that is appropriate to be applied in teaching vocabulary (Hidayah et al., 2020). Word mapping is unique because it requires students to create a map for the word, enabling them to know the word as the synonym, antonym, or another form of a word (Kyamko et al., 2023). Word Mapping techniques are good to be applied in the pre-writing stage to explore ideas and generate thoughts on the topic for writing(Wahid & Sudirman, 2023)

Word mapping serves as a dynamic visual technique that not only expands vocabulary but also enhances word comprehension. This method is recognized for its ability to incorporate additional information related to words, enriching the learning process. Researchers highlight the effectiveness of word mapping as a suitable tool for teaching vocabulary, emphasizing its unique requirement for students to create word maps that facilitate a comprehensive understanding of words through synonyms, antonyms, or alternative word forms. Additionally, integrating word mapping techniques in the pre-writing stage can stimulate idea exploration and thought generation, contributing to a more effective writing process and also This technique increases students' active exploration of word relationships, therefore, it leads them to a deeper understanding of word meanings by developing their conceptual knowledge related to word

In conclusion, the researcher underlines that the use of word mapping technique is essential for improving students' vocabulary mastery in language education. The collective findings highlight the versatility and effectiveness of word mapping in expanding vocabulary and deepening word comprehension. By encouraging students to create word maps and explore different aspects of words, educators can develop a more engaging learning environment that

promotes vocabulary development and critical thinking skills. The incorporation of word mapping technique is emerging as a valuable approach in language teaching, providing a structured method for students to effectively navigate and internalize the intricacies of language. Therefore, the application of word mapping techniques aligns with experts' recommendations, offering a practical and enriching tool to improve language learning outcomes and enhance students' vocabulary mastery.

The research presents two hypotheses:

Null Hypothesis (H₀):

The use of the word mapping technique is not effective in increasing vocabulary at SMPT Mulia Hati Insani Warunggunung.

Alternative Hypothesis (H_a):

The use of the word mapping technique is effective in increasing vocabulary at SMPT Mulia Hati Insani Warunggunung

These hypotheses serve as the basis for the research study and will be tested to determine the impact of the word mapping technique on vocabulary improvement among the students SMPT Mulia Hati Insani Warunggunung.

3. RESEARCH METHOD

In this research, researcher was conducted in experimental research with a quantitative approach, the researcher used Quasi Experimental design with two randomized groups, namely pre-test and post-test. The population in this study were students at SMPT Mulia Hati Insani Warunggunung, which was 230 students. While the sample in this study was 62 students who were divided into two groups, namely class VIII A as an experimental class of 31 students and Class VIIB as a control class of 31 students.

The data collection technique used by researchers in this study is by conducting tests, namely the Pre-Test and Post-Test tests, with the instruments used, namely, the test consists of 40 questions and uses a multiple choice format, which the instrument question is a question that has been tested for validity first . Each question has four answer choices, namely a, b, c, and d. Students then choose the answers they consider. Students then choose the answer they consider correct. Students then choose the answer they consider correct. By using these various

instruments, researchers can collect comprehensive and valid data to answer research questions.

To determine the effect of using the word mapping technique in improving students' vocabulary, this study will compare the means of the experimental group and the control group using the t-test. Before using the t-test, researchers will test the data with a normality test by using lilliefors and a homogeneity test. The purpose is to ensure that the data used in the analysis has a normal distribution and homogeneous variance among the groups. In addition, to determine how much effect the use of word mapping techniques has on student vocabulary mastery, researchers use the calculation of Effect size. Effect size is one of the statistical tests that measures the extent to which a variable affects other variables in a study or shows how effectively a variable affects other variables (Khairunnisa et al., 2022)

4. RESULT AND DISCUSSION

RESULT

In this section, the results of the research are presented. The researcher started this research in July to August 2024 at SMPT Mulia Hati Insani Warunggunung. The samples of this study were divided into two classes, namely class VIII A (consisting of 31 students) as the experimental class and VIII B (consisting of 31 students) as the control class. The vocabulary mastery teaching in the experimental class used word mapping technique, while the speaking teaching in the control class used conventional teaching technique. In the following description, the research findings are presented. The findings were obtained from the pre-test and post-test results of the experimental and control classes.

1. Analysis of Data

a) Normality Test

This is the normality result of Pre-test and Post-test Score from Experimental and Control class.

Table 4.1 The Result from Normality Tes

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
Class		Statistic	df	Sig.	Statistic	df	Sig.
Result of Vocabulary Test	Pre-Test Experiment	.163	31	.035	.952	31	.179
	Post-Test Experiment	.108	31	.200*	.928	31	.039
	Pre-Test Control	.114	31	.200*	.957	31	.247
	Post-Test Control	.150	31	.072	.930	31	.043

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The basis for decision making on the Shapiro-Wilk normality test:

- a. If the significance value (sig) > 0.05, then the data is normally distributed
- b. If the significance value (sig) < 0.05, then the data is not normally distributed

Based on the results of statistical tests using SPSS, the results of the sig values are as follows:

- 1) Pre test Experiment sig (0.179) > 0.05, then the data is normally distributed
- 2) Post test Experiment sig (0.39) > 0.05, then the data is normally distributed
- 3) Pre test Control sig (0.247 > 0.05, then the data is normally distributed
- 4) Post test Control sig (0.043) > 0.05, then the data is normally distributed

b) Homogeneity Test

Table 4.2 Test of Homogeneity of Varian from Pre-Test and Post-Test of Experiment and Control Class

		Test of Homogeneity of Variance			
		Levene Statistic	df1	df2	Sig.
Result of Vocabulary Test	Based on Mean	2.021	3	120	.115
	Based on Median	1.078	3	120	.361
	Based on Median and with adjusted df	1.078	3	88.914	.363
	Based on trimmed mean	1.724	3	120	.166

Decision-making rules based on the mean significance value:

If the significance value based on the mean > 0.05, then the data is homogeneous

If the significance value based on the mean < 0.05 , then the data is not homogeneous

Based on the results of the SPSS Homogeneity test, the Sig. value based on the mean is $0.115 > 0.05$. That means it can be said that, the pre-test and post-test data for the experimental class and control class a data homogeneously distributed.

c) T-Test

The t-test results of the post-test scores of the control and experimental classes are as follows :

Table 4.3 The T-Test Result of Post Test both Experiment and Control Class

Group Statistics					
	Class	N	Mean	Std. Deviation	Std. Error Mean
Result of Vocabulary Test	Experiment Class	31	75.35	14.818	2.661
	Control Class	31	39.00	10.640	1.911

Table 4.4 The Independent Samples T-test Result

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
Result of Vocabulary Test	Equal variances assumed	3.963	.018	11.096	60	.000	36.355	3.276	29.801	42.909
	Equal variances not assumed			11.096	54.438	.000	36.355	3.276	29.767	42.952

The post-test results of the experimental and control classes were conducted after the treatment. Based on the data in table 4.4, it can be seen that there is a significant difference between the experimental class ($M=75.35$ and $SD=14.818$) and the control class ($M=39.00$ and $SD= 10.640$).

Then, the researcher compared the t_{value} and t_{table} to find out whether of word mapping technique in vocabulary teaching is effective to improve students' vocabulary or not. After calculating the data in table 4.9, it can be seen that the result of $t_{\text{value}} = 11.096$ with Sig. (2-tailed) = 0.000, and $t_{\text{table}} 0.005$ (5%) as the significance level is 1.671 with the degree of freedom (df) 60. It can be seen that $t_{\text{value}} = 11.096 > t_{\text{table}} = 1.671$ and the sign (2-tailed) is 0.000 < 0.005 . This means that the word mapping technique is effective on students' vocabulary mastery.

The last calculation is to test the hypothesis. This is a very important calculation, this calculation is done to answer the problem formulation of this study which is whether there is significant effect of using the word mapping technique on the students' vocabulary mastery of eighth grade at SMPT Mulia Hati Insani Warunggunung. So, the conclusion is as follows:

H_a : There is a significant difference in students' vocabulary acquisition between students taught by using word mapping technique and students taught without using word mapping technique.

H_o : There is no significant difference in students' vocabulary mastery between students taught using word mapping technique and students taught without using word mapping technique.

Then, the criteria of the hypothesis test as follows :

1. H_a accepted if $t_{\text{value}} > t_{\text{table}}$ or if the Sig. (2-tailed) < 0.005
2. H_o accepted if $t_{\text{value}} < t_{\text{table}}$ or if the Sig. (2-tailed) > 0.005

From the experimental and control class post-test results, it was found that the t_{value} was $11.096 > t_{\text{table}} = 1.671$ with a significance level of 0.05 (5%) and Sign. (2-tailed) is $0.000 < 0.005$, which means H_a is accepted. Thus, the researcher can conclude there is significant effect of using Word Mapping technique on students' vocabulary mastery.

d) The Effect Size

The effect size is utilized to gauge the effectiveness level of the teaching method implemented in the experimental group using Cohen's d coefficient.

In this scenario, the researcher utilized data from either paired or independent sample t-tests.

$$\text{Cohen's } d = \frac{M1 - M2}{\sigma_{\text{polled}}}$$

$$\text{Where } \sigma_{\text{polled}} = \sqrt{(S1)^2 + (S2)^2} / 2$$

$$\begin{aligned} \text{Cohen's } d &= (75.35 - 39.00) / \sqrt{(14.818)^2 + (10.640)^2} / 2 \\ &= 36.33 / \sqrt{332.789} / 2 \end{aligned}$$

$$= 36.33 / \sqrt{166.385}$$

$$= 36.33 / 12.909$$

$$= 2.814$$

Based on the results of calculations using the Cohens'd formula, a value of 2.814 was obtained. When viewed in the effect size interpretation criteria in table 3.4, the value obtained is $2.814 > 0.8$, which means it has an effect size Very large effect. It can be concluded that the Word Mapping Technique has a significant effect on students' vocabulary skills in the experimental class by showing an increase in test results during the post-test.

5. DISCUSSION

Based on data analysis on grade eight students at SMPT Mulia Hati Insani Warunggunung, there is a significant effect on students' vocabulary mastery taught using the word mapping technique. The data results from the test are divided into pre-test and post-test. Students who were taught by using the word mapping technique had higher scores than students who were taught without using the word mapping technique.

After calculating the normality test using SPSS, it can be proven that the pre-test and post-test data of the experimental and control classes are normally distributed. This can be shown by the significant value of each test, both the pre-test and post-test in the experimental and control classes, the significance number obtained is greater than 0.005 as contained in table 4.6. So it can be concluded that the overall data used in this study are normally distributed.

Furthermore, based on the results of the homogeneity test, the experimental class and control class data are declared to come from homogeneous data groups. This can be seen from the results obtained that the significant result of the pre-test of both the control class and the experimental class is greater than the significance value of 0.005 and the significant result of the post test of both the control class and the experimental class is 0.115 which is greater than the significance value of 0.005. Therefore, the data group is proven to be categorized as homogeneous data.

In analyzing the data, researchers analyzed the pre-test and post-test hypotheses of both experimental and control classes to determine whether the use of word mapping strategies had a significant effect on students' vocabulary mastery or not.

Researchers analyzed by conducting a independent sample t-test using SPSS with a significant level of 5% (0.05). 5% significant level (0.05), then the criteria are the t_{count} value of 11.096 and t_{table} of 1.671; sign. (2-tailed) is $0.000 < 0.005$. From the results of these calculations, it means that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. It can be summerized that there is a significant difference in students' vocabulary mastery by using word mapping technique in the learning process.

Next, to show the increase in the use of word mapping on students' vocabulary mastery, the researcher calculated the mean value of the experimental class and the control class by using the effect size with Cohen's d coefficient. The value is used to determine how far the effect of word mapping technique used on students' vocabulary mastery. From the calculation results, a value of 2.814 was obtained, which means that the word mapping technique has a very large influence.

Based on the explanation that has been presented, the researcher draws the following conclusions that the use of the word mapping technique has a significant effect on students' vocabulary mastery, especially in eighth grade students at SMPT Mulia Hati Insani Warunggunung.

6. CONCLUSION AND SUGESTION

CONCLUSION

After conducting vocabulary teaching experiments using the word mapping technique in the experimental class and without using the word mapping technique in the control class, the researcher obtained data on the experimental class, namely the lowest score was 55 and the highest score was 100. Where in the control class, the lowest score was 18 and the highest score was 53. Then, the researcher proceeded to calculate and analyze the data and produced a sig (2-tailed) statistical analysis value of $0.000 < 0.005$. The t_{count} value is $11.096 > t_{table}$ 0.05 (1.675). Therefore, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted which answers the formulation of the research problem. So that the researcher concludes that there is significant effect of Word Mapping Technique on students' vocabulary mastery between the experimental class and the control class.

SUGESSTIONS

Based on the conclusion that has been discussed, the researcher has found some suggestions as follows:

1. Teacher

Teachers can consider integrating the word mapping technique into vocabulary learning to improve students' comprehension. In addition, teachers need to monitor students' progress regularly to ensure the effectiveness of this technique in improving vocabulary acquisition.

2. Students

To students, it is recommended to be actively involved in the learning process using the word mapping technique. Students can utilize this technique as a tool to strengthen their vocabulary understanding. It is important for students to continue practicing and developing their ability to use this technique to improve their vocabulary.

3. Future Researcher

For future researchers, it is recommended to expand the scope of this study by involving a larger sample or by involving more relevant variables. In addition, future researchers can examine the effect of this word mapping technique on a more in-depth level of vocabulary comprehension or on other aspects of language, such as speaking or writing skills. It is also necessary to consider additional factors that might affect the effectiveness of this technique.

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