

# The Implementation of Flashcards to Improve Students' Vocabulary Mastery

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## Abstract

One of the most important aspects of learning English is expanding one's vocabulary. However, a lot of students still struggle with vocabulary comprehension and mastery, especially when taught using traditional methods. The purpose of this research is to investigate how flashcards can help students become more proficient in vocabulary. This research used a Classroom Action Research (CAR) design with 27 SMK Medika students in 11<sup>th</sup> grade. The research was carried out over two cycles, each involving planning, action, observation, and reflection. Vocabulary tests (pre-test and post-test), observation, and student questionnaires were used to collect data. The average score improved from 70.26 in the pre-test to 86.7 in Cycle 1 and 98.15 in Cycle 2, showing significant improvements in students' vocabulary mastery. In addition, students demonstrated higher engagement, motivation, and positive attitudes toward the learning process. The use of flashcards helped students understand, master, and use vocabulary more effectively. In conclusion, flashcards are a useful and effective learning tool for enhancing vocabulary mastery in vocational high school students.

**Keywords:** Flashcards; Vocabulary Mastery; Classroom Action Research

## INTRODUCTION

English plays a vital role in vocational education as it provides students with the language abilities required for both academic studies and future careers. In Indonesia, vocational high schools aim to prepare students for workplace communication through English instruction (Susanti et al., 2022). Mastering vocabulary serves as a basic foundation for English proficiency, as it supports the development of speaking, listening, reading, and writing skills (Khan, 2022). When students have a rich vocabulary, they can take part in classroom discussions more actively and understand meanings more effectively (Hasanah et al., 2025). On the other hand, students with limited vocabulary often struggle to follow instructions and share their thoughts, leading to low participation in class (Hardiyanti & Herda, 2023). Ideally, vocational high school students should possess sufficient vocabulary for basic English communication. They need to understand simple instructions, respond appropriately, and use everyday expressions without relying heavily on translation (Khoerunnisa et al., 2024). Furthermore, students at this level are expected to use English vocabulary more independently in real-life situations (Mustika et al., 2025). Unfortunately, research has shown a gap between these expectations and what actually happens in the classroom. Many students still have limited vocabulary and depend too much on their teacher's explanations. These differences highlight significant issues that require pedagogical intervention.

Based on classroom observations and research findings, students' poor vocabulary mastery is often caused by limited exposure to new words and too much dependence on translation during lessons (Rahmawati et al., 2025). Many students find it difficult to understand everyday expressions and basic vocabulary, which harms their ability to communicate (Mustika et al., 2025). In addition, the problem becomes worse when teachers use teacher-based methods and

students learn passively (Susanti et al., 2022). Therefore, there is a pressing need for useful, easily accessible, and efficient learning materials that can enhance students' vocabulary mastery in settings with limited resources.

Using flashcards as a visual learning tool offers a possible solution to this problem. Many researchers consider flashcards effective for vocabulary learning because flashcards help students connect words with their meanings and strengthen memory through pictures and visuals (Widya et al., 2021). Flashcards are also easy to make, inexpensive, and work well in classrooms that do not have much technology (Khan, 2022). Moreover, when teachers use flashcards, students become more active and interact more during lessons (Permani et al., 2024). Based on these positive aspects, this research is designed to analyze how flashcards contribute to better vocabulary mastery, with a particular focus on vocational high school students. This research offers practical insights for teachers in selecting appropriate instructional media to enhance vocabulary learning and supports the development of more effective and contextually relevant English language teaching practices.

In EFL learning, vocabulary mastery is seen as a key component because it enables students to understand and use the language properly. According to Nation (2022), knowing a word involves more than just memorizing it. True vocabulary mastery includes understanding how a word looks, what it means, and how to use it in sentences. Mohammadi et al. (2024), who make a distinction between productive knowledge (using words correctly while speaking or writing) and receptive knowledge (recognizing words when heard or read), lend support to this theory. Similarly, Yaşar & Koçoğlu (2024) emphasize that students need to recall words quickly and accurately. In classroom settings, vocabulary mastery is usually defined through measurable indicators such as students' ability to comprehend, pronounce, spell, and use words appropriately (Gabby et al., 2024). In vocational education, especially in health-related fields, vocabulary tends to be more complex due to its technical, specialized, and often low frequency nature, which demands precise comprehension and usage (Cui et al., 2024; Hongmei & Kaur, 2023). These features make vocabulary mastery a central but challenging dimension of language learning in vocational high schools.

According to Teymouri (2024), the effectiveness of flashcards comes from two learning principles: cognitive learning theory and retrieval practice. Both emphasize that actively recalling information and repeating it multiple times helps strengthen memory. Kizi (2025) explains that flashcards work by pairing two pieces of information together, such as a word and its meaning, so learners can form strong connections between them. According to Mohammadi et al. (2024), whether flashcards are traditional or digital does not matter much. What matters more is how they activate cognitive processes that help students learn. In addition, flashcards enhance learner engagement and interaction by offering visual representations that support comprehension and retention (Rahayu & Rostika, 2025). In low resource educational contexts, traditional flashcards are especially valuable due to their accessibility and ease of use (Hasanah et al., 2025). Taken together, these theoretical foundations position flashcards as a powerful pedagogical tool for developing vocabulary mastery.

Several researchers have tested flashcards in different educational settings. For example, Hatimah (2025) conducted a CAR in a senior high school and reported improvements in both vocabulary scores and student participation. Similarly, Hue & Lan (2025) found that secondary students who used digital flashcards showed better word retention and more positive attitudes. Le & Luong (2023) also reported that flashcard-based techniques increased motivation and confidence among students at a language center.

In addition, Azahra et al. (2024) applied Classroom Action Research at the elementary level and reported that flashcards enhanced both vocabulary achievement and student participation. Simarmata et al. (2025), adopting a quasi-experimental design with control and experimental groups in a vocational high school, showed that students taught with flashcards obtained higher vocabulary scores than those taught using traditional methods. Boroughani et al. (2023) further examined digital flashcards in a university setting and found improvements in vocabulary proficiency and self-regulated learning. Taken together, these studies consistently indicate that flashcards are effective in promoting vocabulary learning across diverse educational levels and research designs.

However, the existing research still has some limitations. Most studies have been conducted in elementary or general secondary schools, leaving vocational high schools largely unexplored. Additionally, many researchers focus only on whether students can remember words (retention), rather than looking at complete vocabulary mastery that includes pronunciation, spelling, and contextual use. Another issue is that many studies use digital flashcards or experimental designs, which may not be practical for schools with limited technology. There are still very few studies that have combined traditional flashcards with Classroom Action Research to solve real problems in vocational classrooms.

Moreover, the majority of the studies were focused overwhelmingly on vocabulary retention rather than in incorporating the mastering of the vocabulary in a holistic approach. To address the research gaps identified, this research proposes to fill several of these through the following novel contributions. In this context, this research will apply flashcards within the context of the vocational high school students' distinct learning features and needs, making the learning process even more meaningful and relevant. Thus, this proposed research has the potential of making concrete theoretical and practical contributions in the field of English vocabulary learning, specifically in the context of the vocational high schools.

Based on the reviewed literature, it can be stated that while flashcards have been empirically demonstrated to be successful in vocabulary learning, context-specific research is still required to address the unique demands of vocational students and to develop a more comprehensive understanding of vocabulary mastery. Therefore, this research provides a contribution to the discipline by evaluating conventional flashcards employed within a Classroom Action Research framework at the vocational high school level. It builds on prior work by focusing on medical terminology, combining process oriented and outcome-based evaluation, and offering feasible, practical solutions for low resource classrooms. Thus, the research contributes theoretically and empirically to the creation of improved vocabulary teaching methods in English as a Foreign Language environments.

## **METHOD**

This research adopts a Classroom Action Research (CAR) approach, which systematically addresses classroom problems via iterative cycles consisting of planning, action, observation, and reflection. By offering actual data on the usage of flashcards in vocational education settings particularly in classrooms with limited resources, this article contributes to the body of knowledge already in existence. The implementation of Classroom Action Research (CAR) offers a methodological framework for tackling practical classroom issues through successive cycles of planning, action, observation, and reflection (Kemmis & McTaggart, 1998 as a cite by Siregar, 2025). CAR highlights reflective practice and ongoing improvement, enabling teachers to assess their instructional strategies and adjust them according to students' needs

(Crawford, 2022). This approach is especially appropriate for examining the effectiveness of instructional media such as flashcards, as it supports a systematic analysis of both learning processes and outcomes in a particular educational setting (Siregar, 2025). Consequently, the integration of vocabulary theory, flashcard-based instruction, and CAR constitutes a coherent conceptual framework for this research.

The researcher used a Classroom Action Research (CAR) design. CAR was selected because it uses repeated cycles of planning, acting, observing, and reflecting to assist teachers in resolving actual classroom issues (Kemmis & McTaggart, 1998 as a cite by Siregar, 2025). The goal was to improve students' vocabulary mastery by using flashcards as a teaching tool. This approach is particularly suitable for classroom-based problem solving, as it enables continuous evaluation and refinement of instructional strategies (Mertler, 2021).

The research took place over two cycles. Each cycle included four steps: planning the lesson, carrying out the action (teaching with flashcards), observing the students, and reflecting on what worked and what needed improvement. To collect data, the researcher gave vocabulary tests (pre-test and post-test), used observation checklists, and distributed questionnaires to students. The vocabulary tests were used to measure students' improvement in vocabulary mastery, while observation checklists were used to examine students' participation and engagement during the learning process. Moreover, questionnaires were utilized to gather data on how students responded to the implementation of flashcards in vocabulary lessons.

The data were analyzed using a combination of quantitative and qualitative techniques. The analysis of quantitative test data involved calculating average scores and comparing pre-test and post-test outcomes per cycle to assess the extent of progress. To analyze the observation data, descriptive statistics were applied by classifying students' levels of engagement. Meanwhile, the questionnaire data were analyzed using percentage to describe students' perceptions. Qualitative data from observations were analyzed descriptively to support and explain the quantitative findings.

## RESULT AND DISCUSSION

### Results

The researcher analyzed data on students' learning outcomes derived from the implementation of flashcards as a tool for vocabulary learning. The research was divided into two stages, Cycle 1 and Cycle 2, which included pre-test and post-test exercises that were used to determine how much the students' vocabulary had improved.

### Cycle I

The implementation of flashcard media was still not achieving the best results. Some students still struggle with vocabulary comprehension and recall, especially with word meaning recognition. Although the learning activities were interactive and encouraged participation, students' vocabulary mastery still required further improvement.

The teacher encouraged students to participate by introducing the use of flashcards at the beginning of the class. A pre-test was administered to measure the students' initial language comprehension before to the action. Throughout the learning process, the researcher observed and documented the students' responses, participation, and performance. The pre-test results are presented as follows:

**Table 1.** Students' Pre-Test Scores

No	Students' code	Score	Category
1	A-1	53	Low

2	A-2	73	Low
3	A-3	73	Low
4	A-4	73	Low
5	A-5	73	Low
6	A-6	73	Low
7	A-7	73	Low
8	A-8	67	Low
9	A-9	73	Low
10	A-10	73	Low
11	A-11	60	Low
12	A-12	80	Good
13	A-13	67	Low
14	A-14	73	Low
15	A-15	73	Low
16	A-16	67	Low
17	A-17	80	Good
18	A-18	67	Low
19	A-19	53	Low
20	A-20	80	Good
21	A-21	60	Low
22	A-22	73	Low
23	A-23	73	Low
24	A-24	80	Good
25	A-25	60	Low
26	A-26	80	Good
27	A-27	67	Low
<b>Total: 1.897</b>		<b>Mean: 70.26</b>	

The pre-test scores were calculated, and the researcher found that the average stood at 70.26, a result categorized as "low". Out of 27 students, only 5 were classified as "good," while the remaining 22 were still in the "low" category. The test was supervised by the English teacher. These results indicated students' vocabulary mastery was still limited and required further improvement. The researcher implemented flashcards as a learning tool to help students improve their vocabulary.

**Table 2.** Students' Post-Test Cycle 1 Scores

No	Students' code	Score	Category
1	A-1	90	Greet
2	A-2	90	Greet
3	A-3	90	Greet
4	A-4	80	Good
5	A-5	90	Greet
6	A-6	80	Good
7	A-7	80	Good
8	A-8	70	Low
9	A-9	90	Greet
10	A-10	80	Good
11	A-11	90	Greet
12	A-12	90	Greet
13	A-13	90	Greet
14	A-14	90	Greet
15	A-15	90	Greet

16	A-16	90	Greet
17	A-17	90	Greet
18	A-18	90	Greet
19	A-19	90	Greet
20	A-20	90	Greet
21	A-21	90	Greet
22	A-22	90	Greet
23	A-23	90	Greet
24	A-24	80	Good
25	A-25	90	Greet
26	A-26	90	Greet
27	A-27	70	Low
<b>Total: 2.340</b>		<b>Mean: 86.7</b>	

After implementing flashcards to master the vocabulary, the students took the post-test in cycle 1. The purpose was to see their progress in understanding and mastering the vocabulary. The total score of the 27 students was 2.340, showing a clear improvement compared to the pre-test score of 1,897. The post-test results from Cycle 1 showed that 2 students were still categorized as "low", 5 as "good", and 20 as "great". This shows that flashcards help students understand and master vocabulary better. The fun and interactive features made them more motivated and active in learning. These positive results in cycle 1 are a good starting point. In the next cycle, the researcher will continue and improve the process to see even better results.

### Cycle 2

In cycle 2, using flashcards media for learning continued and was improved based on reflections from the previous cycle. The results showed that students developed a better understanding of vocabulary. They appeared more confident, engaged actively, and learned the vocabulary more quickly through more directed and fun activities.

**Table 3.** Students' Post-Test Cycle 2 Scores

No	Students' code	Score	Category
1	A-1	100	Excellent
2	A-2	100	Excellent
3	A-3	100	Excellent
4	A-4	100	Excellent
5	A-5	100	Excellent
6	A-6	100	Excellent
7	A-7	100	Excellent
8	A-8	80	Good
9	A-9	100	Excellent
10	A-10	100	Excellent
11	A-11	90	Greet
12	A-12	100	Excellent
13	A-13	100	Excellent
14	A-14	100	Excellent
15	A-15	100	Excellent
16	A-16	100	Excellent
17	A-17	100	Excellent
18	A-18	100	Excellent
19	A-19	100	Excellent
20	A-20	100	Excellent

21	A-21	100	Excellent
22	A-22	100	Excellent
23	A-23	100	Excellent
24	A-24	100	Excellent
25	A-25	100	Excellent
26	A-26	100	Excellent
27	A-27	80	Good
<b>Total: 2.650</b>		<b>Mean: 98.15</b>	

After students finished the second cycle of learning vocabulary with flashcards, the final exam in Cycle 2 was given. The findings found that students' vocabulary mastery had considerably improved. 2 students placed in the "Good" category in this final exam, 1 student placed in the "Great" category while 24 students achieved the "Excellent" category. Compared to the results in Cycle 1, students' performance became more consistent, and their confidence in using English vocabulary improved significantly. This second cycle shows that the continuous and well-structured use of flashcards can produce more effective results. Observation data also supported this finding, as students showed greater motivation, engagement, and enthusiasm during the learning process.

### The Analysis of the Questionnaire

After the second cycle, questionnaires were handed out to students to support the research findings. According to Taherdoost (2022) Questionnaires are essential instruments in research for collecting relevant data, and this research presents a comprehensive guide to designing an effective questionnaire. This questionnaire is designed to gather students' feedback on their experience using flashcards to learn vocabulary. The following summary of the questionnaire results.

**Table 4.** Students' Responses to the Questionnaire

No	Questions	Total Responses
1.	I find it difficult to understand the meaning of the vocabulary through flashcards	
	(1) Strongly Disagree	59.26%
	(2) Disagree	40.74%
	(3) Agree	
	(4) Strongly Agree	
2.	I still forget the meaning of the vocabulary even after using flashcards	
	(1) Strongly Disagree	59.26%
	(2) Disagree	29.63%
	(3) Agree	11.11%
	(4) Strongly Agree	
3.	I have difficulty focusing during flashcard-based learning activities	
	(1) Strongly Disagree	88.89 %
	(2) Disagree	11.11 %

	(3) Agree	
	(4) Strongly Agree	
<b>4.</b>	I feel shy to answer questions by the teacher using flashcards	
	(1) Strongly Disagree	81.48%
	(2) Disagree	14.82%
	(3) Agree	3.70%
	(4) Strongly Agree	
<b>5.</b>	Flashcards do not help me remember the vocabulary at all	
	(1) Strongly Disagree	59.26%
	(2) Disagree	37.04%
	(3) Agree	3.70%
	(4) Strongly Agree	

Based on the questionnaire given to 27 students after using flashcards, most students showed very positive responses toward the implementation of this learning media. Most of the students strongly disagree with negative statements about flashcards. For example, about 59.26% of the students strongly disagree and 40.74% disagree that they found it difficult to understand vocabulary through flashcards. This indicates that flashcards helped students understand the meaning of vocabulary more easily.

In addition, 59.26% of the students strongly disagree and 29.63% disagree that they still forgot the meaning of vocabulary after using flashcards, while only 11.11% agree. This suggests that flashcards were effective in helping students retain vocabulary. Furthermore, 88.89% of the students strongly disagree and 11.11% students disagree that they had difficulty focusing during flashcard-based learning activities, which shows that the use of flashcards was engaging and able to maintain students' attention during the learning process.

The data also revealed that 81.48% of the students strongly disagree and 14.82% disagree, while only 3.70% agree that they felt shy when answering questions using flashcards. This means that flashcards could create a more comfortable and supportive learning environment, encouraging students to participate more actively. Lastly, 59.26% of the students strongly disagree and 37.04% disagree that flashcards did not help them remember vocabulary at all, while only 3.70% agree. In summary, the results suggest that flashcards serve as both an effective and engaging tool for enhancing students' vocabulary mastery. They not only assist students in better understanding and retaining vocabulary but also improve their concentration, self-confidence, and classroom participation.

### **The Analysis of the Observation**

Classroom observations were made during each cycle to assess students' involvement and engagement throughout the learning process in order to support the findings of students' vocabulary improvement. During flashcard-based learning, the observation emphasized on a number of variables, such as students' focus, engagement, responsiveness, and word understanding. This observation aimed to provide additional evidence of how the implementation of flashcards influenced students' behavior and involvement in the classroom. The results of the observation in Cycle 1 and Cycle 2 are presented in the following table:

**Table 5.** The Results of the Observation in Cycle 1 and Cycle 2

No	Aspects	Cycle 1	Category	Cycle 2	Category	Improvement
1	Paying attention to teacher	3	Active	4	Very active	Improved
2	Responding to questions	2	Less active	4	Very active	Improved
3	Participation	3	Active	4	Very active	Improved
4	Identifying vocabulary meaning	2	Less active	4	Very active	Improved
5	Spelling vocabulary	2	Less active	3	Active	Improved
6	Following instruction	3	Active	4	Very active	Improved
7	Staying focused	3	Active	4	Very active	Improved

The comparison between Cycle 1 and Cycle 2 observation results shows a significant improvement in students' participation during the learning process. In Cycle 1, several indicators were still categorized as "less active," particularly in responding to questions, identifying vocabulary meaning, and spelling vocabulary correctly. However, after the implementation improvement in Cycle 2, all indicators showed better results, with most of them reaching the "very active" category. For example, students' ability to respond to the teacher's questions improved from "less active" (score 2) in Cycle 1 to "very active" (score 4) in Cycle 2. Similarly, students' ability to identify the meaning of vocabulary improved from "less active" to "very active." In addition, students' participation, attention, and ability to follow instructions also improved from "active" to "very active." Although spelling ability showed a slightly lower improvement, it still improved from "less active" to "active," indicating better performance. The results show that flashcards used in Cycle 2 were more successful at capturing students' attention. Students grew more attentive, confident, and actively participated in the lessons. The progress seen in every indicator implies that flashcards have the potential to foster a more collaborative and encouraging classroom atmosphere. In summary, the observational data verify that students' involvement in class increased notably following the enhancement of flashcard-based exercises in Cycle 2.

## Discussion

The findings clearly demonstrate that flashcards helped students improve their vocabulary skills. Students' vocabulary performance was still comparatively low at the beginning of the research, before the treatment. There was a noticeable improvement following the first flashcard cycle. Students' results showed consistent improvement throughout both cycles by the end of Cycle 2. This consistent improvement throughout the course of the cycles showed that using flashcards significantly improved students' vocabulary mastery. Additionally, by the end of the second cycle, almost all students reached the "excellent" level.

However, several critical points needed to be considered. First, the steady improvement observed across the cycles might have been partly attributable to a practice effect, meaning that students may have become familiar with the test format or even recalled some of the same questions from previous cycles. In the absence of a control group that did not use flashcards, it could not be stated with complete certainty that the improvement resulted entirely from the flashcards. Second, the fact that the largest increase occurred in Cycle 2 might have indicated that students required an adaptation period before fully benefiting from the method. This suggested that teachers should not have expected instant results when using flashcards. Despite these limitations, the simultaneous improvement in student engagement and motivation strengthened the argument that flashcards did contribute meaningfully to the learning outcomes. Beyond the improvement in test scores, students also showed better engagement and participation during the learning process. Based on the observation results, several indicators improved from "less active" and "active" in Cycle 1 to "active" and "very active" in Cycle 2.

For instance, students became more active in responding to questions, identifying vocabulary meaning, and staying focused during the learning activities. This indicates that flashcards not only enhanced students' vocabulary mastery but also encouraged more active classroom participation.

The questionnaire results further support these findings. Most students gave positive responses toward the use of flashcards. A large proportion of students disagreed with statements indicating difficulty, lack of focus, or low confidence. These findings indicate that flashcards improved students' motivation and confidence by creating a more enjoyable, interesting, and motivating learning environment.–The results of this research are consistent with previous studies. For instance, Hatimah (2025) found that using flashcards in a senior high school improved vocabulary scores and raised classroom involvement. Likewise, Hue and Lan (2025) reported that flashcards helped secondary students retain vocabulary longer and develop more positive attitudes toward English learning. By showing that the benefits of flashcards were both immediate and cumulative over two cycles, this research closed a gap in previous research. This research also connected cognitive improvements with increased motivation and classroom engagement, in contrast to previous research that had just examined test scores. In line with these findings, the current research also shows that flashcards are useful for improving students' motivation, engagement, and confident in learning English in addition to helping them learn vocabulary. By combining visual images, repeated practice, and active recall exercises, flashcards enable students to grasp new words more easily and keep them in their memory longer. Therefore, flashcards can be considered a suitable learning tool, especially in vocational high school contexts where students require meaningful and engaging vocabulary learning experiences.

This research has several of implications. It theoretically supports the dual coding theory, which holds that students learn language more effectively when they combine words and images. Practically, flashcards provide vocational high school teachers with an inexpensive and accessible method of improving exam performance and student engagement. To improve the results, future studies should employ a second observer for classroom activities and incorporate a delayed post-test.

## CONCLUSION

This research finds that flashcards are a useful tool for improving students' vocabulary mastery based on the data. From the beginning of the research until the end, students demonstrated a significant and consistent improvement. Most students also progressed from the “low” category to “excellent,” indicating substantial improvement in vocabulary comprehension and retention. Flashcards improved students' participation and engagement in addition to their academic performance. Students became more engaged, attentive, and confident in the classroom, according to observations, and the findings of the questionnaire showed that students thought learning was easier, enjoyable, and motivating.

These results suggest that flashcards can be a useful and efficient teaching tool, especially in limited-resource vocational high school settings. It indicates that flashcards provide teachers with an easy, inexpensive way to simultaneously increase student engagement and vocabulary learning. To encourage more interactive and meaningful learning, it is suggested that teachers use flashcard-based exercises into vocabulary practice. To further improve vocabulary learning outcomes, future research may examine the use of flashcards in various contexts or combine them with digital media.

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