

# From Playing To Retention: Enhancing Students' Vocabulary Mastery Through Flashcard-Based Instruction

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## ABSTRACT

Adequate vocabulary mastery is a fundamental requirement for successful English language learning, as emphasized in the Merdeka Curriculum. However, many junior high school students still exhibit low vocabulary proficiency due to the use of monotonous and teacher-centered conventional teaching methods. Therefore, this study aimed to examine the effectiveness of flashcard-based instruction in enhancing the vocabulary mastery of seventh-grade students at SMP Negeri 1 Palu. This research employed a quasi-experimental design with two groups: an experimental group of 32 students and a control group of 32 students, selected via simple random sampling. The experimental group received vocabulary instruction using flashcards, while the control group was taught using conventional methods. Data were collected through pre-tests and post-tests focusing on students' mastery of nouns and verbs. The results revealed a significant improvement in vocabulary mastery among students taught with flashcards compared to those taught through conventional instruction. The mean post-test score of the experimental group was 85, which was higher than the control group's mean score of 68. Statistical analysis using SPSS version 27 showed a significance value (Asymp. Sig. 2-tailed) of 0.000, which was lower than the 0.05 significance level. These findings indicate that flashcard-based instruction has a positive and significant effect on students' vocabulary mastery. In conclusion, the study suggests that flashcards are an effective instructional medium for improving students' vocabulary learning, increasing motivation, and supporting retention, particularly within the Merdeka Curriculum's emphasis on contextual and everyday-life learning. Therefore, English teachers are encouraged to integrate flashcards into vocabulary instruction to create more engaging and effective learning environments.

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## 1. INTRODUCTION

Vocabulary is a fundamental aspect of English language proficiency and a critical aspect in developing language skills: Listening, speaking, reading, and writing. Without

mastery of vocabulary, effective communication and expression cannot be achieved in Asmayanti [1] and Wulanjani [2]. Similarly, according to Nation [3], vocabulary acquisition is essential for the successful use of a foreign language and significantly contributes to the creation of coherent spoken and written texts. It means that vocabulary acquisition is indispensable for students to succeed in learning English and to develop their language skills to the fullest. Therefore, vocabulary mastery serves as a foundational element that supports overall language competence and academic achievement.

Despite its importance, the results of preliminary research conducted in September 2024 revealed that most students still struggle to comprehend teachers' explanations, recall previously learned words, and apply vocabulary in meaningful contexts. Conventional teaching methods-primarily teacher-centered lectures, rote memorization, and textbook word lists-tended to make lessons monotonous, resulting in low student engagement and motivation. These conditions indicate that traditional vocabulary instruction has not sufficiently facilitated students' active involvement and long-term retention of vocabulary.

In relation to the issue above, the researchers are interested in implementing flashcard instruction to address the students' challenges. It has long been recognized as a powerful, low-cost visual tool for vocabulary instruction [4]. According to Ariyanto et al. [5], Flashcards are English learning media with illustrated pictures. Teaching vocabulary using flashcards has been proven to be very effective in the traditional classroom [6]. According to Azzahra [7], the student's vocabulary improved greatly with the help of the flashcards. Fatmawati [8] also reported that flashcards can be an alternative medium for teachers to increase students' vocabulary mastery. By combining images and words, flashcards support dual coding, enhance retention through repetition, and create an interactive and enjoyable learning experience. Thus, flashcards provide both cognitive and motivational benefits for vocabulary learning.

In addition, recent research emphasizes that vocabulary learning can be more effective when flashcards are combined with game-based learning. According to Derakhshan [9], students can use language more communicatively through vocabulary games. Donasari [10] reported that flashcard games are a fun approach to encourage language learning. Game-based learning helps students process their vocabulary more easily and interestingly through activities such as matching games, guessing games, and memory contests. These interactive activities promote active learning and reduce students' anxiety in learning new vocabulary.

Several studies have demonstrated that using flashcards significantly improves students' vocabulary. Siliwangi [11] found that flashcards could improve the students' scores. It was proven by the increase in the students' scores. The students were happy and enjoyed the learning process using flashcards. In addition, Zebua et al. [12] reported that flashcards are an effective tool in improving vocabulary comprehension and retention. Flashcard media also reinforced students' confidence in memorizing English vocabulary [13]. Learning activities with flashcards that involve visual presentations and interactive games make students more engaged and motivated. These findings indicate that flashcards not only improve vocabulary outcomes but also positively influence students' learning attitudes.

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However, most studies focus on digital flashcards as a learning tool for vocabulary acquisition. They ignore ways to optimally use flashcards as a simple, low-cost, and adaptable medium in school settings. This condition is particularly relevant for schools with limited technological resources. This gap highlights the need for research on how visual flashcards can be used as a vocabulary-learning tool at SMP Negeri 1 Palu.

Based on the issues and research gaps described above, the researchers are interested in conducting a study to evaluate the effectiveness of flashcards in improving students' vocabulary mastery. This study is expected to provide empirical evidence on the use of flashcards as an alternative instructional medium and offer practical implications for English teachers in junior high schools.

## 2. METHOD

This study utilized a quasi-experimental design, specifically a nonequivalent control group design. The study involved two groups: an experimental group and a control group. Both groups were administered a pre-test and a post-test to measure students' vocabulary mastery before and after the treatment. The use of this design allowed the researchers to compare the effects of the instructional treatment between two groups without full randomization. The experimental class received treatment using flashcards, while the control class was taught using a conventional method. The researchers present the research design proposed by Best et al. [14] as follows:

<i>Experimental</i>	$O^1$	$X$	$O^2$
<i>Control</i>	$O^3$		$O^4$

Where:

$O^1$ and $O^3$	= Pre-test
$X$	= Treatment
$O^2$ and $O^4$	= Post-test

The population of this study comprised all grade seven students at SMP Negeri 1 Palu in the 2024/2025 academic year, totaling 352 students. Simple random sampling was used to select the samples, in which each member of the population had an equal chance of being selected. This technique was used to randomly assign participants to the experimental and control groups via a shuffling process. The sampling technique was chosen to minimize selection bias and ensure population representativeness. The experimental group in this research was the VII Maritim class, while the VII Ramah Anak class served as the control group.

Data in this study were collected through tests as the main research instrument. The test consisted of two types, namely a pre-test and a post-test. The pre-test was administered before the treatment to measure students' initial vocabulary mastery, while the post-test was given after the treatment to assess students' progress. The tests included multiple-choice items, picture-matching tasks, and sentence-making activities. These test formats were designed to comprehensively measure students' vocabulary knowledge, including recognition, understanding, and application of words. The data obtained from both tests were

analyzed using the Statistical Package for the Social Sciences (SPSS) version 27 to determine the effectiveness of using flashcards in improving students' vocabulary mastery.

Table 1. The Scoring System of Each Test Item

No	Kinds of Test	Number of Items	Score	Total Score
1	Multiple Choice	10	1	10
2	Matching the picture	10	1	10
3	Making sentence	5	4	20
	Total	25		40

This scoring system ensured that each aspect of vocabulary mastery was assessed proportionally and objectively.

### 3. RESULTS AND DISCUSSION

After obtaining the test data, the results were analyzed using the Mann-Whitney U test. This statistical test was selected to examine whether there was a significant difference in vocabulary mastery between the experimental and control groups after the treatment was administered.

#### 3.1. Results

Descriptive statistics highlight the results of the pre-test of the experimental and control groups. The experimental and control groups (N = 32) had a pre-test mean score of 66.84 with a standard deviation of 12.376 for the experimental group. Meanwhile, the pre-test for the control group had a mean score of 60.28 and a standard deviation of 12.642. These descriptive statistics provide an overview of students' initial vocabulary mastery prior to the implementation of the instructional treatment.

Table 2. Pre-test Results of Experimental and Control Groups

Group	N	Min	Max	Mean	Std.Dev
Experimental	32	40	88	66.84	12.376
Control	32	25	83	60.28	12.642

Table 2 above shows that the experimental and control groups had relatively similar levels of vocabulary mastery before the intervention. Although the experimental group showed a slightly higher mean score, the difference was not substantial. This similarity strengthens the validity of the study, as the differences found in the post-test can be more confidently attributed to the use of flashcards rather than to initial disparities between the two groups.

Table 3. Post-test results of the Experimental and Control Groups

Group	N	Min	Max	Mean	Std.Dev
Experimental	32	50	100	85.13	13.478
Control	32	50	88	68.59	10.035

The results above reveal the performance of both groups after treatment. The experimental group obtained a score with an average of 85.13 and a standard deviation of 13.478, while the control group obtained a score with an average of 68.59 and a standard

deviation of 10.035. This indicates a substantial improvement in vocabulary mastery among students who received flashcard-based instruction. These findings indicate that the experimental group’s scores were higher than those of the control group. This indicates that the experimental group improved after treatment with flashcards, compared with the control group taught using conventional methods.

Table 4. Test of the Normality

Tests of Normality							
	Class	Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Vocabulary Mastery	Pre Test Control (Conventional Method)	.148	32	.074	.954	32	.182
	Post Test Control (Conventional Method)	.141	32	.104	.950	32	.141
	Pre Test Experimental (Flashcards)	.122	32	.200*	.974	32	.608
	Post Test Experimental (Flashcards)	.303	32	.000	.781	32	.000
*. This is a lower bound of the true significance.							
a. Lilliefors Significance Correction							

The normality test indicates that the distributions in both the experimental and control groups differed between the pre-test and post-test. For the control group, the pre-test Kolmogorov-Smirnov significance value was 0.074, and the Shapiro-Wilk value was 0.182. While the post-test values were 0.104 and 0.141, it can be concluded that the pre-test and post-test data for the control group were normally distributed. In the experimental group, the significance value was 0.200 and 0.608 for the pre-test. Indicating that the pre-test data were normally distributed. Meanwhile, the Post-test shows that the Kolmogorov-Smirnov significance value was 0.000, and the Shapiro-Wilk significance value was 0.000. Because both are below 0.05, the post-test data were not normally distributed. Because the pre-test and post-test in the control group and the pre-test in the experimental group meet the assumption of normality. However, the post-test data in the experimental class did not meet the assumption of normality. Therefore, a non-parametric statistical test, namely the Mann-Whitney U Test, was used to compare the post-test results between the experimental class and the control class so that the analysis remained accurate and reliable.

Table 5. Test of Homogeneity of variance

Test of Homogeneity of Variance						
		Levene Statistic	df1	df2	Sig.	
Vocabulary Mastery	Based on Mean	.000	1	62	.985	
	Based on Median	.037	1	62	.849	
	Based on Median and with adjusted df	.037	1	60.380	.849	
	Based on trimmed mean	.002	1	62	.967	

Table 5 shows that the homogeneity of variances test using Levene's Test at a 0.05 significance level yielded significance values of 0.985 based on mean, 0.849 for based on Median, 0.849 for based on Median with adjusted df, and 0.967 based on trimmed mean. Since all these values are greater than 0.05, it can be concluded that the data have homogeneous variance between the experimental and control groups. However, as shown in the previous normality test, some data, especially the post-test in the experimental class, are not normally distributed. Therefore, further analysis was performed using a non-parametric statistical test, namely the Mann-Whitney test.

Table 6. Mann-Whitney U Test

Test Statistics	
	Standard Score
Mann-Whitney U	154.000
Wilcoxon W	682.000
Z	-4.823
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Class	

The table shows that the Mann-Whitney U value is 154.000, the Z value is -4.823, and the Asymp. Sig. (2-tailed) value is 0.000. Since the significance value is lower than 0.05, it indicates that there is a significant difference between the scores of the experimental group and the control group. It means that using flashcards has a positive, significant effect on students' vocabulary mastery. Students in the experimental class who were taught with flashcards obtained higher post-test scores than those in the control class who were taught with conventional methods. Thus, it can be interpreted that the use of flashcards is effective in improving students' vocabulary mastery, as evidenced by the significant difference in post-test results between the two groups.

### 3.2. Discussion

The findings revealed that students' vocabulary mastery remained relatively low before flashcards were introduced as a learning medium. Both groups had difficulty recognizing word meanings, pronouncing vocabulary correctly, and recalling previously learned words. In addition, students tended to appear passive and unmotivated during learning using conventional methods. Which mostly relied on teacher explanations, memorization tasks, and textbook vocabulary lists. Such teacher-centered instruction limited students' opportunities to engage with vocabulary in meaningful contexts actively. This situation aligns with Novitasari [15]. Students often experience difficulties and feel bored during vocabulary learning. Students often ignore the teacher's explanations because the learning media are not engaging. Therefore, the low level of students' vocabulary mastery prior to the treatment indicates the need for more engaging instructional strategies.

After flashcards were used, students in the experimental group showed significant improvement in vocabulary mastery and motivation to learn. Students became more enthusiastic and engaged, actively participating in class activities. This improvement indicates that flashcards successfully transformed the learning process from passive to active. This aligns with previous research indicating that the use of flashcards in English

learning has been shown to increase students' motivation, help them remember vocabulary, and make the learning process more fun and interactive [16]. Flashcards provide visual stimulation and repeated exposure to words, which helps learners remember vocabulary more effectively. According to Alqahtani [17], visual support helps learners understand the meaning and helps to make the word more memorable. Flashcards work effectively because they allow students to see words, their pictures, and their meanings repeatedly. As a result, students were able to build stronger associations between words and their meanings.

These findings also align with previous studies, which confirm that the use of flashcards has a positive impact on the learning process. Syamsiyah and Ma'rifatulloh [18] found that after using flashcard media, students were more enthusiastic, more active, more focused, and less bored. Similarly, Agung et al. [19] explained that flashcards also make students more active and less prone to boredom when learning English vocabulary. Rahmawati & Utami [20] also reported that flashcards can help teachers to make an interesting teaching methodology. In flashcards, they can stimulate their imagination to develop their ideas and learn new vocabulary [21]. In this study, students in the experimental group showed higher participation, greater enthusiasm, and a stronger willingness to revisit the material than those in the control group. Flashcard activities created a supportive and collaborative classroom environment. This interactive atmosphere contributed to deeper vocabulary processing and better learning outcomes. The learning process made mastering new vocabulary more effective and enjoyable for students.

In addition, game-based learning not only improves motivation but also leads to greater emotional flexibility, including enthusiasm, enjoyment, and self-confidence. These positive emotions help students focus better, be more willing to try new things, and remember vocabulary more easily. Thus, games play an important role in strengthening students' understanding and retention of the material they are learning. According to Rahmah & Suriaman [22], Flashcards, as a form of game-based learning, help students associate words with images and meanings more effectively, making the learning process more engaging and memorable. This finding supports the notion that emotional engagement plays a crucial role in vocabulary retention. This shows that using flashcards in a fun learning environment can effectively support vocabulary mastery.

The classroom environment improved significantly during the implementation of the flashcard-based learning method. Students became more focused and actively participated in each learning session. Flashcards create a supportive and enjoyable environment, helping to reduce students' boredom and making vocabulary learning feel easier and more meaningful. These results show that flashcards are an effective strategy for enriching vocabulary. This method encourages students to learn actively. In addition, it helps them remember new words more quickly. This is supported by Astuti et al. [23]: Flashcards enable students to recall and memorize the words they are learning easily. Flashcards not only facilitate students' learning but also support teachers in their teaching. According to Andriyadi and Irawan [24], flashcards are very practical and can be easily made by teachers. Wulandari [25] reported that flashcards can help the teacher to make an exciting teaching methodology. Overall, flashcards offer an efficient, interactive method that is useful not only for students but also for teachers in the learning process.

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This study shows that using flashcards can effectively increase students' motivation and vocabulary mastery. This low-cost, straightforward card-based activity not only makes students more enthusiastic and confident but also helps them remember vocabulary more effectively. Flashcards are also practical for teachers to create interesting and easy-to-implement lessons. Overall, the findings confirm that flashcard-based instruction is a suitable and effective approach for vocabulary learning in junior high school contexts.

#### 4. CONCLUSION

This study aimed to investigate the effectiveness of flashcards in improving the vocabulary mastery of grade seven students at SMP Negeri 1 Palu. This study employed a quasi-experimental design with both an experimental and a control group. It revealed that there was a significant improvement in students' vocabulary mastery when they were taught using flashcards. The Mann-Whitney U Test (Sig. = 0.000 < 0.05) shows a significant difference between the two groups, as the students in the experimental group achieved higher vocabulary scores after the treatment.

These findings indicate that flashcards are effective in helping students understand, remember, and use new vocabulary. These techniques encourage active participation, independent learning, and a much more enjoyable and meaningful approach to vocabulary development. This study recommends that English teachers integrate flashcard activities into vocabulary instruction to increase students' motivation to learn. Further research could also focus on the effective use of similar visual tools for developing other language skills, such as speaking, reading, and writing.

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