The Effect of Wordwall Application on Vocabulary Mastery Of 3rd Grade SDN Setonopande 1

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ABSTRACT
This research is motivated by the fact that many students have difficulty in learning English because their vocabulary is limited, which makes them difficult to understand texts, answer questions, and follow instructions. This is due to the limited interactive teaching media used by teachers in the classroom. This study aims to determine the effect of using the Wordwall application in increasing the vocabulary of grade 3 students at SDN Setonopande 1. This study used a pre-experimental design with a one group pre-test and post-test model involving 27 students. Before being taught using Wordwall, the average vocabulary score of students was 55. After treatment, the average post-test score increased to 84.25. The results of the Wilcoxon Signed Rank test showed a significance value of 0.000 with a Z-score of -4.552. This shows that there is a significant difference between students' scores before and after treatment. Thus, it can be concluded that the Wordwall application has an effect on increasing students' vocabulary mastery of 3rd grade SDN Setonopande 1.

Keywords: Wordwall Application, English Vocabulary, Young Learners.

ABSTRAK
Penelitian ini dilatarbelakangi oleh kenyataan bahwa masih banyak siswa yang mengalami kesulitan dalam mempelajari bahasa Inggris karena keterbatasan kosakata yang dimiliki sehingga menyebabkan mereka kesulitan dalam memahami teks, menjawab pertanyaan, dan mengikuti instruksi dalam bahasa Inggris. Hal ini disebabkan oleh terbatasnya media pembelajaran interaktif yang digunakan oleh guru di dalam kelas. Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan aplikasi Wordwall dalam meningkatkan kosakata siswa kelas 3 SDN Setonopande 1 Kediri. Penelitian ini menggunakan desain pre-eksperimental dengan model one group pre-test and post-test yang melibatkan 27 siswa. Hasil penelitian menunjukkan adanya peningkatan skor kosakata siswa secara signifikan setelah diberikan perlakuan, dengan skor rata-rata meningkat dari 55 pada pre-test menjadi 84,25 pada post-test. Hasil uji Wilcoxon Signed Rank menunjukkan nilai signifikansi sebesar 0,000 dengan Z-score sebesar -4,552. Hal ini menunjukkan bahwa terdapat perbedaan yang signifikan antara skor siswa sebelum dan sesudah diberikan perlakuan. Dengan demikian dapat disimpulkan bahwa aplikasi Wordwall berpengaruh terhadap peningkatan pembendaharaan kata siswa kelas 3 SDN Setonopande 1.

Kata Kunci: Aplikasi Wordwall, Kosakata Bahasa Inggris, Pembelajar Muda.

INTRODUCTION

Vocabulary is one of the most essential components in learning English as a foreign language. It serves as the foundation for students to communicate and understand English in both spoken and written forms. According to Alhaider (2023), vocabulary, along with other language components such as pronunciation and grammar, plays a significant role in supporting the development of the four language skills listening, speaking,

reading, and writing. Without sufficient vocabulary, students may face difficulties in expressing their ideas, understanding others, and participating in meaningful communication.

In the context of Indonesian education, English is taught as a foreign language and is often introduced at an early level of education. According to the Merdeka Curriculum, English language learning in elementary schools aims to help students develop communicative competence through multimodal texts (oral, written, visual, and audiovisual). It also encourages intercultural understanding, critical thinking, and self-confidence. English is categorized as an elective subject but may be introduced as early as Grade 1. The curriculum divides elementary education into three phases: Phase A (Grade 1–2), Phase B (Grade 3–4), and Phase C (Grade 5–6), each with different learning focuses. Furthermore, based on Permendikbudristek No. 12 of 2024, English will become a compulsory subject starting in the 2027/2028 academic year.

However, in practice, many elementary school students still struggle with vocabulary acquisition. During a preliminary observation conducted at SDN Ngampel 1 as part of the Kampus Mengajar 6 program, the researcher found that many students lacked sufficient vocabulary. This limitation made it difficult for them to respond to questions, understand texts, and follow classroom instructions. According to Nation (2001), elementary school students must master at least three aspects of vocabulary learning: form, meaning, and use. However, in practice, most of the vocabulary learning relied heavily on textbooks, with minimal use of interactive or engaging learning media. As a result, students often lose interest and demonstrate low motivation, thus failing to achieve the three aspects of vocabulary in English learning..

To solve this problem, it is essential to use interactive digital media that can attract students' interest and make learning more enjoyable. One of the tools that can be utilized is the Wordwall application. Wordwall is a website-based educational platform that allows teachers to create various interactive activities such as quizzes, word matching games, and word searches. This application has many game features suitable for vocabulary learning based on three aspects: form, meaning, and usage. These games can help students improve their vocabulary in a fun and engaging way.

Several previous studies have highlighted the effectiveness of Wordwall in vocabulary learning. For instance, Zulva (2024) conducted an experimental study at SMPN 5 Salatiga and found a significant increase in vocabulary scores after using Wordwall. Similarly, Nova, Sa'adah, and Weran (2024) revealed that Wordwall enhances contextual vocabulary learning through interactive experiences. Another study by Widhiatama and Brameswari (2024) showed that the application of Wordwall in higher education classes improved students' motivation and engagement. Although

these studies support the effectiveness of Wordwall, most of them focused on older learners.

Little attention has been given to the impact of Wordwall on younger students, particularly at the lower grades of elementary school. Moreover, few studies have explored its impact in relation to vocabulary aspects such as spelling, meaning, and usage in the context of Kurikulum Merdeka. Differentiated learning, which is emphasized in this curriculum, encourages the use of various media that align with students' needs, learning styles, and interests.

Based on these considerations, this study aims to investigate the effect of using Wordwall application on the vocabulary mastery of third grade students at SDN Setonopande 1 Kediri. It is expected that the findings of this study can contribute to more effective vocabulary teaching strategies and support the implementation of interactive media within the framework of Kurikulum Merdeka.

METHOD

This study used a quantitative approach with a pre-experimental design, specifically the one-group pre-test and post-test design. The purpose of this method was to measure the effect of using the Wordwall application on students' vocabulary mastery by comparing their scores before and after the treatment. The research was conducted at SDN Setonopande 1 Kediri and carried out over a period of three weeks in April 2025.

The population in this study consisted of all third-grade students at SDN Setonopande 1 Kediri, totaling 27 students in a single class. Because the number of students was less than 100 and formed a homogeneous group, the researcher used total sampling, meaning all students were involved as the research sample.

The data collection in this study was conducted through objective vocabulary tests administered as a pre-test and post-test. Both tests consisted of 20 items measuring students' vocabulary mastery in terms of form (spelling), meaning (understanding), and use (application in sentences). The materials tested were focused on common vocabulary from the themes "Things Around the Kitchen" and "Classroom Objects." During the treatment sessions, students engaged in vocabulary learning using the Wordwall application through various interactive game templates such as anagram, word search, spin the wheel, complete the sentence, and open the box. These activities were carried out in groups and aimed to foster engagement and participation among students.

The data analysis involved two stages. First, a normality test was conducted using the Shapiro-Wilk method. Since the data did not follow a normal distribution, the researcher applied the Wilcoxon Signed-Rank Test, a non-parametric statistical test suitable for paired samples. This test was used to analyze whether there was a statistically significant difference

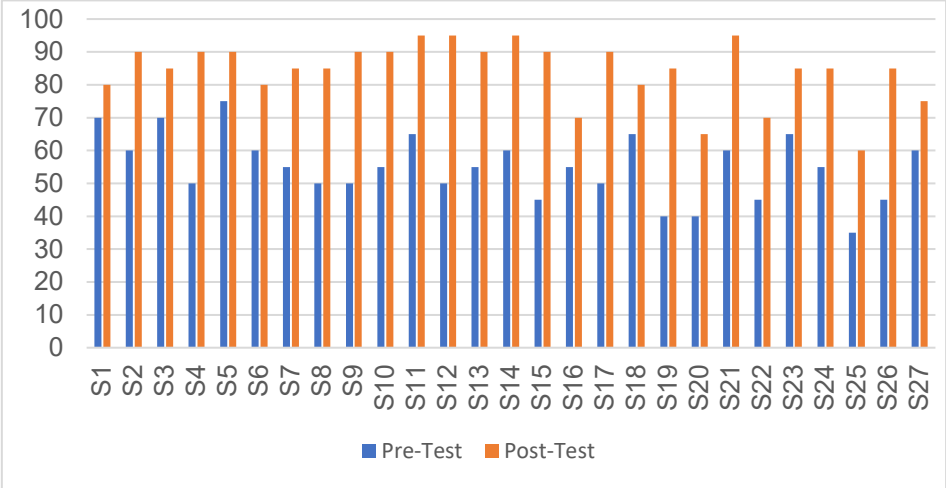
between the students' vocabulary scores before and after the treatment. Additionally, the researcher calculated the effect size using Cohen's formula to determine the magnitude of the treatment effect.

RESULT AND DISCUSSION

In this section, the researcher presents the students' vocabulary achievement before and after taught by using Wordwall apps. To provide a clearer visualization of the students' vocabulary achievement, a diagram comparing the pre-test and post-test scores is also presented. Furthermore, the data analysis process was conducted using SPSS version 23 to calculate and generate the required scores that is Normality Test and Wilcoxon Signed-Rank Test.

1. Students' Vocabulary Scores

Diagram 1. Students Pre-test and Post-test Scores Comparison



From the diagram above, it is clear that students' scores on the post-test were generally higher than their scores on the pre-test. The blue bars show the pre-test scores, while the orange bars show the post-test scores. Most students experienced an increase in their scores after the treatment. Although some students did not show significant changes or experienced a slight decrease, the overall results showed a positive increase in vocabulary mastery.

2. Normality Test

Table 1. The Normality Test

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.101	27	.200*	.978	27	.814
Posttest	.236	27	.000	.872	27	.003
*. This is a lower bound of the true significance.						

a. Lilliefors Significance Correction

Based on the table, the pre-test significance value is 0.814, which is greater than 0.05. Indicating that the pre-test data are normally distributed. On the contrary, the post-test has a significance value of 0.003, which is less than 0.05. As a result, the post-test data are not normally distributed. In conclusion, the data of this study didn't follow normal distribution.

3. Wilcoxon Signed Rank Test

Table 2. The Rank Test

		N	Mean Rank	Sum of Ranks
Posttest - Pretest	Negative Ranks	0[a]	.00	.00
	Positive Ranks	27[b]	14.00	378.00
	Ties	0[c]		
	Total	27		
a. Posttest < Pretest				
b. Posttest > Pretest				
c. Posttest = Pretest				

The table shows that all 27 students experienced an increase in their post-test scores compared to their pre-test scores. Specifically, there were 27 positive ranks, 0 negative ranks, and 0 ties. This indicates that every student benefited from the intervention, as none of them had a decrease or no change in their vocabulary scores. The mean rank for the positive differences was 14.00, and the total sum of positive ranks was 378.00. These results suggest a consistent upward trend across the entire sample, strengthening the initial indication that the Wordwall application positively increasing students' vocabulary acquisition

Table 3. The Wilcoxon Signed Rank Test

Test Statistics[a]	
	Posttest - Pretest
Z	-4.552[b]
Asymp. Sig. (2-tailed)	.000
a. Wilcoxon Signed Ranks Test	
b. Based on negative ranks.	

The table shows that the Z score obtained is -4.552, with a corresponding Asymptotic Significance (2-tailed) value of 0.000. Since this p-

value is far below the threshold of 0.05, it can be concluded that the observed difference between the pre-test and post-test scores is statistically significant. Based on these results, the null hypothesis Ho is rejected, while the

$$r = \frac{Z}{\sqrt{N}}$$
$$= \frac{4.552}{\sqrt{27}}$$
$$= \frac{4.552}{5.196}$$
$$= 0.876$$

alternative hypothesis Ha is accepted. These findings confirm that the Wordwall application significantly contributes to vocabulary improvement among third grade students.

To determine the magnitude of the intervention's impact, the effect size was calculated using the formula proposed by Cohen (1988):
The details:
r = effect size,
Z = test statistic from the Wilcoxon test,
N = number of observations (pairs).

According to Cohen's benchmarks (1988), an effect size of 0.876 is classified as large, indicating a strong and substantial impact of the intervention on the measured outcome. This magnitude far exceeds the threshold of 0.5, which Cohen defines as a large effect, and suggests that the use of the Wordwall application had a powerful and practically meaningful influence on students' vocabulary achievement.

The results of this study showed a significant increase in students' vocabulary mastery after using the Wordwall application, with the mean score rising from 55 to 84.25. This finding is aligned with Mayer's Cognitive Theory of Multimedia Learning (2009), which emphasizes that learning is more effective when information is delivered through both verbal and visual channels. Wordwall's interactive features support this theory by combining text, images, and game-based elements to incrase vocabulary mastery.

The effectiveness of Wordwall found in this study is also in line with previous research. Ajisoko (2020) found that Duolingo, a gamified language-learning app, significantly improved vocabulary acquisition and motivation among students. Although different in platform, both Duolingo and Wordwall share interactive and visual learning principles. Similarly, Nugroho et al. (2012) demonstrated that flashcards could increase elementary students' vocabulary scores from 45.70 to 80.13. Flashcards provide visual context, much like Wordwall's matching and picture-based features.

Moreover, Putri et al. (2024) revealed that Wordwall improves students' writing, particularly vocabulary usage. While their study focused on

high school students and writing ability, it supports the idea that Wordwall enhances word choice and usage components directly related to vocabulary knowledge. Likewise, Purwanti et al. (2024) found that Wordwall improved reading comprehension through vocabulary mastery, showing that vocabulary acts as a foundation across language skills. These previous findings reinforce the result of this research: that vocabulary is a core component of language mastery, and Wordwall serves as an effective medium for developing it.

From a curriculum perspective, the use of Wordwall also aligns with the Merdeka Curriculum's principle of differentiation. This curriculum encourages teachers to adapt learning materials and strategies to the needs, interests, and learning styles of students. Wordwall, with its customizable templates and visual features, supports this approach by allowing teachers to create games suited to students' level and context. Therefore, it not only supports students' vocabulary growth but also helps implement the national curriculum more effectively.

In comparison to previous studies, this research offers a specific contribution by focusing on third-grade students an early stage where vocabulary development is essential but often overlooked. Most earlier studies used Wordwall with older students and broader language outcomes. This study fills that gap by proving that even younger learners can benefit significantly from the same technology, especially when the activities are adapted to their developmental level.

CONCLUSION AND SUGGESTION

This study concludes that the use of the Wordwall application has a significant and positive effect on the vocabulary mastery of third-grade students at SDN Setonopande 1 Kediri. The purpose of this study was to determine whether Wordwall could help overcome students' difficulties in learning English vocabulary, particularly in spelling, understanding word meanings, and using words in context. The findings show that before the implementation of Wordwall, students generally had low vocabulary mastery, which limited their ability to understand instructions and communicate effectively in class. After the treatment, students demonstrated considerable improvement, indicating that Wordwall successfully facilitated vocabulary learning through its interactive and engaging features.

The students' increased ability to recognize and use English vocabulary can be attributed to the game-based activities provided by Wordwall, such as spin the wheel, word search, and matching exercises. These features helped create a more enjoyable learning atmosphere, fostered active student participation, and improved engagement. As a result, students became more confident and responsive during the learning process. In line with multimedia learning theory, the combination of visual, auditory, and interactive elements in Wordwall supports better vocabulary retention

and understanding among young learners. Therefore, Wordwall has proven to be a valuable digital tool in supporting elementary-level English instruction.

However, this study is not without limitations. It was conducted in only one class with a relatively small number of participants, and the treatment period was short. Additionally, the study did not involve a control group for comparison. These limitations restrict the generalizability of the findings and indicate the need for further research to validate the results in broader and more diverse contexts.

Based on these findings, several suggestions are proposed. For English teachers, it is recommended to integrate Wordwall or similar digital applications into vocabulary teaching, especially in primary education where students are more responsive to visual and playful learning methods. Teachers should ensure proper preparation before implementation, including selecting appropriate game templates, preparing content aligned with learning objectives, and checking technical readiness such as internet access and devices.

For future researchers, it is suggested to conduct similar studies with a larger sample and in different educational settings to increase generalizability. Future research could also involve a control group and extend the treatment period to examine the long-term effects of Wordwall on vocabulary retention. Furthermore, researchers are encouraged to explore the use of Wordwall in developing other language skills such as reading, writing, and grammar to understand its broader impact in English language teaching.

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