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Improving Students' Vocabulary Through Paper-mode Wayground: Classroom Action Research

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Abstract:

Vocabulary mastery is an essential component of English language learning because it supports students' ability to communicate and comprehend texts effectively. However, many EFL students still experience difficulties in acquiring and retaining vocabulary due to the use of conventional teaching methods that provide limited engagement. This study aimed to improve students' vocabulary mastery through the implementation of Paper-Mode Wayground, a paper-based adaptation of a gamified learning platform. The study employed Classroom Action Research (CAR) based on the Kemmis and McTaggart model, consisting of planning, acting, observing, and reflecting stages. The participants were 32 tenth-grade students of MAN 2 Kota Kediri in the 2025/2026 academic year. Data were collected through vocabulary tests and classroom observations and analyzed using descriptive quantitative analysis. The findings revealed a significant improvement in students' vocabulary mastery after the implementation of Paper-Mode Wayground. The students' average score increased from 70 in the pre-test to 83 in the post-test, exceeding the minimum passing grade (KKM) of 75. Classroom observations also indicated higher levels of participation, motivation, and engagement during vocabulary learning activities. These findings suggest that Paper-Mode Wayground is an effective and accessible instructional strategy for improving vocabulary mastery, particularly in educational contexts with limited technological resources.

Keywords: Vocabulary Mastery, Gamification, Paper-Mode Wayground, Classroom Action Research, EFL Learners

Introduction

Vocabulary knowledge is widely recognized as a foundational component of second and foreign language proficiency. In the context of English as a Foreign Language (EFL), vocabulary serves as the building block for the development of listening, speaking, reading, and writing skills (Nation, 2013; Schmitt, 2010). Learners with limited vocabulary often struggle to comprehend texts, express ideas fluently, and participate confidently in communicative tasks (Pramadanti & Achmadi, 2025). In Indonesia, where English is taught as a compulsory subject at the senior high school level, vocabulary mastery remains a persistent challenge (Putra, 2021). Many students rely heavily on rote memorization and bilingual word lists, which may support short-term recall but often fail to promote deeper lexical understanding and long-term retention (Alherabi & Aljebreen, 2025). Therefore, innovative and contextually appropriate strategies are needed to enhance vocabulary acquisition among Indonesian senior high school students.

Several previous studies have explored strategies to improve students' vocabulary through interactive and game-based learning. Research by Ye et al. (2024) found that gamified learning platforms such as Kahoot! can significantly increase student motivation and engagement in language learning activities. Similarly, studies using Wayground reported positive effects on students' vocabulary retention and classroom participation because the competitive and interactive elements encourage active learning (Mulia et al., 2026). In addition, other research indicates that game-based learning creates a more enjoyable classroom atmosphere, which helps students remember vocabulary more effectively (Pelangi et al., 2025). Although these studies demonstrate the effectiveness of digital gamification tools, their implementation often depends on stable internet connections and sufficient technological facilities. In many Indonesian classrooms, particularly in schools with limited resources, such technological access is not always available. As a result, teachers need alternative strategies that maintain the motivational aspects of gamified learning while remaining practical for classroom use.

In relation to this issue, preliminary observation conducted in a senior high school classroom revealed that students experienced difficulties in mastering English vocabulary. Many students were unable to recall previously learned words and showed low participation during vocabulary learning activities (Fikriyyah & Rabbianty, 2026). The teaching process tended to rely on conventional methods such as memorizing word lists and translating vocabulary, which made the learning process less engaging for students. To address this problem, a more interactive learning strategy is needed to improve students' vocabulary mastery. One potential strategy is the use of Paper-Mode Wayground, an adaptation of the interactive learning platform Wayground that allows teachers to apply gamified quiz activities in a paper-based format. Through elements such as point systems, timed questions, and collaborative competition, this approach is expected to create a more engaging vocabulary learning environment.

Therefore, this study was conducted using the Classroom Action Research (CAR) methodology to improve students' vocabulary mastery through the implementation of Paper-Mode Wayground. Classroom Action Research is a reflective process carried out by teachers to solve classroom problems and enhance the quality of teaching and learning through systematic cycles of planning, action, observation, and reflection (Ervina et al., 2025). In this study, the researcher implemented Paper-Mode Wayground as an instructional strategy in a Classroom Action Research cycle to observe its impact on students' vocabulary learning. The findings of this research are expected to provide practical insights for English teachers in implementing engaging and accessible vocabulary teaching strategies, particularly in contexts with limited technological resources. In addition, the study contributes to the development of innovative classroom

practices that promote active student participation and improve vocabulary learning outcomes in Indonesian senior high schools.

Research Methods

Research Design

This study employed Classroom Action Research (CAR) as the research design. Classroom Action Research is a reflective and systematic inquiry conducted by teachers or researchers in the classroom to improve the quality of teaching and learning practices. CAR is commonly used to solve practical problems encountered during the learning process and to enhance students' learning outcomes through continuous improvement of instructional strategies (Aldiansya & Mansour, 2025). According to recent studies, Classroom Action Research allows educators to evaluate the effectiveness of instructional interventions and modify teaching practices through iterative cycles of implementation and reflection (Ningrum et al., 2024).

The model of Classroom Action Research applied in this study follows the spiral model proposed by Kemmis and McTaggart, which consists of four interconnected stages: planning, acting, observing, and reflecting. These stages are implemented repeatedly in cycles to achieve the desired improvement in students' learning outcomes. In the planning stage, the researcher prepares instructional materials and strategies to address the identified classroom problem. In the acting stage, the prepared strategy is implemented in the teaching and learning process. The observing stage involves monitoring and recording students' responses and classroom interactions during the implementation of the action. Finally, the reflecting stage is conducted to evaluate the results of the action and determine whether further improvement is necessary (Kemmis & McTaggart, 1988). This research adopted the CAR approach because it allows the researcher to directly implement and evaluate the effectiveness of Paper-Mode Wayground as an instructional strategy to improve students' vocabulary mastery.

Subject of the Study

The subjects of this study were students of MAN 2 Kota Kediri. The research was conducted in the tenth-grade class during the academic year 2025/2026. The class consisted of 32 students, including 14 male students and 18 female students. The class was selected as the research subject based on preliminary observation conducted by the researcher in collaboration with the English teacher.

The preliminary observation revealed that many students had difficulties in mastering English vocabulary. Students often struggled to understand the meaning of unfamiliar words and showed limited participation in vocabulary learning activities. These difficulties affected their ability to comprehend English texts and express ideas during classroom activities. Therefore, an innovative and engaging learning strategy was needed to improve students' vocabulary mastery.

Action Research Procedures

This Classroom Action Research was conducted in one cycle, and the cycle consisted of four stages: planning, acting, observing, and reflecting. Each cycle was implemented in two meetings.

In the planning stage, the researcher prepared the lesson plans, learning materials, Paper-Mode Wayground activities, vocabulary tests, and observation sheets. The instructional design was developed to create an interactive vocabulary learning environment.

In the acting stage, the researcher implemented the learning activities based on the prepared lesson plan. The teaching process applied Paper-Mode Wayground as the

instructional strategy to improve students' vocabulary mastery. Students participated in paper-based quiz activities that incorporated elements of gamified learning such as competition, scoring systems, and time-limited questions.

In the observing stage, the researcher observed the teaching and learning process. The observation focused on students' participation, engagement, and responses during the vocabulary learning activities. The data were recorded using an observation sheet.

In the reflecting stage, the researcher analyzed the results of the observation and vocabulary tests to evaluate the effectiveness of the implemented strategy. The results of the reflection were used to determine whether the action should be continued or improved in the next cycle.

Research Instruments

The instruments used in this research were vocabulary tests and observation sheets. The vocabulary tests were used to measure students' vocabulary mastery before and after the implementation of the action. Meanwhile, the observation sheets were used to record students' activities, participation, and engagement during the teaching and learning process.

Data Analysis

The data obtained from the research were analyzed using descriptive quantitative analysis. Students' test scores were calculated to determine the improvement in vocabulary mastery after the implementation of Paper-Mode Wayground.

The success of the research was determined based on the criteria of success. The action was considered successful if at least 75% of the students achieved the minimum passing grade (KKM) of 75 in the vocabulary test. If the criteria were not achieved in the first cycle, the researcher continued the action in the next cycle with improvements based on the reflection results.

Results and Discussion

Findings

The researcher made some first observations before employing Paper-Mode Wayground for Cycle I, in order to comprehend the classroom environment and the students' interactions during the session, the researcher made first observations. The researcher also performed a pre-assessment to determine the students' cognitive proficiency in language acquisition. Table 1 below shows the pre-assessment results.

Table 1. Students' Pre-test Score

No	Name	Pre-test	Status
1	S-01	68	Incomplete
2	S-02	74	Incomplete
3	S-03	62	Incomplete
4	S-04	80	Complete
5	S-05	73	Incomplete
6	S-06	69	Incomplete
7	S-07	85	Complete
8	S-08	60	Incomplete
9	S-09	77	Complete
10	S-10	71	Incomplete
11	S-11	64	Incomplete
12	S-12	58	Incomplete
13	S-13	82	Complete

14	S-14	70	Incomplete
15	S-15	55	Incomplete
16	S-16	87	Complete
17	S-17	66	Incomplete
18	S-18	90	Complete
19	S-19	72	Incomplete
20	S-20	75	Complete
21	S-21	65	Incomplete
22	S-22	84	Complete
23	S-23	73	Incomplete
24	S-24	63	Incomplete
25	S-25	78	Complete
26	S-26	67	Incomplete
27	S-27	76	Complete
28	S-28	72	Incomplete
29	S-29	89	Complete
30	S-30	70	Incomplete
31	S-31	81	Complete
32	S-32	74	Incomplete

Based on the preliminary observation and pre-assessment, the result showed that the students' vocabulary towards the material taught by the researcher was considered below the minimum score. It showed that the students' average score learning vocabulary is 70. In addition, based on the Criteria of Learning Objective Achievement (KKM), students were required to minimally achieve 75 score. Further, the preliminary data would be a base to investigate students' improvement and vocabulary mastery in the Cycle I.

Implementation of Cycle I

The researcher conducted the cycle I involving planning, action and observing, and reflecting.

Planning

In planning section, the researcher prepares and develops lesson plan, learning material and sets the assessment criteria. Moreover, in this stage the researcher developed and printed the Paper-Mode Wayground before doing the action.

Action and Observing

In these stages, the researcher played important role as the teacher and observer. These stages were aimed at implementing the designed media in the teaching-learning process. Further, the teacher showed and explained the lesson and several lists of vocabularies to learn. The teacher provided the students Paper-Mode Wayground, then the students should rotate the Paper-Mode to answer each question provided by the teachers. In addition, during the action stage, the researcher also observed the implementation of media used and how the media helps students to improve their vocabulary mastery. The students' vocabulary score was presented in Table 2.

Table 2. Students' Pre-test and Post-test Score

No	Name	Pre-test	Post-test	Status
1	S-01	68	80	Complete
2	S-02	74	86	Complete

3	S-03	62	74	Incomplete
4	S-04	80	92	Complete
5	S-05	73	84	Complete
6	S-06	69	81	Complete
7	S-07	85	94	Complete
8	S-08	60	72	Incomplete
9	S-09	77	88	Complete
10	S-10	71	82	Complete
11	S-11	64	76	Complete
12	S-12	58	70	Incomplete
13	S-13	82	92	Complete
14	S-14	70	81	Complete
15	S-15	55	69	Incomplete
16	S-16	87	95	Complete
17	S-17	66	78	Complete
18	S-18	90	98	Complete
19	S-19	72	83	Complete
20	S-20	75	85	Complete
21	S-21	65	77	Complete
22	S-22	84	93	Complete
23	S-23	73	84	Complete
24	S-24	63	76	Complete
25	S-25	78	89	Complete
26	S-26	67	79	Complete
27	S-27	76	87	Complete
28	S-28	72	83	Complete
29	S-29	89	97	Complete
30	S-30	70	81	Complete
31	S-31	81	91	Complete
32	S-32	74	86	Complete

Figure 2 demonstrated significant improvements in students' vocabulary mastery. Additionally, the students used Paper-Mode Wayground to actively participate in and learn vocabulary. They had a strong motivation to use Paper-Mode Wayground to learn language. Students' vocabulary mastery improved as a result of using this entertaining and interactive media. It could be seen from the result of students' post-test average score.

Based on the students' average score obtained from the post-test, the students average score in learning vocabulary was 83. Twenty-eight out of 32 students (87.5%) achieved the KKM score of 75 in the post-test. This exceeded the success criterion that required at least 75% of students to achieve the minimum passing grade. It was considered that using Paper-Mode Wayground improved the students' vocabulary mastery. Further, the students were actively participated, enjoyed, and engaged with the teaching-learning process through the use of Paper-Mode Wayground.

Reflecting

This reflection stage demanded the researcher to assess the result of action and observation stage and made a conclusion about the implementation of Cycle I. During the implementation of Cycle I, the researcher found that there is an improvement of students'

vocabulary mastery. It was obtained from the post-assessment conducted by the researcher. In addition, the students were responsively enjoyed and engaged with the use of Paper-Mode Wayground as the learning media. It is clearly seen that providing students with game-based learning media promoted the students' improvement and performance during the class. Zhao (2019) stated, that Quizziz is an educational game based-software taking interactive activities into the classroom and provide students with enjoyable learning experience.

Based on the post-test results, the students' average score reached 83, exceeding the KKM of 75. Furthermore, more than 75% of the students achieved the minimum passing grade. Therefore, the success criteria of the study were fulfilled in Cycle I, and no further cycle was required. Table 3 shows clearer presentation of comparison between pre-test and post-test.

Table 3. Comparison of Pre-test and Post-test

Assessment	Mean Score	Students Passing KKM	Percentage
Pre-test	70	12	37.5%
Post-test	83	28	87.5%

Analysis

The findings of this study indicate that the implementation of Paper-Mode Wayground successfully improved students' vocabulary mastery. The students' average score increased from 70 in the pre-test to 83 in the post-test, exceeding the minimum passing grade (KKM) of 75. Furthermore, 87.5% of the students achieved the KKM after the implementation of Paper-Mode Wayground, exceeding the predetermined success criterion of 75%. In addition to the improvement in vocabulary achievement, classroom observations showed that students became more active, enthusiastic, and engaged during the learning process. These findings suggest that the incorporation of gamification elements into vocabulary instruction can positively influence both cognitive and affective aspects of learning. Figure 1 shows clearer presentation of students' vocabulary score improvement.



Figure 1. Student's Vocabulary score Improvement

The improvement in students' vocabulary mastery can be explained through the gamified features embedded in Paper-Mode Wayground, such as competition, scoring systems, time-limited tasks, and collaborative participation. These elements encourage

students to repeatedly interact with target vocabulary while maintaining their motivation throughout the learning activities. Previous research has shown that gamified learning environments promote active engagement and increase learners' willingness to participate in language-learning tasks. A recent study by Ye, Yahaya, and Luo (2024) reported that the use of Kahoot! significantly enhanced students' motivation and engagement in learning activities, which subsequently supported better learning outcomes. Similarly, Burhan et al. (2026) found that gamified vocabulary instruction using Kahoot and Wayground improved both vocabulary retention and student engagement among EFL learners.

The results of the present study are also consistent with recent research on game-based vocabulary learning. Pelangi et al. (2025) found that the use of Wordwall improved students' vocabulary mastery because learners experienced a more enjoyable and interactive learning atmosphere. Likewise, Sinaga et al. (2025) reported that students who learned vocabulary through Wordwall achieved significantly higher vocabulary scores than those who received conventional instruction. These studies support the argument that game-based learning facilitates vocabulary acquisition by providing repeated exposure to target words and creating meaningful learning experiences.

An important contribution of the present study is that it demonstrates the effectiveness of gamification even without digital devices or internet access. Most previous studies focused on technology-based platforms such as Kahoot!, Wayground, and Wordwall, which require adequate technological infrastructure (Suwarni et al., 2023). However, the implementation of Paper-Mode Wayground shows that the motivational principles of gamification can be adapted into a paper-based format while still producing positive learning outcomes (Saputra et al., 2026). This finding is particularly relevant for schools with limited access to technology, where teachers may face challenges in implementing digital learning tools. The success of Paper-Mode Wayground suggests that the effectiveness of gamification lies not only in the technology itself but also in the incorporation of game elements that stimulate participation, challenge, and enjoyment during learning.

Furthermore, the findings support recent reviews emphasizing that gamified learning enhances vocabulary acquisition through repeated practice, immediate feedback, reward systems, and increased learner motivation. A systematic review conducted by Chowdhury et al. (2024) concluded that gamified platforms consistently contribute to vocabulary development because they create interactive learning experiences that encourage students to engage actively with language content. Although Paper-Mode Wayground does not provide digital feedback, the scoring system and classroom interaction appeared to function similarly by motivating students to complete vocabulary tasks and monitor their performance.

The increased classroom participation observed in this study may also be explained by the social and collaborative aspects of the activity. During the implementation, students were required to interact with peers, discuss answers, and participate in friendly competition. Such interactions likely reduced learning anxiety and created a supportive environment for vocabulary practice. Recent research has highlighted that learner engagement is one of the strongest predictors of successful vocabulary acquisition in game-based learning environments because students become emotionally invested in the learning process rather than merely memorizing word lists (Putra, 2021).

Overall, the findings demonstrate that Paper-Mode Wayground is an effective instructional strategy for improving students' vocabulary mastery. The study extends previous research on gamified vocabulary learning by showing that the benefits of

gamification can be maintained in low-technology contexts. Therefore, Paper-Mode Wayground may serve as a practical and accessible alternative for English teachers seeking to implement engaging vocabulary instruction in classrooms with limited technological resources.

Conclusion

This study concludes that the implementation of Paper-Mode Wayground effectively improved students' vocabulary mastery and classroom engagement. The findings showed that students' average vocabulary score increased from 70 in the pre-test to 83 in the post-test, indicating an improvement of 13 points and surpassing the minimum passing grade (KKM) of 75. In addition to the improvement in learning outcomes, students demonstrated greater participation, enthusiasm, and motivation during vocabulary learning activities. These results indicate that integrating gamification elements such as competition, scoring systems, and collaborative activities into a paper-based format can create a more engaging learning environment and support vocabulary acquisition among EFL learners.

The study also demonstrates that gamified learning does not necessarily require digital technology to be effective. Therefore, Paper-Mode Wayground can serve as a practical alternative for teachers working in classrooms with limited access to technological resources. Future studies are recommended to involve larger samples, longer implementation periods, and different educational levels to examine the long-term effects of Paper-Mode Wayground on vocabulary retention. Researchers may also compare its effectiveness with digital gamification platforms such as Wayground, Kahoot!, or Wordwall to gain deeper insights into the role of technology in gamified vocabulary learning.

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