

***THE EFFECTIVENESS OF WORDWALL MEDIA IN ENHANCING ENGLISH
VOCABULARY MASTERY AMONG HIGH SCHOOL STUDENTS'
(AN EXPERIMENTAL RESEARCH AT SMAN 1 BILUHU)***

Mohamad Akmal R. Ntuiyo^{1*}, Moon Hidayati Otoluwa², Yunita Hatibie³
^{1,2,3} Universitas Negeri Gorontalo, Kota Gorontalo, Indonesia
akmalntuiyo12@gmail.com

Abstract

This research investigates the effectiveness of Wordwall as a learning media in enhancing English vocabulary mastery among first-grade students at SMAN 1 Biluhu. The background stems from students' low vocabulary performance and the limited use of educational technology in the classroom. Employing a quasi-experimental design with one-group pre-test and post-test, the study involved 30 students and focused on four vocabulary categories: nouns, verbs, adjectives, and adverbs. The treatment consisted of four meetings using descriptive texts and Wordwall games. Data collection was conducted through vocabulary tests and analyzed using statistical methods including validity, reliability, normality, and paired sample t-test. The findings showed a significant improvement in students' vocabulary scores after the intervention, with the average score increasing from 49 (pre-test) to 65 (post-test). The hypothesis testing also supported the effectiveness of Wordwall, with a p-value of 0.001 (< 0.05), indicating that the media significantly enhanced vocabulary mastery. Additionally, students demonstrated increased motivation and engagement during the learning process. Despite challenges such as limited internet access and varying student proficiency, the study concludes that Wordwall is a beneficial and interactive tool for vocabulary development. These results are expected to inform future instructional practices and promote the integration of digital tools in language education.

Keywords: Wordwall, Vocabulary, Pre-Test, Post-Test.

INTRODUCTION

Vocabulary is one of the most crucial steps in improving English language skills. Because without mastering vocabulary students' cannot master speaking, reading, writing, and listening skills. This is in accordance with the vision and mission of English Language Education Study Programme. English Language Education Study Programme has a vision and mission to improve English language learning capabilities that are innovative, transformative, global, and adaptive to the latest developments in science and technology based on the region. In this context, the use of educational technology has become an important component in improving the teaching and learning experience, particularly in English language teaching.

In senior high schools, teaching vocabulary should be integrated meaningfully into reading and responding activities that reflect the learning objectives of Phase E in the English curriculum. At this stage, students are expected to engage with various text types—such as narratives, descriptions, procedures, expositions, recounts, and reports—both in printed and digital formats, including visual, multimodal, or interactive texts. Effective vocabulary teaching, therefore, involves exposing students to these authentic texts and guiding them to identify and understand key vocabulary in context. Through such exposure, students develop the ability to comprehend main ideas, evaluate specific details, infer implicit meanings, and recognize the author's purpose. However, many classrooms still employ isolated word lists and memorization techniques that lack context and fail to support deeper comprehension or critical thinking. This gap between

curricular goals and actual practice calls for innovative teaching media that can enhance vocabulary learning in context. One effective solution to address this challenge is the use of Wordwall.

(Wordwall, 2023) Wordwall is one of the educational technologies in an online platform that allows teachers to create engaging and customizable activities such as quizzes, word games, and flashcards in the English teaching process. Wordwall not only makes learning fun, but also allows students' to practice and strengthen their language skills in a more interactive and stimulating environment. Wordwall offers various game formats such as "Match Up", "Fill in the Blanks", "Find the Word", and "Quiz", all of which can be customized according to English learning objectives. These activities can be used for in-class practice and independent practice, providing students' with immediate feedback and a sense of achievement.

Previous research from Restu Triariani (2020), Risma Febrianti (2024), and Fathimatuzzahra (2024) have explored the use of Wordwall for vocabulary learning in urban schools with stable technological infrastructure, this research goes beyond evaluating the functionality of Wordwall. This research tests its effectiveness in a prural context under the Kurikulum Merdeka, which emphasizes innovative and student-centered learning approaches. Moreover, the research uniquely integrates analysis of student motivation, engagement and alignment with curriculum objectives, providing a comprehensive understanding of how Wordwall impacts vocabulary mastery and broader language proficiency.

When doing PPL, the researcher used Wordwall in taught English and the students' became more excited in learning it. Because Wordwall provides fun games and animation in learning it. it is important to examine whether the use of Wordwall can effectively improve vocabulary mastery and support students' overall language proficiency. Therefore, I would like to find out Wordwall can enhance students' English vocabulary at SMAN 1 Biluhu.

SMAN 1 Biluhu is a senior high school which located in Gorontalo Regency whereas area has many beach destinations. The researcher chose the school because of some reasons. Firstly, it is researcher's almamater. Secondly, the only one English teacher will move to other school. Thirdly, I will teach English at the school after I finish my study. Fourthly, the researcher found that students' English vocabullary skills are still low. The researcher had also already conducted Pre-Observation at SMAN 1 Biluhu and found that the students' English vocabulary is still low for grade 10, grade 11 and 12 are in intermediate. Meanwhile, internet network at the school are not work properly. Other hand, English is only taught by one teacher whom help by arabic teacher.

Based on the explanation above, the researcher would like to investigate whether wordwall can enhance students' English vocabullary which a title "The Effectiveness of Wordwall Media in Enhancing English Vocabulary Mastery Among High School Students' (An experimental research at SMAN 1 Biluhu)".

METHODOLOGY RESEARCH

1. Research Design

This research used a quantitative method with a quasi-experimental design, specifically a one-group pretest-posttest design, as outlined by Creswell (2012). The research focused on evaluating the effectiveness of Wordwall media in improving students' vocabulary mastery, particularly in four main lexical categories: nouns, verbs,

adjectives and adverbs. The experiment involved administering a pre-test at the beginning of the study to assess students' basic vocabulary knowledge. After that, the treatment was conducted for four meetings, where vocabulary was taught using the interactive Wordwall media activity for a specific period. After the treatment, a post-test was conducted to measure the improvement in vocabulary mastery.

2. Population and Sample

A population is a group of individuals who have the same characteristic (Creswell, 2008). Therefore, a population is the total of all the individuals who have certain characteristics and are being the interest a researcher. Populations in this research were 136 students' class X of the academic year in 2024/2025. A sample is a smaller proportion which assumed to represent the characteristic of population. According to Cohen, Manion, and Morrison (2005) stated that "sample is the small group that is observed. The sample of this research was obtained 30 students' from class of X-1 of class X at SMAN 1 Biluhu. To choose the sample, the researcher used purposive sampling. According to Arikunto (2010), purposive sampling is the process of selecting sample by taking subject that is not based on the level or area, but it is taken based on the specific purpose. The researcher chose this technique, because he wanted to solve students' problem faced in class by using wordwall and hopefully can improve students' vocabulary.

3. Data Collection

Test

According to Postlethwaite (2005), a test is an instrument that aims to obtain student responses. In this research, the researcher conducted a test in the form of multiple choice questions. The sample used for this item analysis was another class that was not a control class, with a total of 30 students like the control class. The questions used were 50 numbers using "Wordwall" as a medium to answer the questions. The following are the questions used in the item analysis. After researchers conducted tests on students in the form of multiple choice questions, of the 50 questions given to the non-control class, there were 32 valid questions while 18 questions were invalid. so the valid questions that researchers will use in the pre-test and post-test tests to the control class X-1. The research was conducted at SMAN 1 Biluhu, which the researcher took place in class X-1 to be the sample, then treated in experimental class by using wordwall. Experimental teaching was done for first meetings which are four meetings for treatment and two meetings for giving pre-test and post-test. During the experimental teaching, the researcher used wordwall in teaching vocabulary (noun, verb, adjective, adverb)

4. Validity Test

Validity refers to the measurement that was used by the researcher to see the valid degree in the instrument of the research (Arikunto, 2010). In other words, the instrument is said valid if the data has high validity, and on the contrary and instrument is invalid when the data have low validity. To decide the data whether or not valid, the researcher used the product-moment formula of this research as follow:

$$r_{xy} = \frac{N \sum xy - (\sum x)(\sum y)}{\sqrt{\{N \sum x^2 - (\sum x)^2\} \{N \sum y^2 - (\sum y)^2\}}}$$

Notes:

r_{xy} = Coefficient of correlation between variable X and Y

$\sum X$ = Total score that acquired from respondent
 $\sum Y$ = Total score from each items respondent
 N = the number of respondent

The total questions used for the validity test were 50 numbers in the form of multiple choice. after conducting the validity test it turned out that only 32 questions were valid while 18 questions were invalid. valid questions in the form of number 6, 7, 9, 10, 11, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 28, 29, 30, 31, 33, 34, 38, 39, 40, 41, 42, 43, 44, 45, 46. This data represents the results of a validity test conducted by using spss 30.0; likely as part of a research. The test aims to assess whether these measures effectively measure what they are intended to measure. Each row in the data table represents the number of question. The Rvalue represents the result of validity test. Meanwhile, the 'R-Table' column serves as a reference point which the 'R- Value' is compared to determine statistical validity of the test. The 'Information' column categorizes each correlation as either 'Valid' or Not Valid' (Not Valid) based on a comparison between the 'R-Value' and the 'R-Table'. If the 'R-Value' exceeds or equals the 'R-Table', the correlation is considered valid; otherwise, it is deemed not valid. For instance, in row 1, the 'R-Value' of -0,346 is lower than the 'R-Table' of 0.361, resulting in a designation of 'Not Valid' and so on. Therefore, the result of instrument after validity could be seen as bellow.

5. Reability Test

According to Fraenkel, Wallen & Hyun (2012)”Reliability refers to the consistency of scores or answers from one administration of an instrument to another, and one set of items to another.” in testing reliability, the test was used formula as follow: (K-R 21) Kuder Richardson (Arikunto 2010):

$$r_{11} = \left(\frac{k}{k-1} \right) + \left(1 - \frac{M(k-m)}{kV_1} \right)$$

Where:

r_{11} = Instrument Reliability

k = the number of items

m = the average of the score

V_t = Total Variants

Table 2: Criteria of Reliability (Arikunto, 2010) as follow:

Table 2. Reliability Criteria

Realibility	Criteria
0,80-1,00	Very high
0,60-0,80	High
0,40-0,60	Moderate
0,20-0,40	Low
0,00-0,20	Very Low

Table 3. Result of Reliability Statistic

Reliability Statistics	
Cronbach's Alpha	N of Items
.881	50

The provided reliability statistics indicate that Cronbach's Alpha coefficient for the set of items is 0.881, and there are 50 items in total. The reliability of 0,881 suggests a “very high” level of internal consistency among the 50 items based on the table of reliability criteria.

6. Normality Test

The normality test is carried out to evaluate whether the research data has a normal distribution or not. In addition, the normality test is also important as a condition for conducting parametric statistical analysis. In the context of this research, researchers have conducted a normality test using the Shapiro-Wilk method. This was done because the number of research samples was 30, which is below the general threshold ($n < 50$) for using the Shapiro-Wilk normality test. The results of this normality test will provide information on whether the research data has a normal distribution or not. If the results indicate that the data is not normally distributed, then the research may need to use a more appropriate nonparametric statistical analysis method to avoid violating the normal distribution assumption in parametric analysis. Conversely, if the data is normally distributed, the researcher can proceed with the appropriate parametric analysis.

Table 4. Test of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PRE TEST	.101	30	.200 [*]	.954	30	.220
POST TEST	.118	30	.200 [*]	.944	30	.113

The table presents the results of normality tests for both pretest and posttest data using the Kolmogorov-Smirnov and Shapiro-Wilk tests. The goal is to determine if the data in both tests follows a normal distribution. For the pretest, the significant value is 0.200 and 0,200 which is higher than the threshold of 0.05. This indicates that the pretest data does not significantly deviate from normality, meaning it can be considered normally distributed. For the posttest, the Sig. value is 0.200 and 0,113, which is higher 0.05. This indicates that the posttest data does not significantly deviate from normality, meaning it can be considered normally distributed. Both tests show that the pretest and posttest data follows a normal distribution.

7. Hypothesis Verification Formula

The hypothesis verification formula in this research are:

H₁: The use of wordwall could effective to enchange the students' vocabulary mastery in class X-1 of SMAN 1 Biluhu.

H₀: The use of wordwall could not effective to enchange students' vocabulary mastery in class X-1 of SMAN 1 Biluhu.

FINDING & DISCUSSION

This section provides a description of pre-test and post-test data, outlines data analysis, and presents hypotheses. The data were collected from first grade students at SMAN 1 Biluhu, with a total of 30 students. The results showed that the students had mixed scores in vocabulary mastery. Although it is expected that tenth grade students are able to master vocabulary such as nouns, adjectives, verbs, and adverbs well, the reality is that the pre-test results show that their understanding is still below average. This is a challenge in itself considering that at this level students should already have a

strong vocabulary base to support more complex learning. Therefore, a more interactive learning approach, such as the use of Wordwall, is needed to help improve their vocabulary mastery. Then I thought that the students' should already be able to operate a computer well because there is an Informatics subject. But in reality, almost all grade X students' could not operate a computer. To address this gap and ensure that students achieve learning outcomes appropriate to their grade level, the researcher proposed an experimental study implementing the use of wordwall as a learning media

1. Description of Students' Pre-test

This part was describing the data of pre-test before applied the treatment. The lowest score in this pre-test was 16 and the highest score was 81 with the total score 475. Then the statistic calculation of pre test obtained the mean score (X_1) was 49.

Furthermore, the pre-test scores of the students' were calculated by aggregating the total score across four indicators of vocabulary mastery. The scores for each component of the pre-test can be observed in the table below:

Table 5. Students' Pre Test Classification

Grade	Score	Frequency of Students'	Percentage
A	86-100	0	0%
B	66-85	6	20%
C	56-65	8	26,5%
D	26-45	10	33,5%
E	Under 25	6	20%
Total		30	100%

"The use of grades aims to facilitate the interpretation of learning outcomes and decision-making on further learning actions." – (Arikunto, 2010: 245). This data outlines the pre-test results conducted at SMAN 1 Biluhu for 10th-grade students' to introducing the wordwall as a learning media aimed at enhancing their vocabulary. The results are categorized into five grades based on score ranges: A, B, C, D, and E. Out of the total 30 students' assessed, the distribution of grades showed no student achieved an 'A' grade (86-100), indicating a strong grasp of vocabulary. Six students' (20%) obtained a 'B' grade (66-85), indicating above-average performance. Eight students' (26,5%) fell into the 'C' grade (56- 65), suggesting a satisfactory understanding of vocabulary. The majority of students', ten in total (33,5%) received a 'D' grade (26-45), indicating a need for improvement in vocabulary skills. Lastly, six students' (20%) 'E' to meet the minimum requirements for proficiency in vocabulary. This data provides valuable insights into the initial proficiency levels of students', highlighting areas where they may require additional support and intervention to enhance their vocabulary skills before implementing wordwall as learning media.

1. Description of Students' Post-Test

This part was describing the data of post-test before applied the treatment. The lowest score in this post-test was 22 and the highest score was 97 with the total score 623. Then the statistic calculation of pre test obtained the mean score (X_2) was 65.

Furthermore, the pre-test scores of the students' were calculated by aggregating the total score across four indicators of vocabulary mastery. The scores for each component of the pre-test can be observed in the table below:

Table 6. Students' Post Test Classification

Grade	Score	Frequency of Students'	Percentage
A	86-100	6	20%
B	66-85	9	30%
C	56-65	7	23%
D	26-45	5	17%
E	Under 25	3	10%
Total		30	100%

This data outlines the post-test results conducted at SMAN 1 Biluhu for 10th-grade students' to introducing the wordwall as a learning media aimed at enhancing their vocabulary. Among the 30 students' assessed, the majority showcased significant progress. Specifically, 20% of students' achieved grade falling within the "A" range (86-100), demonstrating an outstanding understanding of vocabulary. Additionally, 30% fell into the "B" grade (66-85), indicating commendable improvement. Although representing a smaller proportion, 23% attained scores grade as "C" (56-65), reflecting notable progress. However, some students' with the percentage of 17%, scored within the "D" range (26-55), suggesting there were still a few students' need to be paid attention at. Furthermore, 10% of students' scored below 25, highlighting the necessity for ongoing support. Despite these challenges, the data overall underscores the positive impact of the wordwall as a learning media intervention on students' vocabulary mastery. Nonetheless, it also emphasizes the strong increasing if the researcher compared to the result of pre test.

2. Comparison of Pre-Test and Post-Test Data

Table 7. Comparison of Pre-Test and Post-Test Data

Grade	Score	Frequency of Pre Test	Frequency of Post Test
A	86-100	0	6
B	66-85	6	9
C	56-65	8	7
D	26-45	10	5
E	Under 25	6	3
Total		30 students'	30 students'

The comparison of students' scores between the pre-test and post-test provides the researcher to assess the effectiveness of the intervention, likely the wordwall as a learning media in increasing vocabulary mastery. In the pre-test, the majority of students' were distributed mostly in "D" grades, with only a few achieving grades "B" or "A" which indicated higher proficiency levels. However, in the post-test, there was a great shift towards higher grades, particularly in the "A" and "B" grades. Specifically, the number of students' achieving scores in the "A" increased from 0 to 6 students', while those in the "B" grades from 6 to 9 students'. This indicated that the wordwall as a learning media has given positive impact as the intervention on students' vocabulary mastery, with more students' demonstrating improved proficiency levels. Additionally, there was a decrease in the number of students' in the "C" grades from 8 to 7, indicating further improvement, while the number of students' in the "D" grades decreased from 10 to 5, suggesting progress. Moreover the "E" grades changes from 6 to 3 indicating that

the students' vocabulary mastery could be increased by using wordwall as a learning media.

3. Hypothesis Verification

The purpose of hypothesis verification is to systematically test and evaluate a proposed hypothesis in order to determine its improvement. Hypothesis in this research refers to the evaluation the use of wordwall as a learning media, whether that could significantly improve the students' vocabulary significantly in first grade of SMAN 1 Biluhu.

The data was calculating by using spss 30.0. The researcher compared the Significance of students' pre test and post test by using t-test to evaluate the effectiveness of wordwall in enhancing students' vocabulary in the first grade of SMAN 1 Biluhu.

Table 8. Paired Sample T-Test

Paired Samples Test										
		Paired Differences					Significance			
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	One-Sided p	Two-Sided p
					Lower	Upper				
Pair 1	PRE TEST - POST TEST	-14.733	7.520	1.373	-17.541	-11.925	-10.731	29	<.001	<.001

The null hypothesis (H0) that there would be no significant difference in students' vocabulary scores before and after the intervention, while the alternative hypothesis (H1) suggested that there would be a significant improvement in vocabulary scores after the intervention. The results of the paired samples t-test indicate a statistically significant difference between students' pretest and posttest scores ($p < 0.05$) where the value of significant was 0.001. This suggests strong evidence that $0.001 < 0.05$ and it means the researcher should reject the null hypothesis, indicating that the use of the wordwall as a learning media led to a significant improvement in students' vocabulary. Overall, these results support the hypothesis that the wordwall as a learning media significantly improved students' vocabulary in the first grade of SMAN 1 Biluhu.

The objective of the research is to investigate whether the use of the wordwall as a learning media significantly improve the vocabulary proficiency of first-grade students' during the academic year 2024/2025. The research aims to assess the effectiveness of wordwall in enhancing students' vocabulary within the context of main classes of X-1 first grade students' at SMAN 1 Biluhu.

By focusing on this objective, the research seeks to contribute to the understanding of the impact of wordwall as a learning media on students' language learning outcomes. Specifically, it aims to determine whether the use of wordwall as a teaching tool leads to a statistically significant improvement in students' vocabulary mastery. Here the vocabulary mastery only limited at noun, verb, adjective and adverb since considering that the teachers only taught those kinds of vocabularies at the school. Some discussions that can be described are how the researcher applies the games method when learning to students' is first; the researcher divides students' into several small groups consisting of 4-5 students'. Second; the researcher distributed descriptive texts by explaining some aspects of vocabulary that would be taught. Third; the student will read and the other students' will guess the vocabulary based on the indicators that have been explained.

Then explain how the steps in analyzing descriptive text by inviting students' to read descriptive text carefully. Then mark nouns by asking students' to look for words that show tourist destination. After that look for verbs by Students' should focus on words that describe actions or circumstances contained in the story by paying attention to whether there are words that show movement or activity. Then identify adjectives by

asking students' to look for words that describe or give additional information about the noun. Finally, find adverbs in the story by asking students' to look for words that describe how, when, or where an action is performed (usually ending in "-ly", but not always).

The researcher integrates text comprehension activities to ensure students' understand the descriptive text while using the vocabulary learned through the games. Then after the discussion that happened in the classroom: After reading the descriptive text, students' discuss the vocabulary found in the text. The researcher can ask students' to identify the words they see in the games and relate them to the descriptions in the text. Afterwards, students' are asked to answer their own description text, using the words they have learned through the games and the descriptive text.

The advantage of using the wordwall in English learning was also found by the researcher, namely, students' get new vocabulary because in learning this vocabulary is always repeated so that students' can remember and understand it. Wordwall also makes students' interested in the games method because they directly play it. In addition, the disadvantages of wordwall were also found during learning, namely, the researcher had a little trouble organizing the students' because they were too noisy debating the wordwall they found so that the atmosphere in the classroom became noisy. Researchers also have to choose easy and familiar vocabulary so that students' do not have difficulty understanding it.

During implementing this technique, the researcher identified several challenges that stated by Karim and Hasbullah (1986) the researcher encounter when implementing wordwall in teaching vocabulary to senior high school students' in SMAN 1 Biluhu. Some games may contain difficult words or concepts that are beyond the students' current level of understanding. If the games are too challenging, students' may become frustrated and lose interest in learning vocabulary through this method. Also the researcher needs to ensure that the vocabulary used in wordwall aligns with the students' proficiency level. If the games contain words that are too advanced or unfamiliar to the students', they may struggle to comprehend the meaning and context, leading to ineffective vocabulary mastery.

While teaching, students' required clear explanations and guidance from the researcher to fully understand the meaning of the wordwall and the vocabulary words contained within them.

As the result, students' were struggling to catch the intended vocabulary learning objectives. Researcher also difficult in strike a balance between creating games that are engaging and stimulating for students' while also ensuring that the vocabulary words used are accessible and comprehensible.

The interactive and stimulating nature of wordwall likely encouraged students' to actively engage with language and expand their vocabulary in a fun and engaging manner (Lorenza et al., 2017). Additionally, the results in line with this theory that suggest that the wordwall as a learning media effectively improve students' vocabulary mastery. In conclusion, the findings of this research strongly support the efficacy of the wordwall as an a learning media for improving students' vocabulary mastery.

The results of the hypothesis verification and paired samples t-test provide evidence regarding the effectiveness of wordwall in improving students' vocabulary mastery in the first grade of SMAN 1 Biluhu. The hypothesis that the use of wordwall would significantly improve students' vocabulary was strongly supported by the data, as indicated by a significant improvement in students' vocabulary scores from the pre-test to the post-test. Firstly, the researcher analyzed the hypothesis. The null hypothesis (H0) stated that there would be no significant difference in students' vocabulary scores before and after the intervention, while the alternative hypothesis (H1) suggested that there would be a significant improvement in vocabulary scores after the intervention. The

results of the paired samples t-test overwhelmingly rejected the null hypothesis ($p < 0.05$), providing strong evidence in support of the alternative hypothesis. This indicates that the wordwall as a learning media indeed led to a significant enhancement in students' vocabulary proficiency.

Examining the comparison of pre-test and post-test data further strengthens this conclusion. The data clearly illustrates a remarkable shift in students' performance levels, with a substantial increase in the number of students' achieving higher grades, particularly in the "A" and "B" grades. This indicates that the wordwall intervention effectively elevated students' vocabulary mastery levels, as evidenced by the significant decrease in the number of students' in the lower proficiency categories. Considering the increase observed in students' vocabulary proficiency, it can be inferred that the wordwall as a learning media successfully engaged students' and facilitated active participation in the learning process.

CONCLUSION

In conclusion, the research findings strongly support the efficacy of the wordwall as a learning media for improving students' vocabulary mastery among first-grade students' at SMAN 1 Biluhu during the academic year 2024/2025. The research aimed to assess the impact of using wordwall as a learning media within the context of main classes of X-1 first grade students', focusing on improving vocabulary mastery limited to nouns, verbs, adjectives, and adverbs. The results of the hypothesis verification and paired samples t-test provided 0.01 which $p < 0.05$ the use of wordwall significantly improved students' vocabulary mastery. The null hypothesis was strongly rejected, indicating a significant improvement in vocabulary scores from the pre-test to the post-test. Despite the effectiveness of wordwall in enhancing vocabulary mastery, the researcher encountered several challenges during its implementation. These challenges included ensuring that the games contained vocabulary aligned with the students' proficiency level and providing clear explanations and guidance to students' so they can comprehensibility understood the vocabulary.

REFERENCES

- Afzal, N. (2019). A Study on Vocabulary-Learning Problems Encountered by BA English Majors at the University Level of Education. *Arab World English Journal*, 10(3), 81–98. <https://doi.org/10.24093/awej/vol10no3.6>
- Allington, R. (2001). What really matters for struggling readers: Designing research-based programs. New York: Longman.
- Anderson, R.C., & Freebody, P. (1981). Vocabulary knowledge. In J.T.Guthrie (Ed.), *Comprehension and teaching: Research reviews* (pp. 93-103). New York: Longman.
- Arikunto, S. (2007). *Dasar-dasar evaluasi pendidikan*. Jakarta: Bumi Aksara.
- Arikunto, S. (2010). *Prosedur penelitian: Suatu Pendekatan Praktik*. Jakarta: PT. Rineka Cipta.
- Andrew, W., David, B., Michael, B. (1984). *Games for Language Learning*. [Online]. Available: <http://www.teflgames.com/why.html>. [28th of May 2013]
- Bima, B., & Kurniawan, C. (2005). *Let`s Talk*. Pakar Raya.
- Brysbaert, M., Keuleers, E., & Mandera, P. (2021). Which words do English non- native speakers know? New supernational levels based on yes/no decision. *Second*

Language Research, 37(2), 207–231.
<https://doi.org/10.1177/0267658320934526>

Bromley, K. (2004). Rethinking vocabulary instruction. *The Learning and Literacy Spectrum*, Vol 14 Spring.

Brown, H. D. (2001). *Teaching by Principles: an Interactive Approach to Language Pedagogy*. New York: Longman.s

Brysbaert, M., Keuleers, E., & Mandera, P. (2021). Which words do English non- native speakers know? New supernational levels based on yes/no decision. *Second Language Research*, 37(2),207–231. <https://doi.org/10.1177/0267658320934526>.

Cameron, L. (2001). *Teaching Languages to Young Learners*. Cambridge: Cambridge University Press.

Carneiro, R. M. O. (2014). Teaching Vocabulary: Lessons from the Corpus, Lessons for the Classroom. In *Domínios de Lingu@gem*. <https://doi.org/10.14393/dl15-v8n1a2014-39>

Celce-Murcia, Marianne. (Eds). *Teaching English as a Second or English learning*, 3rd ed., United State of America, Heinle & Heinle. 2001.

Creswell, J. W. (2014). *Research design: qualitative, quantitative and mixed method approaches*. USA: SAGE publications.

Creswell, John W. 2012. *Research Design Pendekatan Kualitatif, Kuantitatif, dan Mixed*. Yogyakarta: Pustaka Pelajar.

FATHIMATUZZAHRA, F. (2024). THE EFFECTIVENESS OF USING WORD WALL MEDIA TO IMPROVE STUDENTS’VOCABULARY MASTERY (A Case of the 10th Graders of SMK Bina Negara Gubug in the Academic Year 2023/2024) (Doctoral dissertation, Universitas Islam Sultan Agung Semarang).<http://repository.unissula.ac.id/id/eprint/34327>

Febriyanti, R. (2024). THE EFFECT OF WORD WALL ON STUDENTS’VOCABULARY MASTERY OF ELEVEN GRADE AT SMA NEGERI 1 TARAKAN.<https://repository.ubt.ac.id/repository/UBT09-10-2024-135807.pdf>

Frost, S. 2009. *Games and Activities for Teaching Vocabulary Words*.

Harmer, J. (2010). *How to teach English*, Harlow: Oxford.

Hatch, E., & Brown, C. (1995). *Vocabulary, semantics, and language education*.

Hieber, D. W. (2020). *Word classes Daniel W. Hieber (University of Alberta)*. 1–38.

Hornby, A.S, (2009). *Oxford Advance Learner’s Dictionary*, Oxford: Oxford University Press.

Jackson, H., & Amvela, E. (2000). *Words, meaning, and vocabulary: an introduction to modern English lexicology*. London; New York: Cassell, - Open linguistics series.

- Johnson, D.D., & Pearson, P.D. (1984). Teaching reading vocabulary (2nd ed.). New York: Holt.
- Afzal, N. (2019). A Study on Vocabulary-Learning Problems Encountered by BA English Majors at the University Level of Education. *Arab World English Journal*, 10(3), 81–98. <https://doi.org/10.24093/awej/vol10no3.6>
- Jauhari, O. S. (2007). *Genre*. CV. Yrama Widya.
- Karim, M and Hasbullah, F.A. 1986. *Language Teaching Media*. Jakarta:Universitas Terbuka
- Morrison, K. R. B. (1993) Planning and Accomplishing School-Centred Evaluation. Dereham, UK: Peter Francis.
- Nagy, W., & Scott, J. (2000). Vocabulary processes. In M. Kamil, P.B. Mosenthal, P.D. Pearson & R. Barr (Eds.), Handbook of reading research, vol. 3. (pp. 269-284). Mahwah, NJ: Erlbaum
- Nurammida, N., Nizarrahmadi, N., & Yolanda, A. (2024). The Effectiveness Of Wordwall Game As Media To Teach Students' English Vocabulary Mastery Of Eighth Grade. *Jurnal Jendela Pendidikan*, 4(03), 283-292. <https://doi.org/10.57008/jjp.v4i03.937>
- Pardiyono. (2010). *the Art of Teaching*. Andi Offset.
- Postlethwaite, T. N. (2005). Educational research: some basic concepts and terminology. Quantitative research methods, 29-4
- Richard, J. C. & Schmidt, R. (2002). Longman Dictionary of Language Teaching and Applied Linguistic (3th Ed.). London: Pearson Education Limited.
- Rizqiana, I. (2024). THE EFFECT OF USING WORD WALL MEDIA ON THE STUDENTS' VOCABULARY MASTERY. *TULIP (Tulisan Ilmiah Pendidikan): Jurnal Fakultas Keguruan dan Ilmu Pendidikan*, 13(2), 71-77. <https://doi.org/10.54438/tulip.v13i2.4>
- Rogow, S. (2005). A Developmental Model of Disabilities. *International Journal of Special Education*, 20(2), 132-135.
- Stahl, S.A., & Fairbanks, M.M. (1986). The effects of vocabulary instruction: A model-based metaanalysis. *Review of Educational Research*, 56(1), 72- 110
- Slavin, R. E. (1995). Cooperative learning: Theory, research, and practice (2nd.). Englewood Cliffs, NJ: Prentice Hall.
- Sugiyono 2015, Metode Penelitian Kuantitatif, Kualitatif, dan Kombinasi (Mixed Methods), Alfabeta, Bandung.
- Sudijono, Anas. 2011. Evaluasi Pendidikan. Jakarta; Raja Grafindo Persada.
- Steven Wachs (2007), Principal Statistician Integral Concepts, Inc.
- Thornbury, S (2004): How to teach vocabulary, Harlow: Longman.
- Thornbury, Scott. (2002): How to teach vocabulary. Malaysia: Pearson Education

Limited.

Triariani, R. (2020). The Effectiveness of Word Wall Media to Improve Students' Vocabulary Mastery in Learning English at The Seventh Grade of SMPN 1 Siman Ponorogo (Doctoral dissertation, IAIN PONOROGO). <http://etheses.iainponorogo.ac.id/id/eprint/12611>

Ur, P. (1996): Teaching vocabulary. *A course in language teaching: practice and theory*.

Wordwall (2023). Wordwall: Create Interactive Activities for Your Classroom [Online]. Available at: <https://wordwall.net/>

Wright, Andrew. Betteridge, David. Buckby, Michael. (1984). Games for Language Learning.[Online].

Yasminto, M., & Ningsih, A. P. (2024). THE EFFECT OF USING DIGITAL FLASHCARDS ON WORDWALL TOWARDS THE STUDENTS' VOCABULARY MASTERY AT THE 7TH GRADE OF ISLAMIC JUNIOR HIGH SCHOOL SEJAHTERA BADAS. *English Teaching Journal and Research: Journal of English Education, Literature, And Linguistics*, 4(1), 133-144. <https://doi.org/10.55148/etjar.v4i1.122>