

## The Effectiveness of the Make a Match Technique in Improving Students' Vocabulary Mastery at MTsN 1 Merangin

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### ABSTRACT

This study aimed to examine the effectiveness of the Make a Match technique, as part of the cooperative learning model, in improving students' vocabulary mastery at MTsN 1 Merangin. A quasi-experimental design was employed, involving an experimental group and a control group. The data were collected through pre-test and post-test instruments and analyzed using descriptive statistics, N-Gain analysis, and an Independent Samples T-Test. The findings revealed that the experimental group showed a significant improvement in vocabulary mastery compared to the control group. The statistical result indicated that the significance value ( $p < 0.05$ ), confirming a significant difference between the two groups. Furthermore, the N-Gain score of the experimental group was categorized as moderate to high. These results suggest that the Make a Match technique is effective in enhancing students' vocabulary mastery.

**Keywords:** *Cooperative learning; Make a Match Technique; Vocabulary Mastery; Quasi-Experimental; EFL*

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## INTRODUCTION

Vocabulary plays a crucial role in language learning, as it forms the foundation for developing listening, speaking, reading, and writing skills. Without sufficient vocabulary, students may struggle to comprehend and express ideas effectively. Nation (2019) states that one key component of effective writing and communicating abilities is having sound vocabulary knowledge. A strong vocabulary provides speakers with the tools they need to express their thoughts, ideas, and feelings effectively. Furthermore, Aisyah et al., (2019), communication among students while learning, directing thoughts, opinions, and knowledge is made less difficult if the vocabulary has been properly studied. Therefore, vocabulary mastery is considered a fundamental aspect of language learning because it facilitates students in communicating ideas clearly, improving writing skills, and participating actively in classroom interaction. Vocabulary mastery enables students to communicate ideas accurately and supports the development of overall English proficiency.

However, many students in Indonesian junior high schools, including those at MTsN 1 Merangin, face some difficulties in learning vocabulary. Vocabulary learning is frequently conducted through memorization and translation activities, which may reduce students' interest and participation during the learning process. As a result, students often find it difficult to remember new words, pronounce them correctly, and

use them appropriately in context. These issues indicate the need for innovative and interactive teaching strategies that can actively involve students in the learning process. Teachers are encouraged to implement student-centered learning approaches that promote active participation and collaboration in order to motivate students to be more active in the learning process.

In response to these problems, teachers are encouraged to implement student-centered learning approaches that promote active participation and collaboration. One such approach is cooperative learning, which emphasizes teamwork and interaction among students to achieve learning goals together. According to Robert E. Slavin (2015), cooperative learning can improve students' academic achievement, motivation, and social interaction. Through cooperative activities, students are expected to become more engaged and confident in practicing vocabulary with their peers. Moreover, the implementation of Kurikulum Merdeka at MTsN 1 Merangin supports the use of innovative and collaborative learning methods in the classroom. Kurikulum Merdeka emphasizes student-centered learning, active participation, creativity, critical thinking, and collaboration among students (Kemendikbudristek, 2022). Therefore, cooperative learning techniques such as the Make a Match technique are considered appropriate to be applied in English learning because they encourage students to participate actively, communicate with peers, and develop vocabulary mastery through meaningful learning activities. According to Robert E. Slavin (2015), cooperative learning promotes students' academic achievement and social interaction through group collaboration. By applying this technique, the learning process is expected to become more interactive, enjoyable, and aligned with the objectives of Kurikulum Merdeka.

Several previous studies have investigated the effectiveness of the Make a Match technique in improving students' vocabulary mastery. Monica Madhanty et al. (2022) found that the Make a Match technique successfully improved students' vocabulary mastery and learning activities at SMK Negeri 7 Bandar Lampung. The students' mean score increased from 70.67 in the first cycle to 78.67 in the second cycle. Furthermore, Dwi Sinta Mardiana Ima et al. (2024) reported that the Make a Match technique had a significant effect on students' vocabulary mastery at SMPN 1 Panti Jember, where the post-test mean score increased from 72.30 to 87.40 after the treatment. Similarly, Meikardo Samuel Prayuda et al. (2023) revealed that the application of the Make a Match technique improved students' vocabulary mastery and learning motivation at SMP Dharma Wanita Medan. Another study conducted by Sardianti Dian et al. (2025) also showed that students taught using the Make-a-Match technique achieved significantly higher vocabulary scores compared to students taught through conventional methods.

Although previous studies have demonstrated the effectiveness of the Make a Match technique in improving vocabulary mastery, several gaps still exist. Most previous studies focused on general junior high schools or vocational schools and rarely investigated its implementation in Islamic junior high schools (Madrasah Tsanawiyah), especially at MTsN 1 Merangin. In addition, many previous studies mainly emphasized students' vocabulary achievement scores without relating the learning process to the implementation of Kurikulum Merdeka, which promotes student-centered and collaborative learning. Therefore, this current study attempts to fill the gap by investigating the effectiveness of the Make a Match technique in improving students' vocabulary mastery within the context of Kurikulum Merdeka implementation at MTsN 1 Merangin. This study is expected to provide additional insight into the application of cooperative learning techniques in Islamic junior high school contexts and contribute to

English language teaching practices under Kurikulum Merdeka. Based on the background above, the research question of this study is: “Is the Make a Match technique effective in improving students’ vocabulary mastery at MTsN 1 Merangin?”

## METHOD

This study employed a quantitative research approach using a quasi-experimental design. According to John W. Creswell (2014), quantitative research is an approach for testing objective theories by examining the relationship among variables. These variables can be measured using instruments, and the collected numerical data are analyzed through statistical procedures. Based on Creswell’s theory, this study used a quantitative approach because the researcher analyzed numerical data from students’ pre-test and post-test scores to determine the effectiveness of the Make a Match technique in improving vocabulary mastery.

The study was conducted at MTsN 1 Merangin during the 2025/2026 academic year. The population of this study consisted of seventh-grade students at MTsN 1 Merangin. Two classes were selected as the research samples using purposive sampling technique. One class served as the experimental group, while the other class served as the control group. Each class consisted of approximately 32 students.

The research instrument used in this study was a vocabulary test administered in the form of pre-test and post-test. The pre-test was conducted before the treatment to measure students’ initial vocabulary mastery, while the post-test was administered after the treatment to determine students’ improvement in vocabulary mastery. The test items consisted of multiple-choice questions related to the vocabulary materials taught during the research. Before being administered, the instrument was validated through expert judgment to ensure its validity and reliability.

The research procedure consisted of several stages. First, both the experimental and control groups were given a pre-test. Second, the experimental class received treatment using the Make a Match technique for several meetings, while the control class received conventional instruction. In the experimental class, students were asked to match vocabulary cards with their corresponding meanings, pictures and descriptions through cooperative learning activities. This activity encouraged students to interact actively, collaborate with peers, and practice vocabulary in a meaningful context. Meanwhile, the control class learned vocabulary through explanation, memorization, and individual exercises. After the treatment was completed, both groups were given a post-test. The data obtained from the pre-test and post-test were analyzed quantitatively using descriptive and inferential statistics (Creswell, 2014). Descriptive statistics were used to calculate the mean, minimum score, maximum score, and standard deviation of students’ scores (Sugiyono, 2019). Furthermore, the N-Gain analysis was used to determine the level of students’ improvement in vocabulary mastery. N-Gain analysis was widely used to measure students’ learning improvement after instructional treatment. For example, Badruttamam et al. (2025) used N-Gain to compare the effectiveness of learning media between experimental and control classes and found that the experimental group achieved a higher improvement level. N-Gain analysis was used to determine how much students’ abilities increased from the pre-test to the post-test in an accurate and normalized way. N-Gain also helped to show the effectiveness of the treatment. By calculating the difference between pre-test and post-test scores and comparing it with the maximum possible improvement, the researcher was able to determine whether the Make a Match technique provided a meaningful impact on students’ learning outcomes.

Given the quantitative design, the following steps outlined the data analysis approach:

#### A. Pre - test and Post-test Comparison

Since this is a quasi-experimental study with pre - test and post-test data, the analysis compared the students' scores before and after the intervention. The goal was to determine whether there was a significant difference in the improvement of vocabulary mastery.

##### *Descriptive Statistics:*

Began with descriptive statistics to summarize and describe the basic features of the data for both groups (control and experimental). This includes:

1. Mean (average score) for both vocabulary and speaking tests (pre-test and post-test).
2. Standard Deviation to show the variability of the scores.
3. Minimum and Maximum Scores to provide a range of scores in both pre-test and post-test.

Example:

1. Pre-test vocabulary score (experimental group): Mean = 50, SD = 10
2. Post-test vocabulary score (experimental group): Mean = 75, SD = 8

#### B. Independent Sample t-test (For Between-Group Comparison)

An independent sample t-test was used to compare the pre-test and post-test scores between the experimental group (students who received the "Make a Match" technique) and the control group (students who received traditional teaching methods). This determined whether the experimental group showed a greater improvement in vocabulary and speaking skills than the control group. The data obtained from the research were analyzed quantitatively to determine the effectiveness of the Make a Match technique in improving students' vocabulary. The analysis was conducted through several systematic steps as follows:

##### 1. Scoring the Test.

The first step in analyzing the data was scoring the students' pre-test and post-test results. Each student's answer was evaluated based on predetermined criteria. For the vocabulary test, correct answers were given a score of 1, while incorrect answers were scored 0. The total score was then converted into a scale of 0–100.

##### 2. Calculating the Mean Score.

After scoring the tests, the researcher calculated the mean score of both pre-test and post-test to determine the average performance of the students. The formula used to calculate the mean is as follows:

$$\bar{X} = \frac{\sum X}{N}$$

Where:

$\bar{X}$  = Mean score

$\sum X$  = Total score of all students

$N$  = Number of students

The mean score of the pre-test and post-test was compared to identify whether there was an improvement in students' achievement after the implementation of the Make a Match technique.

### 3. Testing the Normality of Data

Before conducting hypothesis testing, the researcher tested the normality of the data to determine whether the data were normally distributed. This test was conducted using the Shapiro-Wilk test through SPSS. If the significance value (Sig.) was greater than 0.05, the data were considered normally distributed.

### 4. Hypothesis Testing

To test the hypothesis, the researcher used a paired sample t-test to compare the mean scores of the pre-test and post-test. This test was chosen because the data were obtained from the same group of students before and after the treatment.

The formula for the paired sample t-test is as follows:

$$t = \frac{\bar{D}}{\sqrt{\frac{\sum (D - \bar{D})^2}{N(N-1)}}$$

Where:

$t$  = t-value

$\bar{D}$  = Mean of the differences between pre-test and post-test scores

$D$  = Difference between individual scores

$N$  = Number of students

The decision-making criteria were as follows:

Null Hypothesis ( $H_0$ ): There was no significant difference in the post-test scores between the experimental and control groups.

Alternative Hypothesis ( $H_1$ ): There was a significant difference in the post-test scores between the experimental and control groups.

## 5. Effect Size Calculation

Cohen (1988) suggests that when dealing with paired samples, the straightforward calculation of Cohen's  $d$  should be adjusted to account for the correlation between the pre-test and post-test scores for both within-group (pre-test to post-test) and between-group (experimental vs. control) comparisons. The Cohen's  $d$  formula could be seen as follow:

$$d = \frac{M_1 - M_2}{\text{pooled SD}}$$

Where:

- $M_1$  and  $M_2$  are the means of the two groups.
- The pooled SD is the standard deviation that combines both groups.

Interpretation of Cohen's  $d$ :

- Small effect:  $d \approx 0.2$
- Medium effect:  $d \approx 0.5$
- Large effect:  $d \approx 0.8$

## 6. Reporting and Interpretation

Based on the statistical results:

- a. The researcher interpreted the significance of the t-test results: if the p-value was less than 0.05, reject the null hypothesis and it can be concluded that the intervention was effective.
- b. The effect size was discussed to explain the practical significance of the results.
- c. Student feedback was analyzed to complement the quantitative findings, thereby providing a more comprehensive understanding of the effectiveness of the intervention.

## 7. N Gain analysis

N-Gain analysis was widely used to measure students' learning improvement after instructional treatment. For example, Badruttamam et al. (2025) used N-Gain to compare the effectiveness of learning media between experimental and control classes and found that the experimental group achieved a higher improvement level. The use of N-Gain scores in this study aimed to measure the extent of students' improvement in vocabulary mastery after the implementation of the Make a Match technique. N-Gain analysis was used to determine how much students' abilities increased from the pre-test to the post-test in an accurate and normalized way. N-Gain also helped to show the effectiveness of the treatment. By calculating the difference between pre-test and post-test scores and comparing it with the maximum possible improvement, the researcher was able to determine whether the Make a Match technique provided a meaningful impact on students' learning outcomes.

## FINDINGS AND DISCUSSION

The implementation of this research was organized into three main phases from October to November 2025: the pre-test phase, the intervention phase and the post-test phase. Each phase was carefully planned to ensure the reliability and validity of the collected data. In total, the research was conducted seven meetings. The pre-test phase was conducted in a single meeting to assess students' initial vocabulary mastery before the intervention. The intervention phase consisted of four meetings in which the "Make a Match" technique was applied to the experimental group, while the control group received traditional instruction. After the intervention, one meeting was devoted to conducting post-tests to assess the improvement of vocabulary mastery. English subject at MTs N 1 Merangin are conducted twice a week, 2 x 45 minutes, so that the entire study can be completed within approximately three to four weeks.

After all research procedures had been conducted, the data obtained from the pre-test and post-test were analyzed to determine the students' improvement in vocabulary mastery. The analysis compared results between the experimental and control classes. After getting the pre-tests and post-test data from both classes, the researcher used the normality test and the homogeneity test for different results. The normality test was conducted as a prerequisite analysis to ensure that the data met the assumption of parametric statistical testing. Since the sample size was 64 students ( $n < 100$ ), the Shapiro–Wilk test was used, as it is considered more appropriate and powerful for small sample sizes. The level of significance was set at 0.05. According to Shapiro and Wilk (1965), the Shapiro–Wilk test is designed to assess whether a sample originates from a normally distributed population. The test evaluates the conformity of the data distribution to the characteristics of a normal distribution by comparing ordered sample values to their expected normal values. After confirming that the data were normally distributed, the homogeneity test was carried out to ensure equal variance between two groups.

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
prevoc_value	,119	64	,025	,973	64	,168
postvoc_value	,115	64	,036	,963	64	,051

Table 4.1 Test of Normality

The Homogeneity test was conducted to check whether the variance of the two groups (Class VII A and VII B) was equal before conducting the Independent Sample t-test, the researcher used the Test of Homogeneity of Variances. The rule of homogeneity were as follows: If Sig. > 0.05 → Variances are homogeneous (equal). This meant that the spread of scores in Experimental Group  $\approx$  Control Group the assumption of homogeneity was fulfilled.

If Sig. < 0.05 → Variances were not homogeneous. This meant that the spread of scores between groups is significantly different, the assumption of homogeneity is violated. Therefore, the equal variances that is used in Independents sampled t-test.

Oneway

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
score_prevoc	,103	1	62	,749
score_postvoc	,007	1	62	,932

Table 4.2 the result test of homogeneity of variances

Descriptives

	Class			Statistic	Std. Error
NGAINVOC	Class 7A	Mean		73,6040	2,94982
		95% Confidence Interval for Mean	Lower Bound	67,5878	
			Upper Bound	79,6202	
		5 % Trimed Mean		73,6969	
		Median		71,4286	
		Variance		278,446	
		Std. Deviation		16,68669	
		Minimum		42,86	
		Maximum		100,00	
		Range		57,14	
		Interquartile Range		20,83	
		Skewness		,235	,414
	Kurtosis		-,786	,809	
	Class 7B	Mean		23,1262	7,33975
		95% Confidence Interval for Mean	Lower Bound	8,1567	
			Upper Bound	38,0958	
		5 % Trimed Mean		27,5091	
		Median		37,5000	
		Variance		1723,904	
		Std. Deviation		41,51992	
		Minimum		-100,00	
		Maximum		77,78	
Range		177,78			
Interquartile Range		21,61			
Skewness		-2,049	,414		
Kurtosis		3,854	,809		

Since all significance values are:  $(0.749 > 0.05)$   $(0.733 > 0.05)$   $(0.932 > 0.05)$ ,  $(0.903 > 0.05)$ . This meant that all significance values were higher than 0.05 (0.749; 0.733; 0.932; 0.903). It indicated that the data were homogeneous. Therefore, the Independent Sample t-test was conducted using the Equal Variances Assumed row to determine whether there was a significant difference between the experimental and control groups.

The results of the analysis were presented as follows.

1. Students' Vocabulary Achievement

The data showed a comparison between students' vocabulary scores before and after the treatment.

- a. Experimental Class (VII. A). From the data it could be seen that mean pre-test vocabulary score: 63.91 mean post-test vocabulary score: 89.53 and mean N-Gain vocabulary: 73.61%. The results indicated substantial improvement in students' vocabulary mastery after the implementation of the learning strategy. Based on the N-Gain interpretation, a score of 73.61% fell into the high improvement category. Most students experienced significant progress, although a few students improved moderately.
- b. 1.2. Control Class (VII. B). The improvement in the control class was relatively low. The N-Gain score indicates that vocabulary development occurred but was not as significant as in the experimental class. Some students even showed minimal improvement or a slight decrease. It could be seen from the data that showed, mean pre-test vocabulary score: 68.59, mean post-test vocabulary score: 78.75 and mean N-Gain vocabulary: 23.13%. Overall, the experimental class demonstrated much higher vocabulary improvement than the control class. This suggests that the implemented teaching strategy had a positive effect on students' vocabulary mastery.

Table 4.4 The Pre-Test and Post Test, Independent Sample T-test

No	prev oc	Class	post voc	Post -Pre Vocab	Ideal -Pre Vocab	N Gain Voca b
1	55	1	80	25	45	55,56
2	55	1	95	40	45	88,89
3	45	1	75	30	55	54,55
4	65	1	90	25	35	71,43
5	70	1	100	30	30	100
6	60	1	80	20	40	50
7	75	1	95	20	25	80
8	80	1	100	20	20	100
9	65	1	90	25	35	71,43

10	75	1	100	25	25	100
11	75	1	95	20	25	80
12	85	1	95	10	15	66,67
13	70	1	95	25	30	83,33
14	80	1	95	15	20	75
15	80	1	100	25	25	100
16	60	1	85	25	40	62,5
17	70	1	95	25	30	83,33
18	50	1	85	35	50	70
19	55	1	85	30	45	66,67
20	60	1	85	25	40	62,5
21	65	1	90	25	35	71,43
22	50	1	90	40	50	80
23	70	1	100	30	30	100
24	65	1	90	25	35	71,43
25	55	1	80	25	45	55,56
26	50	1	75	25	50	50
27	45	1	85	40	55	72,73
28	65	1	90	25	35	71,43
29	60	1	85	25	40	62,5
30	55	1	80	25	45	55,56
31	70	1	100	30	30	100
32	65	1	80	15	35	42,86
33	60	2	75	15	40	37,5
34	65	2	80	15	35	42,86
35	55	2	70	15	45	33,33
36	85	2	75	-10	15	-66,67
37	75	2	85	10	25	40
38	60	2	60	0	40	0
39	85	2	70	-15	15	-100

The Effectiveness of...

40	70	2	85	15	30	50
41	55	2	70	15	45	33,33
42	60	2	75	15	40	37,5
43	75	2	85	10	25	40
44	80	2	90	10	20	50
45	60	2	75	15	40	37,5
46	55	2	90	35	45	77,78
47	60	2	75	15	40	37,5
48	80	2	85	5	20	25
49	95	2	90	-5	5	-100
50	80	2	75	-5	20	-25
51	70	2	85	15	30	50
52	65	2	80	15	35	42,86
53	65	2	80	15	35	42,86
54	50	2	65	15	50	30
55	70	2	85	15	30	50
56	75	2	80	5	25	20
57	60	2	75	15	40	37,5
58	70	2	70	0	30	0
59	55	2	70	15	45	33,33
60	65	2	80	15	35	42,86
61	90	2	90	0	10	0
62	75	2	85	10	25	40
63	70	2	85	15	30	50
64	60	2	80	20	40	50

## T - Test

**Group Statistics**

	Class	N	Mean	Std. Deviation	Std. Error Mean
score_postvoc	Class 7A	32	89,5313	7,76254	1,37224
	Class 7B	32	78,7500	7,72512	1,36562

Table 4.5 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
score_postvoc	Equal variances assumed	,007	,932	5,569	62	,000	10,78125	1,93596	6,91132	14,65118
	Equal variances not assumed			5,569	61,999	,000	10,78125	1,93596	6,91131	14,65119

Table 4.6 Independent Samples Test

**CONCLUSION**

Based on the findings of this study, it can be concluded that the Make a Match technique was effective in improving students' vocabulary mastery at MTsN 1 Merangin. The implementation of the Make a Match technique in the experimental class showed a significant improvement in students' vocabulary achievement compared to the control class that was taught using conventional teaching methods. The students who learned through cooperative and interactive activities demonstrated better understanding, retention, and use of vocabulary in the learning process.

The results of the statistical analysis supported the effectiveness of the technique. The post-test mean score of the experimental group was higher than the pre-test score, indicating that students experienced meaningful improvement after receiving the treatment. Furthermore, the Independent Samples T-Test showed that the significance value (Sig. 2-tailed) was lower than 0.05, which means that the alternative hypothesis ( $H_a$ ) was accepted and the null hypothesis ( $H_0$ ) was rejected. In addition, the N-Gain analysis indicated that the students' improvement was categorized at a moderate to high level, confirming that the Make a Match technique provided a positive impact on students' vocabulary mastery.

Therefore, the research question, “Is the Make a Match technique effective in improving students’ vocabulary mastery at MTsN 1 Merangin?” can be answered positively. The findings prove that the Make a Match technique is effective in enhancing students’ vocabulary mastery. The cooperative learning activities implemented through this technique encouraged students to participate actively, interact with peers, and learn vocabulary in an enjoyable and meaningful way. Students became more motivated and confident during the learning process because they were directly involved in matching vocabulary cards, meanings, and pictures collaboratively.

Moreover, the findings of this study are in line with the principles of Kurikulum Merdeka, which emphasizes student-centered learning, collaboration, creativity, and active participation in the classroom. The Make a Match technique successfully created a more interactive and engaging learning atmosphere that supported the objectives of English language learning at MTsN 1 Merangin. Therefore, English teachers are recommended to apply the Make a Match technique as an alternative teaching strategy to improve students’ vocabulary mastery.

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