

THE EFFECTIVENESS OF WORD WALL EDUCATIONAL GAMES ON STUDENTS' VOCABULARY MASTERY

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ABSTRACT

This research aims to determine the effect of using the Word Wall educational game on students' vocabulary mastery in English among tenth-grade students at AT-TA'AWUN Senior High School. The study employed a quantitative approach with a quasi-experimental design, involving two classes: an experimental class that received treatment using Word wall and a control class that received conventional instruction. Data were collected through pretest and posttest using multiple-choice questions. The results of the descriptive analysis showed that the average pretest score in the experimental class was 50.53 and increased to 83.47 in the posttest, while the control class average increased from 49.93 to 65.73. The data passed the assumption tests, including normality and homogeneity. The results of the independent samples t-test showed a significance value of < 0.005 , indicating a significant difference between the experimental and control groups. The effect size (Cohen's $d = 2.985$) was categorized as very large. These findings demonstrate that the use of the Word Wall educational game has a significant and strong influence on students' English vocabulary mastery.

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INTRODUCTION

Vocabulary mastery is a key component in language skills, especially in learning English as a foreign language. A rich vocabulary enables students to understand texts, express ideas in writing and orally, and improve their effective listening skills (Nation, 2020). Without adequate vocabulary mastery, students will have difficulty understanding the subject matter, both academically and communicatively. Therefore, it is important for

educators to design learning strategies that can improve vocabulary acquisition in a meaningful and fun way.

In today's digital era, the use of technology-based learning media is increasingly becoming a necessity, no longer just an option. One approach that has proven effective is the implementation of game-based learning. Educational games not only increase learning motivation, but also create a more

active and collaborative classroom atmosphere (Putri, 2023). In the context of language learning, educational games allow students to learn while playing, which indirectly increases their emotional and cognitive engagement with the material being learned.

One of the digital educational media that is growing rapidly and starting to be widely used in education is Word Wall. Word Wall allows teachers to create various interactive activities such as matching, multiple choice quiz, anagram, and word search that can be played online or offline. Its flexibility and attractive design make Word Wall an effective tool in teaching vocabulary to students of all levels.

Previous research by (Lestari, 2025) proved that the use of Word Wall can significantly improve the vocabulary mastery of junior high school students. Similar results were also found in (Sari, 2022) research which showed an increase in student learning outcomes after the application of Word Wall as a learning media. Nonetheless, most of the studies still focus on primary or junior secondary education, with little exploration of its implementation at the high school level. In addition, not many studies have used a quasi-experiment design to measure the effectiveness of Word Wall in a more objective and controlled manner.

Based on this background, this research is important to fill the gap. The researcher wants to find out how much influence the use of Word Wall educational games has on the mastery of English vocabulary of high school students, especially class X, using a quantitative approach and quasi-experimental design. This research is expected to provide empirical and practical contributions to the world of education, especially in the development of interactive learning media that suits the needs of the digital generation.

Thus, the main objective of this study is to find out whether there is a significant effect of using Word Wall media on the mastery of English vocabulary of grade X students of AT-TA'AWUN Senior High School.

RESEARCH METHODOLOGY

This study used a quantitative approach with a quasi-experimental design. The sample consisted of two classes of X SMA At-ta'awun, which were selected purposively. The experimental class was given learning by using Wordwall media, while the control class used the usual lecture method. The instrument used was a multiple-choice vocabulary test of 36 questions.

Data were collected through pre-test and post-test, then analyzed using normality test, homogeneity test, Independent Samples t-Test test, and effect size calculation using Cohen's d formula. All statistical tests were conducted using the SPSS 29 application.

RESULTS AND DISCUSSION

This study aimed to investigate the effect of using Wordwall educational games on the vocabulary mastery of tenth-grade students at AT-TA'AWUN Senior High School. The research employed a quasi-experimental design involving two groups: an experimental class taught using Wordwall and a control class taught with conventional methods. Data were collected through pre-tests and post-tests and analyzed using descriptive and inferential statistics.

Table 4.1 the result of descriptive statistic

Descriptive Statistics						
	N	Range	Minimum	Maximum	Mean	Std. Deviation
Pre test Experiment	30	20	40	60	50.53	5.680
Post test Experiment	30	22	74	96	83.47	5.758
Pre test Control	30	20	40	60	49.93	5.681
Post test Control	30	24	56	80	65.73	6.119
Valid N (listwise)	30					

Descriptive analysis showed a substantial increase in the experimental group's mean score from the pre-test ($M = 50.53$, $SD = 5.68$) to the post-test ($M = 83.47$, $SD = 5.76$). In contrast, the control group also improved, though to a lesser extent, from a pre-test mean of 49.93 ($SD = 5.68$) to a post-test mean of 65.73 ($SD = 6.12$). This suggested a greater gain in vocabulary mastery for students exposed to the Wordwall treatment.

Table 4.2 The result of the reliability test

Reliability Statistics	
Cronbach's Alpha	N of Items
.775	36

The result showed that the Cronbach's Alpha coefficient was 0.775 for a total of 36 items. A reliability coefficient of 0.60 or higher is generally considered acceptable for educational research. Therefore, the obtained value indicates that the instrument has good reliability, suggesting that the items consistently measure the intended construct. This level of reliability confirms that the vocabulary test used in this study is internally consistent and suitable for research purposes, as it is capable of producing stable and consistent results over repeated applications.

Table 4.3 the result of normality test

Tests of Normality							
	Kelas	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Hasil	Pre test A (Experiment)	.104	30	.200*	.964	30	.389
	Post test A (Experiment)	.101	30	.200*	.968	30	.479
	Pre test B (Control)	.067	30	.200*	.974	30	.642
	Post test B (Control)	.116	30	.200*	.969	30	.501

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

The Kolmogorov–Smirnov and Shapiro–Wilk tests indicated that the data were normally distributed ($p > 0.05$), and the data can be considered normal.

Table 4.4 The result of the homogeneity test

Test of Homogeneity of Variance					
		Levene Statistic	df1	df2	Sig.
Nilai	Based on Mean	.058	1	58	.811
	Based on Median	.048	1	58	.828
	Based on Median and with adjusted df	.048	1	57.563	.828
	Based on trimmed mean	.064	1	58	.801

The significance value ($p = 0.811$) is greater than 0.05 , indicating that there is no significant difference in variance between the groups. This means the assumption of homogeneity of variance is met, and the data can be considered homogeneous.

Table 4.5 The result of the independent sample t-test

Independent	Samples	Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Resu It	Equal variances assumed	.058	.811	11.560	58	<.001	17.733	1.534	14.663	20.804
	Equal variances not assumed			11.560	57.787	<.001	17.733	1.534	14.662	20.804

To test the hypothesis, an independent samples t-test was conducted. The result revealed a statistically significant difference between the post-test scores of the experimental and control groups ($t(58) = 11.560$, $p < 0.001$), confirming that the use of Wordwall had a positive effect on students' vocabulary mastery.

Table 4.6 the result of effect size

Independent Samples Effect Sizes					
Nilai	Cohen's d	Standardizer ^a	Point Estimate	95% Confidence Interval	
				Lower	Upper
		5.941	2.985	2.237	3.720
	Hedges' correction	6.020	2.946	2.208	3.672
	Glass's delta	6.119	2.898	1.991	3.788

a. The denominator used in estimating the effect sizes. Cohen's d uses the pooled standard deviation. Hedges' correction uses the pooled standard deviation, plus a correction factor. Glass's delta uses the sample standard deviation of the control group.

Furthermore, the effect size was calculated using Cohen's d, yielding a value of 2.985, which falls under the "very large" category. This result indicates that the use of Wordwall had a substantial impact on improving students' vocabulary mastery.

These findings were consistent with previous research, such as (Lestari R. , 2025), who also reported significant gains in vocabulary learning through the use of Wordwall media in a junior high school context. Her study emphasized that Wordwall not only improved learning outcomes but also enhanced student engagement and motivation.

In conclusion, the statistical evidence strongly supports the effectiveness of Wordwall as a digital learning tool in enhancing English vocabulary mastery among high school students. This study aimed to investigate the effect of using Word Wall educational games on the vocabulary mastery of tenth-grade students at AT-TA'AWUN Senior High School. The research employed a quasi-experimental design involving two groups: an experimental class taught using Word Wall and a control class taught with conventional methods. Data were collected through pre-tests and post-tests and analyzed using descriptive and inferential statistics.

CONCLUSION

Based on the results of the research that has been conducted on the effect of using Word Wall educational games on the mastery of English vocabulary of grade 10 students of AT-TA'AWUN Senior High School, it can be concluded that the use of Word Wall media has a significant effect on students' vocabulary mastery. This is evidenced by the t-test results which show a significant difference between the experimental and control classes ($t = 11.560$, sig. <0.005). Thus, Word Wall proved to be effective as an innovative learning medium in improving students' mastery of English vocabulary

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