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# Enhancing Vocabulary Mastery Using Audiovisual Learning Wordwall

**Tri Jayanti[1*], Aliva Rosdiana[2]**
*Corresponding Authors' Email: 211320000582@unisnu.ac.id*
[12]Universitas Islam Nahdlatul Ulama Jepara, Indonesia
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**Abstract**

*This study examined Enhancing Vocabulary Mastery Using Audiovisual Learning Wordwall among fourth-grade elementary school students. Elementary schools faced challenges with limited instructional time for English language learning, creating a need for more efficient and engaging vocabulary teaching methods. This research used a pre-experimental design with one group taking both a pretest and posttest, including 33 fourth-grade students at SDN 1 Purwogondo. The intervention utilized Wordwall interactive audiovisual activities to teach vocabulary related to the "Be on Time" topic. Data was examined using descriptive statistics and the Wilcoxon signed-rank test. Results showed an important improvement in vocabulary mastery, with average scores increasing from 47.27 at the beginning to 81.21 at the end. The standard deviation decreased from 15.567 to 9.845, showing more consistent performance across different student ability levels. The findings suggested that Wordwall provided multiple ways for vocabulary learning, changing vocabulary study into an active, engaging process. The study added to evidence supporting technology-enhanced language learning for vocabulary development at the elementary level.*

***Keywords:*** *Vocabulary mastery, Audiovisual tools, Wordwall, Elementary education, Interactive learning*

## INTRODUCTION

English has become a dominant global language and serves as a crucial medium for international communication across education, business, and technology sectors. In numerous countries, including Indonesia, it is introduced at an early age to equip students with the skills needed to face global challenges (Mulis & Blouin, 2024). Currently many learners focus on grammar, without sufficient vocabulary, then they cannot construct proper sentences (Manda et al., 2022). However, limited vocabulary often prevent students' overall language development, especially given the limited instructional time allocated for English in elementary schools (Dewi et al., 2024);(Almuafa, 2025). Insights from teacher interviews indicate that insufficient instructional time poses challenges in teaching new words effectively. Without regular exposure to vocabulary, learners face difficulties in developing key language skills such as listening, speaking, reading, and writing. Listening, in particular, is instrumental in vocabulary development, as it connects students with pronunciation and contextual usage, building upon their prior knowledge (Fadzilah & Wahyuningsih, 2024)

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According to Piaget's (1976) theory, children aged 7–12 in the concrete operational stage benefit significantly from learning experiences that are tangible and interactive. Audiovisual media offer a valuable tool for supporting vocabulary development by integrating visual and auditory stimuli to make learning more engaging and effective (Imanulhaq & Ichsan, 2022). Media also serve as communication tools that facilitate interactive learning (Andriawan et al., 2024) and various studies highlight their positive effect on students' listening skills (Swari, 2023);(Az Zahrah & Anwar, 2023).

Wordwall, a digital learning platform, enables teachers to create interactive vocabulary activities that include images, sound, animations, and text-to-speech features. This innovative tool has proven effective in enhancing vocabulary retention and increasing student engagement through multisensory experiences (Alfares, 2025;Widodo et al., 2025;Rejabbilaisyah et al., 2024).

The foundation of English language proficiency, especially vocabulary mastery, in literacy and academic success helps communicators to express in various aspects of skills involving listening, reading, speaking, and writing. Therefore, strategies are needed to improve English skills. Several previous studies employed vocabularies as the research which were interested to be discussed since the difficulties of learning English were encountered in vocabulary learning process (AS & Apoko, 2023). The improvement of vocabulary with particular strategies employed is also carried out through specific strategies and various English skills including reading comprehension (Rahmah, Tahir, & Talib, 2023), listening comprehension (Syafiyyah, Pujiawati, & Ahmad, 2024), speaking skill (Suryanto, Imron, & Prasetyo, 2021), and writing (Dhuli, Lamo, & Larsari, 2023).

There are types of word knowledge as a conceptual framework to be known includes form, meaning, and use (Schmitt & Schmitt, 2020). These types are divided into two namely receptive element and productive element. The form of spoken word is identified in receptive element of what the word sounds like and in the productive element of how the word is pronounced. In the written form, it is identified in the receptive element of what the word looks like and in the productive element of how the word is spelled. The form of word parts concerns to what word parts are recognizable in receptive element and what word parts are needed to explain meaning productive element. The meaning word is categorized into form and meaning, concept and referents, and associations. In the form meaning of receptive element, it asks about the meaning of word signal; and the in the productive element, it asks about whether a word form can be expressed this meaning. The concept meaning is a concept in the receptive element and the way of a word refer to in the productive element. When a word is associated to idea is addressed to receptive element and the use of word addressed to productive element. The correlation to the use of word is categorized in the grammatical functions, collocation, and, constraints on use. In the receptive element, grammatical function concerns to the pattern occurred as receptive element and the use of grammatical pattern as productive element. So does in collocation word. Then, a word in a constraints of use concerns to where, when and how often particular words are met as receptive element and are used as productive element.

Several researchers have found the essential of improving English mastery using strategy with learning media (Azura, 2024), digital media (Salam, et al., 2023), social media (Asih, 2024), and game digital media (Sakkir, Azis, & Jabu, 2023). The application of wordwall has been conducted when pandemic period occurred around the world and changed the system of education in Indonesia (Pradini & Adnyayanti, 2022). Wordwall as a learning media is commonly employed

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in English teaching-learning (Syahrir, Noni, & Munir, 2024). Several teachers believe that wordwall media enable students to learn English, especially vocabulary, effectively (Bandjarjani & Efrata, 2023). In addition, web based wordwall media equipped by audiovisual (Kaharuddin, A, Sari, & Tati, 2019) is able to affect students understanding to know how to pronounce beside spelling (Iahiyati, Rohmah, & Hamamah, 2023).

This study examines the effectiveness of Wordwall as an audiovisual tool to improve vocabulary mastery among fourth-grade students at SDN 1 Purwogondo. Utilizing a pre-experimental one-group pretest-posttest design, the research measures the impact of Wordwall on students' vocabulary acquisition through lessons centered on the topic "Be on Time." The study aims to address existing gaps in understanding the role of digital tools in language learning and provides practical insights for educators on leveraging such technologies in elementary-level English instruction. The findings are expected to contribute valuable theoretical and practical recommendations for advancing vocabulary teaching and learning strategies.

## METHOD

The researcher used a quantitative research method, which involves data collection, analysis, and interpretation of quantifiable data to test the hypotheses generated in the study(Ghanad, 2023). Quantitative research uses numerical data to generate structured information (Gulo et al., 2024). The pre-experimental design was chosen because the researcher did not randomly select classes but instead used a single class as the research sample, without a control group for comparison (Daulay & Harahap, 2024).

This pre-experimental approach allowed the researcher to observe improvements in students' vocabulary after using Wordwall as a learning tool. The design aligns with the research objective of determining whether Wordwall aids in vocabulary acquisition. The study specifically investigated how Wordwall's audiovisual features can enhance the learning experience and improve vocabulary mastery.

Pre-test, also often referred to as a pre-test, is an assessment conducted before the teaching material is presented with the specific purpose of determining the extent to which students have already mastered the material that will be taught. This evaluation serves as a baseline measurement of students' initial knowledge and skills prior to instruction. The test content must be directly related to the upcoming teaching material, allowing teachers to identify students' existing knowledge gaps and strengths. By administering a pre-test, educators can tailor their instructional approaches to address specific learning needs and establish a reference point for measuring subsequent progress. Post-test, more widely known as the final test, is conducted at the conclusion of the learning process for a particular material. Its primary aim is to assess the extent of students' comprehension of the important concepts that have been taught. The post-test content directly corresponds to the material that students have previously learned during instruction. By comparing the results of the pre-test and post-test, teachers can effectively evaluate whether students demonstrate improved understanding after the learning process. If students show better comprehension following instruction, the teaching program is considered successful, providing valuable feedback on the effectiveness of the instructional methods employed (Magdalena et al., 2021).

This research was conducted at SDN 1 Purwogondo, located in Purwogondo Village RT. 08 RW. 02, Kalinyamatan District, Jepara, Central Java. The participants were 33 fourth-grade

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students. The use of a single class for this study is consistent with the one-group pretest-posttest design, where observations are made before (pre-test) and after (post-test) the experimental treatment (Rahmawati & Hardini, 2020).

The one-group pretest-posttest design was appropriate for this study because the primary research question was to determine whether Wordwall enhances vocabulary mastery, not to compare different teaching methods. Practical constraints, such as limited available classes with similar characteristics and school administration preferences, made the use of a single class the most feasible approach.

This research procedure is this study conducted during on February 2025, the research process consisted of four main steps implemented across four meetings. On February 3, 2025, the researcher explained the research to students and administered the pre-test to determine their initial ability in mastering vocabulary related to the "Be on Time" material. This material was chosen based on discussion with SDN 1 Purwogondo teacher. The teacher recommended this material because it suitable with student needs and in accordance with existing curriculum materials. On February 10, 2025, the researcher taught students about "Be on Time" vocabulary and used Wordwall's spinning wheel quiz to reinforce students' understanding. The selection of the spinning wheel activity in the first meeting aimed to introduce new vocabulary in an engaging and interactive way. On February 17, 2025, the researcher reviewed what students had learned and used Wordwall's open-the-box quiz to train students to recall and use vocabulary in context. This activity was chosen to provide variety in learning and deepen students' understanding. Finally, on February 24, 2025, the researcher administered the post-test to students to see how much their vocabulary mastery had improved. The lesson plan for each session was carefully designed to include Wordwall activities that support vocabulary learning.

## FINDINGS AND DISCUSSION

### Findings

Before conducting the research, the researcher first coordinated with the school authorities, including the principal and the English teacher, to obtain permission and support for the implementation of the study. The research was carried out at SDN 1 Purwogondo and involved one fourth-grade class as the research sample. It was conducted over four meetings in February 2025, starting from February 3 to February 24, 2025. This study used wordwall as the learning media to examine its effectiveness in improving students' English vocabulary mastery, specifically on the topic "Be on Time," which was selected based on discussions with the teacher to ensure its relevance to the curriculum and the students' learning needs. To support this study, documentation of the learning activities during the implementation is presented in the following image:

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**Figure 1. Implementation of the "Open the Box" quiz feature through wordwall.**

**Figure 2. Implementation of the assessment session.**

**Figure 3. Implementation of the "spinning wheel" quiz feature through wordwall.**

**Figure 4. Collaborative learning through small group discussions.**

**Figure 5. Talking Chips activity, where only the student holding the marker is allowed to answer the question.**


**Figure 6. Example of an interactive Wordwall media used to enhance vocabulary mastery.**

After the treatment, the pretest and posttest results for grade 4 at SDN 1 Purwogondo were obtained as follows:

**Table 1. Student Name List**

| NAME | PRETEST | POSTTEST |
|---|---|---|
| AKE | 55 | 90 |

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| | | |
|---|---|---|
| AFA | 40 | 80 |
| ASA | 30 | 75 |
| AZK | 55 | 75 |
| ANP | 35 | 85 |
| AZ | 60 | 75 |
| ANA | 55 | 90 |
| AKS | 20 | 95 |
| BSN | 30 | 75 |
| DFM | 55 | 75 |
| DAA | 60 | 100 |
| DAF | 20 | 75 |
| DTZ | 25 | 75 |
| ESP | 45 | 65 |
| ENH | 45 | 85 |
| FRA | 60 | 95 |
| FRJ | 55 | 90 |
| IKNA | 65 | 85 |
| KEAR | 55 | 90 |
| LSN | 35 | 90 |
| MRK | 35 | 75 |
| MF | 55 | 65 |
| MFR | 40 | 70 |
| MNA | 35 | 75 |
| MSAP | 80 | 100 |
| NNN | 55 | 75 |
| NHA | 30 | 75 |
| NSR | 35 | 75 |

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| | | |
|---|---|---|
| NA | 40 | 80 |
| RAB | 55 | 75 |
| SARP | 75 | 75 |
| SKN | 50 | 75 |
| SR | 75 | 100 |

**Pre-Test and Post-Test Procedure**

To evaluate the impact of the learning intervention, the researcher conducted a pre-test before the treatment and a post-test after the last session. The test consisted of 20 multiple-choice questions designed to assess students' understanding of vocabulary related to the given topic. These instruments had been reviewed and validated by English language education lecturers and classroom teachers to ensure the accuracy and relevance of the test items. Data analysis was carried out using SPSS version 30, and both descriptive and inferential statistical methods were applied.

**Table 2. Descriptive Statistics**

**Descriptives**

**Descriptive Statistics**

| | N | Range | Minimum | Maximum | Sum | Mean | | Std. Deviation | Variance |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Statistic |
| pretest | 33 | 60 | 20 | 80 | 1560 | 47.27 | 2.710 | 15.567 | 242.330 |
| postest | 33 | 35 | 65 | 100 | 2680 | 81.21 | 1.714 | 9.845 | 96.922 |
| Valid N (listwise) | 33 | | | | | | | | |

Based on the descriptive statistical analysis of 33 students, it was found that there was a notable improvement in students' vocabulary mastery after using wordwall. The average pre-test score was 47.27 with a standard deviation of 15.567, while the post-test average increased to 81.21 with a lower standard deviation of 9.845. This result indicates that the learning intervention not only raised the overall scores but also reduced score variability among students. The variance decreased significantly from 242.330 to 96.922, showing that students' achievement became more consistent. In addition, the minimum score improved from 20 to 65, and the maximum score increased from 80 to 100, reflecting significant progress in individual performance.

**Table 3. Test of Normality**

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**Tests of Normality**

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| pretest | .175 | 33 | .012 | .956 | 33 | .196 |
| postest | .281 | 33 | <.001 | .879 | 33 | .002 |

a. Lilliefors Significance Correction

The Shapiro-Wilk test was employed in this study due to the relatively small sample size of fewer than 50 participants, as recommended by (Yirssie et al., 2023) The normality assessment criterion relies on the significance value, where data is considered normally distributed when this value exceeds 0.05 (Sakamurti et al., 2024).

Statistical analysis conducted using SPSS version 30 revealed that the pretest data yielded a significance value of 0.196 (> 0.05), while the posttest data demonstrated a significance value of 0.02 (< 0.05). According to the established criteria, data can be classified as normally distributed when the significance value surpasses the 0.05 threshold. The comparative analysis of both testing phases indicated that one of the two assessments produced a significance value below 0.05. This finding confirms that the dataset violates the assumption of normal distribution. Given the non-normal distribution of the data, the analysis proceeded with the Wilcoxon test as an appropriate non-parametric alternative for this condition.

**Table 4. Test of wilcoxon**

**Test Statistics[a]**

| | posttest - pretest |
|---|---|
| Z | -4.952[b] |
| Asymp. Sig. (2-tailed) | <.001 |

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

The results presented in Table 3 demonstrate the findings from the Wilcoxon signed-rank test, which examined the statistical significance between pretest and posttest vocabulary scores. The analysis revealed an asymptotic significance (2-tailed) value of 0.001, which falls considerably below the established alpha level of 0.05. This statistically significant result provides compelling evidence that the implementation of Wordwall as an audiovisual learning tool significantly enhances students' vocabulary mastery. The substantial difference between pre- and post-intervention scores confirms the effectiveness of this digital platform in facilitating vocabulary acquisition.

## Discussion

The findings of this study clearly demonstrate the effectiveness of Wordwall as an audiovisual tool in enhancing vocabulary mastery among fourth-grade elementary school students. The significant improvement in students' vocabulary scores, from a pre-test average of 47.27 to a

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post-test average of 81.21, confirms that the intervention had a positive impact on students' learning outcomes. The interactive nature of Wordwall activities, such as the spinning wheel and open-the-box quizzes used in this study, created an engaging learning environment, transforming the traditionally passive process of vocabulary learning into an active and enjoyable experience. As observed during the implementation phase, students showed increased participation and enthusiasm when interacting with the Wordwall activities.

This is consistent with findings from (Ilahiyati et al., 2023) who noted that technology-based media, especially games, positively impact vocabulary learning. The reduction in score variability among students (with the standard deviation decreasing from 15.567 to 9.845) suggests that Wordwall was beneficial for students across different ability levels. This finding is particularly important, as it indicates that audiovisual tools like Wordwall can help narrow the achievement gap in diverse classrooms, making vocabulary learning more accessible to all students regardless of their initial proficiency level. This supports the conclusion by (Nurammida et al., 2024) that Wordwall games significantly affect the mastery of English vocabulary among students. The audiovisual elements of Wordwall played a crucial role in its effectiveness. The combination of visual stimuli (colorful images, animations, and text) with audio components (pronunciation) This multi-sensory approach is supported by (Chiriac, 2020) research, which emphasized that using images and sound together is the most effective way to learn a foreign language, especially for building vocabulary. Furthermore, the gamified nature of Wordwall activities contributed significantly to maintaining students' interest and motivation throughout the learning process. The spinning wheel and open-the-box quizzes introduced elements of challenge, surprise, and competition that made vocabulary learning more engaging.

This aligns with (Widodo et al., 2025) findings on the influence of Wordwall game media on students' creativity and conceptual understanding. The improvement in minimum scores from 20 to 65 and maximum scores from 80 to 100 indicates that both struggling students and high achievers benefited from the intervention. This suggests that Wordwall can be effectively used as a differentiated instruction tool that accommodates various learning styles and preferences within a single classroom setting. As noted by (Syahrir et al., 2023), Wordwall has proven effective in improving vocabulary mastery across multiple indicators, including pronunciation, spelling, and meaning comprehension. The collaborative learning approach employed during the implementation, including small group discussions and the Talking Chips activity, complemented the Wordwall activities by providing students with opportunities to use the newly learned vocabulary in communicative contexts. This combination of technology-enhanced learning and collaborative activities created a comprehensive learning environment that supported vocabulary acquisition through both receptive and productive language skills.

However, it is important to acknowledge certain limitations of this study. The pre-experimental design without a control group makes it challenging to isolate the effects of Wordwall from other potential influencing factors. Additionally, the short duration of the intervention (four weeks) may not capture the long-term retention of the vocabulary learned through Wordwall activities. Future research could address these limitations by employing experimental designs with control groups and conducting delayed post-tests to assess vocabulary retention over time. Despite these limitations, the findings of this study provide compelling evidence for the effectiveness of Wordwall as an audiovisual tool in enhancing vocabulary mastery among elementary school students. The significant improvement in vocabulary scores and the

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observed increase in student engagement suggest that incorporating interactive digital tools like Wordwall into vocabulary instruction can help address the challenges of limited instructional time and student motivation in English language learning at the elementary level.

## CONCLUSION

The Implementation of Wordwall as an audiovisual media significantly improved vocabulary mastery among fourth-grade students at SDN Purwogondo. Research findings show a substantial improvement in students' vocabulary scores, with the pre-test average score increasing from 47.27 to 81.21 on the post-test, indicating that Wordwall's interactive features foster a more engaging and effective learning environment. The decrease in score variability among students suggests that this approach benefits learners across different ability levels, potentially helping to reduce achievement gaps in diverse classrooms.

This study highlights the importance of incorporating innovative teaching methods to address vocabulary teaching challenges in elementary education. The combination of visual and auditory elements in Wordwall activities provides multiple pathways for vocabulary acquisition, catering to different learning preferences and styles. The gamified nature of the activities enhances student motivation and participation, transforming vocabulary learning from a passive to an active process.

For pedagogical practice, it is recommended that English teachers regularly integrate audiovisual media such as Wordwall into their teaching strategies to further enhance students' language skills and maintain their motivation in learning English vocabulary. However, it should be noted that technology should complement, not replace, other effective teaching methods. These findings emphasize the importance of a differentiated approach to teaching, where Wordwall is used as one of several strategies to accommodate various learning styles.

For future research, it would be valuable to conduct longitudinal studies to assess the long-term retention of vocabulary learned through Wordwall activities and to explore how such tools can be integrated into broader curricula across different grade levels. Additionally, comparative studies examining the effectiveness of different digital tools for vocabulary instruction would provide valuable insights for educational technology implementation.

In conclusion, the findings of this study contribute to the growing body of evidence supporting the effectiveness of technology-enhanced language learning, particularly for vocabulary acquisition at the elementary level. By leveraging the engaging and interactive features of tools like Wordwall, educators can create more effective and enjoyable learning experiences that help students build the strong vocabulary foundation necessary for overall language proficiency.

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