

Implementation of Word Wall Web in Language Learning: How Does It Impact Students' Vocabulary Mastery?

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Abstract

This study aims to enhance students' vocabulary mastery by proposing the Word Wall Web as a learning medium. The research employed a quantitative method with a quasi-experimental design, incorporating pre-test and post-test evaluations. The participants consisted of 63 students, divided into two groups: a control class (n=32) and an experimental class (n=31). Students' understanding of pronouns, nouns, adjectives, and verbs was evaluated through 20 multiple-choice questions, covering various formats such as synonyms, antonyms, fill-in-the-blank, word substitution, and translation. The control class recorded an average pre-test score of 66.14, which increased to 72.26 in the post-test. In contrast, the experimental class exhibited a more substantial improvement, with an average pre-test score of 64.38, rising to 78.22 in the post-test. Statistical analysis of the post-test mean difference between the experimental and control groups yielded a p-value of 0.003, which is less than the significance level of 0.05, indicating a statistically significant difference at the 95% confidence level. Students in the experimental class who utilized the Word Wall Web demonstrated greater interest in learning, active participation, and improved vocabulary mastery compared to those in the control class. These results underscore the effectiveness of the Word Wall Web as a learning medium for enhancing students' vocabulary mastery.

Keywords: Vocabulary mastery, Learning media, Word wall web

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1. Introduction

Vocabulary mastery is a key dimension in assessing students' language proficiency (Berne & Blachowicz, 2008; Maskor et al., 2016). It encompasses the skills of reading, writing, listening, and speaking (Hayati & Shahlaee, 2011; Noor et al., 2016). In language learning, vocabulary plays a crucial role, especially in improving English comprehension for EFL (English as a Foreign Language) students. Armelia et al. (2024) highlight that vocabulary is a core language proficiency indicator. Similarly, Labibah (2023) asserts that vocabulary mastery forms the backbone of successful language acquisition. However, for EFL learners, mastering vocabulary often presents significant challenges (Sahrin & Hasan, 2019). Many students struggle with remembering new words, understanding their contextual meanings, and using them correctly in communication. Traditional vocabulary teaching methods, such as rote memorization of word lists, frequently fail to engage students and do not promote long-term retention (Gulzha & Hanifa, 2024). This lack of engagement contributes to low motivation and limited improvement in vocabulary mastery (Steffe & Ulrich, 2020).

In the 21st-century educational context, integrating technology into language learning has become increasingly important (MacCallum & Parsons, 2022). Innovative tools and platforms

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allow educators to create engaging, interactive, and meaningful learning experiences (Ivan & Maat, 2024). One such tool is the Word Wall Web, a web-based application that facilitates vocabulary learning through gamification and interactive activities (Hidayaty et al., 2022). Word Wall Web allows teachers to design games, quizzes, and puzzles tailored to students' specific needs, making the learning process more enjoyable and effective (Pramudita & Sunarso, 2024).

According to Umar et al. (2023), the Word Wall Web serves as a versatile learning medium that can be used as a teaching resource, learning aid, and assessment tool. Aidah and Nurafni (2022) emphasize its multifunctionality, highlighting that it is accessible through web browsers and usable for individual and collaborative tasks both in the classroom and at home. Furthermore, Savira and Gunawan (2022) note that Word Wall Web incorporates elements of digital gamification, which not only entertain students but also stimulate cognitive abilities, critical thinking, and problem-solving skills. This aligns with findings by Az Zahrah and Anwar (2023), who reported that students using Word Wall Web demonstrated higher engagement and better vocabulary retention compared to those taught with conventional methods.

The gamification aspect of Word Wall Web transforms the learning process into an interactive experience (Fakhrudin et al., 2021). With this technology, students can participate in activities such as matching words with their definitions, filling in blanks, and solving word puzzles (Fatimah, 2020). These features help reduce the monotony of vocabulary learning, making it more engaging for students. Additionally, the visual and interactive components of Word Wall Web facilitate better recognition and understanding of new words. Misrawati et al. (2020) support this view, stating that visual aids significantly enhance vocabulary acquisition. Despite its potential benefits, the adoption of technology-based learning tools in language education often encounters challenges (Pradini & Adnyayanti, 2022). Teachers may lack the necessary digital literacy skills to implement these tools effectively, and some students may face difficulties accessing such resources due to limited technological infrastructure (Nurammida et al., 2024). Therefore, it is essential to explore the opportunities and challenges associated with using the Word Wall Web as a medium for vocabulary instruction (Oviliani & Susanto, 2023).

Initial observations at MTs DDI Palirang revealed several issues faced by students in improving their vocabulary. These include a lack of active use of English vocabulary, difficulties in memorizing words correctly, and a tendency to memorize words individually without understanding their meanings. Additionally, some students found memorization challenging, while others were reluctant to participate in learning activities. Research on the integration of the Word Wall Web in language learning is highly relevant given the increasing emphasis on digital education (Pradini & Adnyayanti, 2022). Advances in technology have accelerated the shift toward online and blended learning, highlighting the need for adaptive and engaging educational tools. Word Wall Web offers a promising solution to meet these needs by combining the accessibility of online platforms with the motivational benefits of gamified learning. By providing a platform that accommodates diverse learning preferences and needs, Word Wall Web has the potential to transform vocabulary instruction and support students in achieving better language proficiency (Umar et al., 2023).

Educational activities aimed at improving vocabulary skills should include approaches that are interactive, contextual, and centered on students (Berne & Blachowicz, 2008). Methods like project-based learning, utilizing visual aids, and integrating technology can support students in understanding, retaining, and applying vocabulary more effectively. For example, gamification tools such as Word Wall Web allow learners to acquire vocabulary through engaging and challenging activities, including quizzes, puzzles, and word-matching games. Moreover, contextual learning strategies, such as reading relevant stories or articles, enhance students'

ability to grasp how words are applied in different contexts. By combining these techniques, learners not only build their vocabulary knowledge but also cultivate critical and creative thinking skills to apply new words confidently in everyday interactions (Suri et al., 2022).

Based on the insights above, researchers see a great opportunity to implement community service initiatives at MTs DDI Palirang aimed at improving students' English skills and enhancing their vocabulary knowledge through Word Wall as a learning medium. This study aims to analyze the impact of the Word Wall Web on students' vocabulary mastery. By using Word Wall, students are expected to comprehend more English vocabulary without relying heavily on teacher-provided definitions or dictionaries. The findings of this study are anticipated to contribute to the growing body of literature on technology-assisted language learning.

2. Method

This study used a quasi-experimental methodology and was quantitative in nature. The purpose of this study is to find out how well Word Wall Web works as a media learning website and whether it has an impact on students' vocabulary acquisition. This research used experimental as the research design. Experimental design, also known as group comparison studies, is a procedure in which research determines whether an activity make a difference in result for participants. This design divided group into the experimental class and the control class. In experimental class, the class got treatment, while in the control class the treatment was not received. The research was conducted in Pinrang Regency, South Sulawesi, specifically at MTs DDI Palirang, and the researcher carried out the study for more than one month, including data analysis. The research sample consisted of 63 students from two classes: the first group with 32 students as the control group and the second group with 31 students as the experimental group.

A test that was split into two sections according to the time it was administered-a pre-test and a post-test-was the instrument utilized in this study. Learners' comprehension of pronouns, nouns, adjectives, and verbs was tested with 20 multiple-choice questions. The test included a variety of question kinds, including as synonyms, antonyms, fill-in-the-blank, word replacement, and translation. In this study, the data analysis method would be the t-test, normality, and homogeneity statistical analyses. These statistical analyses are conducted in phases, beginning with the data generated in the normality test and proceeding with the homogeneity test and, lastly, the t-test, to illustrate the differences between the pretest and post-test results for each group-control and experiment class. It was calculated using software known as SPSS 26.

3. Results

In this section, the researcher employed a web-based word wall to enhance the vocabulary skills of eighth-grade students at MTs DDI Palirang. In the study conducted with grade VIII students, the researcher successfully gathered pre-test and post-test scores for both the experimental and control class. The pre-test and post-test were used by the researcher as tools answer the formulated problems and hypothesis.

Table 1. Results of Pre-test and Post-test Descriptive Data Analysis

Group	Mean pretest	Mean Post-test
Experiment	64.38 ±7.96	78.22 ±7.66
Control	66.14 ±7.23	72.26 ±7.82

Note: first row is average, second row is standard deviation

The vocabulary mastery skills of students in the experimental class are presented in Table XX

above, which includes the mean score and standard deviation. The posttest vocabulary mastery skills of the experimental group show a mean score of 78.22 and a standard deviation of 7.66, while the pretest vocabulary mastery skills of the experimental group have a mean score of 64.38 and a standard deviation of 7.96.

The table also presents the mean scores and standard deviations for the vocabulary mastery skills of students in the control group (Control-Pretest and Control-Posttest). Based on the table, the vocabulary mastery skills of students in the control group during the posttest reached a mean score of 72.26 with a standard deviation of 7.82, whereas their pretest vocabulary mastery skills had a mean score of 66.14 and a standard deviation of 7.23.

Table 2. Normality and Homogeneity Test Results of Vocabulary Mastery Pretest Data

Group	Sig. (Shapiro-Wilk)	Sig. (Levene statistic)
Experiment	0.04	0.707
Control	0.14	

Table 3. The results of the Mann-Whitney U test

Mann-Whitney U	Wilcoxon W	Z	P-value
429.00	925.00	-0.945	0.344

The results of the Mann-Whitney U test indicate that there is no significant difference between the average pretest vocabulary mastery scores of students in the control and experimental classes. This is evidenced by a P-value of 0.344, which exceeds the significance level of 0.05. Consequently, the null hypothesis fails to be rejected, indicating that the students' vocabulary mastery at the pretest stage is relatively balanced between the two classes. The Mann-Whitney U value of 429.00 and the Z value of -0.945 further support this finding, showing that the score distributions in both groups are not significantly different. These results confirm that, prior to the intervention, both groups started from relatively similar conditions, ensuring that any subsequent differences in outcomes can be more validly attributed to the intervention applied to the experimental class. This finding strengthens the study's validity, particularly in maintaining equal initial conditions between the control and experimental groups.

Table 4. Normality and Homogeneity Test Results of Vocabulary Mastery Post-test Data

Group	Sig. (Shapiro-Wilk)	Sig. (Levene statistic)
Experiment	0.07	0.97
Control	0.10	

Table 5. Independent Sample Test on Post-test

	t	df	p-value	Mean difference
t-test for equality of means	3.05	61	0.00	5.96

The normality test results using the Shapiro-Wilk test indicate that the post-test data in both groups, namely the experimental group (p-value = 0.07) and the control group (p-value = 0.10), are normally distributed because the significance values for both groups are greater than the 0.05 significance level. This means that the null hypothesis, which states that the data are normally distributed, fails to be rejected. Additionally, the results of the homogeneity of variances test using Levene's Test show a Sig. = 0.97, which is also greater than 0.05. Thus, the null hypothesis

in the homogeneity test fails to be rejected, indicating that the variances between the two groups are homogeneous.

Since the assumptions of normality and homogeneity have been met, the statistical analysis to test the mean difference between the two groups can proceed with the independent t-test. This test is used to determine whether there is a statistically significant difference in the average post-test vocabulary mastery scores between the experimental and control groups. With both assumptions satisfied, the analysis results can be considered reliable and statistically valid.

The t-test results indicate a statistically significant difference between the means of the two groups. This is evidenced by the t-value of 3.05 and the p-value of 0.00, which is smaller than the significance level of 0.05. Therefore, the null hypothesis is rejected, meaning that the difference in means between the two groups is not due to chance but has statistical significance. Additionally, the Mean Difference of 5.96 indicates that the mean of one group is 5.96 points higher than the other group. With a degree of freedom (df) of 61, these results suggest that the treatment or variable differentiating the two groups has a significant effect on their mean outcomes. In conclusion, the difference in means between the two groups can be attributed to the intervention or conditions that distinguish them, supporting the validity of the independent variable's effect on the dependent variable.

4. Discussion

This research aims to find out whether the use of a web word wall can improve students' mastery in the eighth grade at MTs DDI Palirang. To achieve this objective, the researcher used a vocabulary test as the research instrument, comprising a pre-test and a post-test. Between these tests, the researcher used the web word wall during four class sessions, with one session each dedicated to the pre-test and post-test. Thus, the total number of sessions for this research was six. The population consisted of eight-grade students at MTs DDI Palirang, totaling 63 students across two classes. In the pre-test section, the researcher conducted one meeting consisting of 20 participants. Students are given 20 questions in the form of multiple choices. After giving a pre-test to students, researcher provided treatment to students by using a word wall web to increase students' vocabulary. In the final part, the researcher conducted a post-test consisting of 20 numbers. Students are given 20 questions containing clues whose answers are written in a crossword puzzle. The instructions and answers from this post-test are different from the pre-test.

The experimental class experienced better vocabulary growth compared to the control class after the experimental class received treatment. Through the various games provided, Word wall can make English learning more fun and interactive. Students can be actively involved in challenging activities. Some of the games offered by Word wall require critical thinking and strategy to complete. This can help students develop their critical thinking skills. Using a word wall is a teaching and learning method that can help students increase their vocabulary. By using the word wall web, students directly practice vocabulary, students also easily memorize vocabulary. Following the completion of the post-test and therapy by the researcher. The experimental class performed better, according to the average post-test scores of the two courses.

Naturally, the usage of the term "wall media" itself is inextricably linked to this. The results of the study showed that students' vocabulary mastery abilities were significantly impacted by word wall media. With a post-test average score of 78.22, the experimental class outperformed the control group, which scored 72.26. It was discovered that kids' vocabulary mastery abilities were significantly impacted by Word wall media. Researcher also divided them into five groups

to play games. So, this makes students enthusiastic. This perspective shows that students are motivated to try to win every game, indicating that using a web word wall can make learning vocabulary in English more interesting for students. They also enjoy collaborating with their friends in group activities. In this case, they are motivated to participate actively. By implementing this game, researchers hope that students would always remember the vocabulary that has been taught and that the lesson would be fun (Berne & Blachowicz, 2008).

Using the interactive learning media Word wall can increase students' vocabulary in English (Fatimah, 2020). This media can help students understand vocabulary without always using a dictionary. Here are some of the benefits of using Word wall to increase students' vocabulary: Increasing students' involvement, improving learning outcomes, helping students remember vocabulary, encouraging students to be more active, and developing students' motivation in learning language (Labibah, 2023). There is a difference between the experimental class and the control class, in the experimental class, the researcher used nouns, pronouns, adverbs, verbs, synonyms, and antonyms, while in the control class, the researcher used the English textbook that students use at school.

Mastering vocabulary is essential in developing overall language proficiency (Fatimah, 2020). A rich vocabulary enables students to comprehend various forms of texts more effectively, including academic, literary, and everyday texts. Additionally, the ability to apply appropriate vocabulary greatly influences the quality of communication, both in formal and informal settings (Ani & Sinaga, 2021; Havwini et al., 2024). A solid vocabulary foundation not only facilitates effective communication but also improves students' understanding of subject matter across different disciplines, such as science, mathematics, and social studies, which frequently utilize English terminology.

In addition, sufficient vocabulary mastery has the potential to enhance students' motivation for learning (Umar et al., 2023). When students are capable of understanding and using new words, they gain confidence and become more eager to learn (Havwini et al., 2024). This highlights that vocabulary learning is not merely about memorizing words but serves as an integral part of actively developing language skills (Sanjaya et al., 2022). Consequently, innovative and interactive teaching approaches, such as the use of Word Wall media, can assist students in overcoming difficulties in acquiring new vocabulary. This teaching tool not only helps students retain new words more easily but also transforms the learning experience into one that is more dynamic, enjoyable, and meaningful (Ani & Sinaga, 2021).

The two classes have variants that are regularly distributed and do not differ appreciably, according to the findings of the normality and homogeneity tests. This serves as a standard to ensure that the two classes are in the same state prior to receiving treatment in each class. The study then proceeded to choose the experimental and the control class. The conclusion is that the post-test results in the experimental class and control class show differences, where the experimental class shows an increase in vocabulary in the excellent category compared to the control class which is in the fair category. Through a deeper understanding of vocabulary teaching through media, word wall media then gives students the opportunity to develop their vocabulary mastery skills. Students can easily understand the teaching by remembering the vocabulary provided, and they don't feel bad when they use word wall media strategies. This makes learning dull since students do not receive a repetitive teaching and learning process in class, particularly when it comes to mastering vocabulary, which is seen as a dull, tedious, and monotonous lesson.

5. Conclusion

In the experimental class, the use of Word Wall media demonstrated its effectiveness in improving students' vocabulary skills, as evidenced by a significant increase in their scores. This indicates that Word Wall media has a positive impact on students' vocabulary mastery. Additionally, students' responses to the teaching and learning activities reveal strong interest in the use of Word Wall media, as shown by their active participation in lessons and class discussions. Lastly, students have become more engaged in learning vocabulary, suggesting that Word Wall media supports them in independently enhancing and mastering their vocabulary.

The research shows that using Word Wall media in learning significantly improves students' vocabulary mastery, as seen in the higher scores of the experimental class. Students in this class were more engaged and actively participated in vocabulary learning, allowing them to master it independently. In contrast, the control class, which did not use Word Wall media, showed no significant improvement, with students struggling to memorize vocabulary. This highlights that Word Wall media is more effective than conventional teaching methods.

The researcher provided several recommendations in this area. First, the use of word wall media is highly beneficial for both teachers and students in enhancing vocabulary mastery. Teachers are encouraged to consistently utilize word walls as a learning tool during vocabulary instruction in the classroom. Additionally, learning media, such as word walls, significantly improve the effectiveness, efficiency, engagement, and enjoyment of the learning process. Students are advised to use appropriate word wall media to deepen their understanding of the material. Lastly, while this study focuses on the teaching process, further research is needed to explore how students interact with and benefit from word walls in their learning.

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