

## Improving Grade VIII Students' Vocabulary Mastery through Flashcards at SMP Negeri 7 Palu

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### ABSTRACT

Students' limited vocabulary mastery remains a challenge in learning English at the junior high school level. This study aims to examine the effectiveness of using flashcards in improving the vocabulary mastery of Grade VIII students at SMP Negeri 7 Palu. This research applied a quasi-experimental design with a non-equivalent control group design. The sample consisted of 58 students, including 29 students in the experimental class (VIII F) and 29 students in the control class (VIII E). Data were collected through pre-test and post-test to measure students' vocabulary mastery before and after the treatment. The results of descriptive statistics showed that the mean score of the experimental group increased from 76.03 in the pre-test to 84.66 in the post-test, while the control group increased from 71.38 to 76.03. The normality test indicated that the data were not normally distributed. Therefore, the Mann–Whitney U test was used to compare the post-test scores between the experimental and control groups. The result showed that the significance value (Asymp. Sig. 2-tailed) was 0.047, which is lower than 0.05. This indicates that there is a significant difference between the experimental and control groups. Based on these findings, it can be concluded that the use of flashcards is effective in improving students' vocabulary mastery. The use of flashcards may also support a more engaging learning process.

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## 1. INTRODUCTION

English has become the primary language of international communication and serves as a bridge for people from different countries to exchange ideas, knowledge, and information. The ability to use English effectively enables individuals to participate in global communication, access scientific resources, and expand academic opportunities. English proficiency also allows learners to interact in various international contexts and obtain information from different sources. Strong English skills provide broader access to academic

resources and global communication [1]. Furthermore, English proficiency supports students in accessing global knowledge and developing communication skills [2].

In learning English, students are expected to master four basic language skills, namely listening, speaking, reading, and writing. These skills are interconnected and supported by several language components such as vocabulary, grammar, and pronunciation. Among these components, vocabulary plays a crucial role because it forms the foundation for understanding and expressing meaning in communication. Vocabulary development is essential for learners to achieve successful communication in English [3]. In addition, insufficient vocabulary knowledge is one of the major obstacles in language learning [4].

Vocabulary refers to the collection of words that individuals know and use to communicate meaningfully. It enables learners to express ideas, understand information, and participate effectively in communication. Without sufficient vocabulary knowledge, students may experience difficulties in understanding texts, expressing opinions, and conveying ideas clearly. Vocabulary mastery plays an important role in improving students' language skills [5]. Vocabulary knowledge contributes significantly to students' language development [6]. Vocabulary learning also includes receptive and productive knowledge. Receptive vocabulary refers to words that learners recognize and understand while listening and reading, whereas productive vocabulary refers to words that learners use accurately in speaking and writing [7]. Vocabulary knowledge supports learners in understanding texts and participating effectively in communication [8].

Previous studies have emphasized the important role of vocabulary mastery in improving students' language performance. Ahmed, Zubair, and Irfan found that vocabulary knowledge significantly predicts students' reading comprehension and writing ability [9]. Vocabulary mastery is also considered an important indicator of literacy development [10]. In addition, Amini and Iravani reported that students who possess broader vocabulary knowledge tend to perform better in language learning activities [11].

Despite its importance, vocabulary learning often becomes a challenge for many students learning English as a foreign language. Students frequently experience difficulties in remembering new words, understanding their meanings, and using them appropriately in communication. In the Indonesian educational context, vocabulary learning is considered essential in developing students' communicative competence within the Merdeka Curriculum [12]. Vocabulary instruction should therefore be contextual and meaningful for students [13]. Vocabulary competence contributes to students' lexical development in English learning [14].

Based on a preliminary classroom observation conducted in November 2025 involving 58 eighth-grade students at SMPN 7 Palu, many students still experienced difficulties in mastering English vocabulary. Students often forgot basic vocabulary, struggled to construct simple sentences, and had difficulty understanding short reading passages. These difficulties were also reflected in the students' low pre-test scores before the treatment was implemented. Limited vocabulary knowledge often affects students' language learning outcomes [15]. Effective learning strategies are needed to help students overcome vocabulary learning difficulties [16].

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One instructional medium that can support vocabulary learning is the use of flashcards. Flashcards are considered an effective tool because they help students remember vocabulary through visual representation and repetition. Flashcards can increase students' engagement with vocabulary learning [17]. Visual learning media can improve students' memory retention [18]. Learning through visual and verbal information can strengthen students' understanding [19]. Flashcards significantly help students remember vocabulary more easily [20]. Visually attractive flashcards created with digital tools such as Canva can improve students' understanding in vocabulary learning [21]. Interactive learning media can support vocabulary development effectively [22]. Visual learning media can enhance students' vocabulary learning outcomes [23]. Engaging learning media can increase students' participation in the learning process [24]. Learning media play an important role in supporting vocabulary acquisition [25]. This study is expected to provide practical contributions for English teachers in selecting effective vocabulary learning media and to help students improve their vocabulary mastery through meaningful learning activities.

Several previous studies have investigated the effectiveness of flashcards in improving students' vocabulary mastery in different educational settings. However, studies examining the use of flashcards within the implementation of the Merdeka Curriculum at SMPN 7 Palu are still limited, particularly among eighth-grade students. Most previous studies focused only on general vocabulary learning without specifically investigating the implementation of flashcards in this context. Therefore, this study aims to investigate whether the use of flashcards significantly improves the vocabulary mastery of eighth-grade students at SMPN 7 Palu. This study hypothesises that students taught using flashcards will achieve better vocabulary mastery than those taught using conventional methods.

## **2. METHOD**

This study applied a quasi-experimental design using a non-equivalent control group design. This design was used because random assignment of participants was not possible, but comparison between groups could still be conducted to examine the effect of the treatment [26]. The study involved two groups: an experimental group taught using flashcards and a control group taught using conventional vocabulary teaching methods. Both groups received a pre-test and a post-test to measure students' vocabulary mastery before and after the treatment.

The population of this study consisted of all eighth-grade students at SMP Negeri 7 Palu in the 2024/2025 academic year, totaling 174 students from six classes. The sample was selected using purposive sampling based on the recommendation of the English teacher and the similarity of students' English ability. Class VIII F, consisting of 29 students, was selected as the experimental group, while Class VIII E, consisting of 29 students, was selected as the control group.

The research instrument was a vocabulary test administered as the pre-test and post-test. The test consisted of 20 items, including completing simple sentences (5 items), true or false word-meaning matching (10 items), and matching pictures with words (5 items). The test measured students' understanding of vocabulary related to nouns and verbs. Each correct answer was scored 1, while incorrect answers were scored 0, with a maximum score of 100.

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The same scoring system and test format were used in both the pre-test and post-test to maintain score comparability. The instrument was validated through consultation with the English teacher and research supervisors to ensure content validity. In addition, the reliability of the instrument was examined using SPSS version 25 to ensure the consistency of the test items.

The data analysis was conducted using SPSS version 25. Descriptive statistics were used to calculate the mean score, minimum score, maximum score, and standard deviation of students' vocabulary performance. The Shapiro–Wilk test was used to examine data normality, while Levene's Test was used to examine homogeneity of variance. Since the data were not normally distributed, the Mann–Whitney U test was used to compare both the pre-test and post-test scores between the experimental and control groups. The pre-test comparison was conducted to identify whether both groups had similar initial ability before the treatment. All statistical tests were conducted at a significance level of 0.05. A significance value lower than 0.05 indicated that there was a significant difference between the groups.

### 3. RESULTS AND DISCUSSION

Results of the research indicate an improvement in students' vocabulary after the use of Flashcards. In this section, the results and discussion are presented comprehensively, supported by data presented in tables to facilitate understanding.

#### 3.1. Results

Descriptive statistical analysis was used to describe students' vocabulary mastery scores in the pre-test and post-test of both the control and experimental groups.

Table 1. Descriptive Statistics Pre-test

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test Control	29	35	100	71.38	18.072
Pre-test Experimental	29	35	100	76.03	18.096
Valid N (listwise)	29				

Based on Table 1, the mean score of the control group was 71.38, while the experimental group obtained a mean score of 76.03. The difference between the two groups was 4.65 points. In addition, the standard deviation values of both groups were relatively similar, indicating that the score distribution in both groups was comparable before the treatment.

Table 2. Descriptive Statistics Posttest

	N	Minimum	Maximum	Mean	Std. Deviation
Posttest Contol	29	35	100	76.03	18.096
Posttest Experimental	29	50	100	84.66	14.573
Valid N (listwise)	29				

Based on Table 2, the mean score of the experimental group was 84.66, while the control group obtained 76.03. The difference between the two groups was 8.63 points, indicating that the experimental group achieved higher vocabulary scores after the treatment. Furthermore, the experimental group showed a smaller standard deviation (14.573)

compared to the control group (18.096), indicating that the scores in the experimental group were more homogeneous.

After conducting descriptive statistical analysis, a normality test was performed to determine whether the data were normally distributed. The Shapiro–Wilk test was used because the sample size was less than 50 students in each group.

Table 3. Tests of Normality

Score	Class	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
	Pre-test Control Class	.159	29	.058	.952	29	.202
	Post-test Control Class	.173	29	.027	.935	29	.074
	Pre-test Experimental Class	.173	29	.027	.935	29	.074
	Postest Experimental Class	.209	29	.002	.887	29	.005

a. Lilliefors Significance Correction

Based on Table 3, the significance value of the post-test experimental class was 0.005, which was lower than 0.05. This indicates that the data were not normally distributed. Therefore, non-parametric statistical analysis was used.

A homogeneity test was also conducted to examine whether the variance of both groups was homogeneous before conducting further analysis.

Table 4. Test Homogeneity of Variance

Score		Levene Statistic	df1	df2	Sig.
	Based on Mean	1.579	1	56	.214
	Based on Median	1.408	1	56	.240
	Based on Median and with adjusted df	1.408	1	55.979	.240
	Based on trimmed mean	1.650	1	56	.204

Based on Table 4, the significance value was 0.214, which was higher than 0.05. This indicates that the variance of the data was homogeneous.

Since the data were not normally distributed, the Mann–Whitney U test was used to compare the pre-test and post-test scores between the control and experimental groups.

Table 5. Test Statistics

	Score
Mann-Whitney U	293.500
Wilcoxon W	728.500
Z	-1.990
Asymp. Sig. (2-tailed)	.047

a. Grouping Variable: Class

Based on Table 5, the significance value (Asymp. Sig. 2-tailed) was 0.047, which was lower than 0.05. This indicates that there was a significant difference between the post-test scores of the control and experimental groups. Since the experimental group obtained a higher mean score than the control group, it can be concluded that the use of flashcards was effective in improving students’ vocabulary mastery.

The hypothesis testing criteria were as follows: if the significance value was lower than 0.05, the alternative hypothesis ( $H_a$ ) was accepted, and the null hypothesis ( $H_0$ ) was rejected. Conversely, if the significance value was higher than 0.05, the null hypothesis ( $H_0$ ) was accepted. Based on the result of the Mann–Whitney U test, the significance value was  $0.047 < 0.05$ . Therefore,  $H_0$  was rejected, and  $H_a$  was accepted, indicating that the use of flashcards significantly improved students' vocabulary mastery.

### 3.2. Discussion

The findings of this study showed that students in the experimental group achieved higher vocabulary scores after learning through flashcards. The post-test mean score of the experimental group (84.66) was higher than the control group (76.03), and the Mann–Whitney U test indicated a significant difference between both groups with a significance value of  $0.047 < 0.05$ . These findings indicate that the use of flashcards was effective in improving students' vocabulary mastery.

The improvement in students' vocabulary mastery may be influenced by several factors related to the characteristics of flashcards. Flashcards combine pictures and words, which help students understand and remember vocabulary more easily through visual association. This finding is supported by the dual coding theory proposed by Allan Paivio, which explains that information presented through verbal and visual forms can improve memory and learning processes. In this study, students learned vocabulary by connecting English words with pictures, making the vocabulary easier to recognize and recall.

In addition, the use of flashcards provided repetition and retrieval practice during classroom activities. Students repeatedly reviewed vocabulary through matching activities, flashcard quizzes, and simple sentence construction. Repetition helps strengthen students' memory retention, while retrieval practice encourages students to actively recall previously learned vocabulary. These activities may have contributed to the improvement of students' vocabulary mastery in the experimental group.

The findings of this study are consistent with previous studies discussed in the introduction. Previous research found that flashcards can improve students' vocabulary achievement because they support vocabulary recognition and memory through visual learning activities. Similar to those studies, the present research also found that students who learned using flashcards obtained better vocabulary scores compared to students who learned through conventional methods.

The experimental group showed better post-test results than the control group. It should also be noted that the experimental group had a slightly higher pre-test mean score before the treatment was conducted. The pre-test mean score of the experimental group was 76.03, while the control group obtained 71.38. This indicates that the experimental group initially had slightly better vocabulary ability. However, the difference between the post-test mean scores became larger after the treatment, suggesting that the use of flashcards contributed to students' vocabulary improvement.

This study also has several limitations. First, the study involved a relatively small sample size consisting of only 58 students from one school, which may limit the generalization of the findings. Second, the treatment duration was limited to four meetings,

so the long-term effect of flashcards on vocabulary retention could not be fully examined. Third, this study did not include a delayed post-test to measure students' long-term vocabulary retention. In addition, classroom differences and teacher-related factors may also have influenced students' learning outcomes during the treatment process.

Despite these limitations, this study provides pedagogical implications for English teachers, especially in teaching vocabulary at the junior high school level. Flashcards can be used as an alternative learning medium to introduce new vocabulary, review previously learned words, conduct vocabulary games, support pair-work activities, and strengthen students' memory through visual learning and repetition. Therefore, the use of flashcards may help teachers create more effective vocabulary learning activities in English classrooms.

#### 4. CONCLUSION

Based on the findings of this study, the use of flashcards was effective in improving the vocabulary mastery of Grade VIII students at SMP Negeri 7 Palu. The experimental group achieved better vocabulary performance than the control group after the treatment. These findings indicate that flashcards helped students recognize, understand, and remember vocabulary more effectively through the use of pictures, words, and repeated practice during learning activities. The findings of this study suggest that flashcards can be used as an alternative vocabulary learning medium to support English teaching, especially for junior high school students.

This study was limited to one school with a relatively small sample size and a short treatment duration. Therefore, future researchers are recommended to involve more schools and participants, apply a longer treatment period, compare printed and digital flashcards, and examine students' vocabulary retention after several weeks to obtain broader findings regarding the effectiveness of flashcards in vocabulary learning.

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