

THE EFFECTIVENESS OF WORDWALL LEARNING MEDIA ON INDONESIAN LANGUAGE LEARNING OUTCOMES OF GRADE III STUDENTS OF MI MA'ARIF KUMPULREJO 02 SALATIGA

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Abstract

This study aims to examine the effectiveness of Wordwall, a digital game-based learning platform, in improving the ability of third-grade students to construct simple sentences in Indonesian language learning. The research was motivated by observed difficulties among students in mastering sentence structure, often exacerbated by the lack of engaging and interactive learning media in traditional classrooms. Using a quasi-experimental design with pretest-posttest and control groups, data were collected from 47 students at MI Ma'arif Kumpulrejo 02 Salatiga. The experimental group received instruction using Wordwall, while the control group followed conventional teaching methods. Data collection instruments included multiple-choice tests that underwent rigorous validation procedures to ensure reliability, difficulty level, and discrimination power. Findings revealed that the experimental group significantly outperformed the control group, as demonstrated by higher posttest scores, a significant result in the independent sample t-test, and an N-Gain score of 73.08%, categorized as effective. These results suggest that Wordwall fosters improved engagement, comprehension, and performance in language instruction. The study supports Bruner's constructivist theory and Skinner's behaviorist learning principles by emphasizing active participation and reinforcement. Furthermore, the results are consistent with previous studies that highlight the educational potential of game-based media in enhancing student achievement. The study contributes to the growing body of research on digital learning in elementary education and underscores the need for integrating interactive technology in language instruction. Future research is encouraged to explore long-term effects, application in other subjects, and comparisons with other digital platforms to further expand the understanding of educational technology's role in improving learning outcomes.

Keyword: Wordwall, Indonesian Language Learning, Learning Outcomes, Elementary Education, Educational Technology

INTRODUCTION

In recent years, improving student learning outcomes has become a major focus of global education reform, especially at the primary school level which plays an important role in shaping basic competencies, such as language, mathematics and social skills¹. Learning outcomes are considered the main indicator of educational success because they reflect students' mastery of the cognitive, affective, and psychomotor domains after going through the learning process². Learning outcomes reflect behavioral and intellectual changes as a result of students' active involvement in learning³. Education should foster not only knowledge, but also students' emotional maturity and practical skills⁴.

Along with the development of teaching methods, recent research emphasizes the importance of dynamic and student-centered approaches, especially in language learning. Passive learning models have been proven to often fail to produce optimal results, especially in Indonesian language learning^{5 6}. In many elementary schools in Indonesia, including MI Ma'arif Kumpulrejo 02 Salatiga, learning is still dominated by conventional approaches, such as the use of blackboards, textbooks, and lectures. This approach is less effective in meeting

¹ Anik Wakhidah and Adi Bandono, "Strategies for Improving the Quality of Learning Outcomes in Elementary Schools," *KnE Social Sciences* 2022 (2022): 377–85, <https://doi.org/10.18502/kss.v7i10.11240>.

² Edi Mulyana et al., "Efektifitas Media Pembelajaran Powtoon Untuk Meningkatkan Hasil Belajar IPS," *JIPSINDO (Jurnal Pendidikan Ilmu Pengetahuan Indonesia)* 10, no. 1 (2023): 1–9, <https://doi.org/10.21831/jipsindo>.

³ Almi Ranti Datu, Hetty Julita Tumurang, and Juliana Margareta Sumilat, "Pengaruh Motivasi Belajar Terhadap Hasil Belajar Siswa Di Tengah Pandemi Covid-19," *Jurnal Basicedu* 6, no. 2 (2022): 1959–65, <https://doi.org/10.31004/basicedu.v6i2.2285>.

⁴ Nursella, "EDUCARE : Jurnal Pendidikan Dan Kesehatan Pengaruh Penggunaan Media Pembelajaran Interaktif Terhadap Hasil Belajar Siswa SD" 2, no. Vol. 2 No. 1 (2024) (2024): 77–88.

⁵ Titien Suprihatien et al., "Meta-Analisis : Evaluasi Hasil Belajar Ranah Kognitif, Afektif, Dan Psikomotor Pada Pembelajaran Sinkronus Dan Asinkronus," *TEACHING : Jurnal Inovasi Keguruan Dan Ilmu Pendidikan* 3, no. 4 (2023), <https://api.semanticscholar.org/CorpusID:267328618>.

⁶ Zainudin and Ubabuddin, "Ranah Kognitif, Afektif Dan Psikomotorik Sebagai Objek Evaluasi Hasil Belajar Peserta Didik," *ILJ: Islamic Learning Journal (Jurnal Pendidikan Islam)* 1, no. 03 (2023): 1–17.

the needs of digital generation students, especially in subjects that demand conceptual understanding and active language production skills⁷.

One of the main problems in learning Indonesian in the lower grades is the low ability of students to construct grammatically correct and semantically meaningful sentences⁸. Based on the results of classroom observations and teacher interviews at MI Ma'arif Kumpulrejo 02, many students have difficulty in sentence structure, which has a negative impact on their writing and speaking skills. The limited use of learning media that supports visual, auditory and kinesthetic learning styles also exacerbates this condition. In addition, teachers have also not made much use of or are not accustomed to using digital media that can improve the quality of language learning.

To overcome these problems, educators are starting to adopt game-based learning platforms that can increase student interactivity and motivation⁹. One such platform is Wordwall, an online application that transforms exercises and quizzes into an engaging game format that is easily accessible through mobile phones and computers. Several studies¹⁰ reported that the use of digital games can significantly increase student interest and participation, especially at the early grade level. Wordwall¹¹ is a flexible platform that offers various templates such as matching games, multiple-choice quizzes, and sentence formation exercises that are highly suitable for language learning.

Wordwall's strength lies in the integration of game elements with learning objectives. Features such as immediate feedback, leaderboards, and student

⁷ V. Andriievska and D. Shinkaryova, "Digital & Media Literacy as a Condition for the Formation of the Digital Generation," *New Collegium* 3, no. 108 (2022): 50–54, <https://doi.org/10.30837/nc.2022.3.50>.

⁸ Dita Dwi Anggraini, Muh. Arafik, and Titis Angga Rini, "Pengembangan Modul Menulis Kalimat Efektif Untuk Siswa Kelas IV SD," *Jurnal Pembelajaran, Bimbingan, Dan Pengelolaan Pendidikan* 3, no. 2 (2023): 137–49, <https://doi.org/10.17977/um065v3i22023p137-149>.

⁹ Taryza Putri et al., "Efektivitas Penggunaan Media Pembelajaran Wordwall Untuk Meningkatkan Motivasi Belajar IPAS," 2025.

¹⁰ Putri Alfiah, Aulia Rahma, and Vika Nurul Mufidah, "Implementasi Teknologi Digital Dalam Pengelolaan Kelas Pada Pembelajaran Pendidikan Agama Islam" 3, no. 4 (2025): 110–20.

¹¹ Ardis Nur Irsyad Surahmawan et al., "Penggunaan Media Wordwall Sebagai Media Pembelajaran Sistem Pernafasan Manusia," *Pisces* 1 (2021): 95–105, <https://prosiding.iainponorogo.ac.id/index.php/pisces>.

performance tracking are proven to boost students' intrinsic motivation¹². Wordwall's flexibility and customizability allow its use across a wide range of subjects and learning objectives¹³. However, Wordwall has limitations, such as the need for a stable internet connection and its dominant function as an evaluation and practice tool, not as the main learning tool¹⁴. Therefore, the successful use of Wordwall is highly dependent on its proper integration into a comprehensive learning strategy.

Various studies have shown the effectiveness of Wordwall in improving student learning outcomes. proved that Wordwall is able to increase students' motivation and understanding in science and language subjects. The use of Wordwall has shown a positive impact on learning outcomes across different subjects and grade levels^{15 16}. However, most of these studies focused on higher levels or non Indonesian language subjects, so there is a gap in research related to the application of Wordwall for Indonesian language learning, especially in the aspect of composing sentences in low-grade students.

Based on this research gap, this study aims to examine the effectiveness of using Wordwall in improving sentence structure skills in third grade students of MI Ma'arif Kumpulrejo 02 Salatiga. Until now, not many studies have specifically examined how digital media such as Wordwall can overcome basic problems in language learning at the elementary school level, especially in religious or semi-formal educational institutions that have limited access to technology. Therefore, this study not only fills a void in the literature, but also evaluates the real-world

¹² Alla Bilova, "Implementing Enjoyable Learning Strategy With Wordwall in the Efl Classroom," *English and American Studies*, no. 20 (2023): 58–64, <https://doi.org/10.15421/382308>.

¹³ Rosyid Khoirul Nafian, Upita Ayu Widayanti, and Isna Rahmawati, "Penggunaan Media Wordwall Sebagai Evaluasi Pembelajaran IPAS Kelas IV SD Negeri 1 Gumul Jurnal Teknologi Pendidikan Dan Pembelajaran (JTPP)," *Jurnal Teknologi Pendidikan Dan Pembelajaran (JTPP)* 01, no. 04 (2024): 747–50.

¹⁴ Putri et al., "Efektivitas Penggunaan Media Pembelajaran Wordwall Untuk Meningkatkan Motivasi Belajar IPAS."

¹⁵ Ayu Nova Silalahi et al., "PENGARUH PENGGUNAAN MEDIA PEMBELAJARAN WORDWALL TERHADAP HASIL BELAJAR BAHASA INDONESIA SISWA KELAS I," *JURNAL RECTUM: Tinjauan Yuridis Penanganan Tindak Pidana* 4, no. 2 (2024): 783–94.

¹⁶ Isna Rafianti et al., "Pengaruh Media Pembelajaran Wordwall Terhadap Hasil Belajar Matematika Siswa SMA," *Wilangan: Jurnal Inovasi Dan Riset Pendidikan Matematika* 5, no. 4 (2024): 290–95, <https://doi.org/10.62870/wjirpm.v5i4.22449>.

applicability of a game-based learning tool in an environment with limited digital resources.

This study aims to determine whether the integration of Wordwall in Indonesian language learning can significantly improve students' learning outcomes, particularly in the aspect of sentence construction. The hypothesis proposed is that students taught with the help of Wordwall will obtain higher post-test scores than students who learn with traditional methods. The novelty of this study lies in the use of digital media which has not been widely utilized in the Indonesian rural primary school environment as well as its focus on linguistic competence at the sentence level a fundamental skill in further language development. Although the scope of this study is limited to grade III students in one educational institution, the results of this study are expected to make an important contribution to the application of learning technology in various educational contexts in Indonesia).

RESEARCH METHODOLOGY

This research is a quantitative study using a quasi-experimental approach¹⁷. This study aims to provide an overview of the effectiveness of Wordwall learning media in improving Indonesian language learning outcomes in third grade students of MI Ma'arif Kumpulrejo 02 Salatiga. The experimental design used is a pretest-posttest with control group design, where there are two groups, namely the experimental group using Wordwall media and the control group using conventional learning methods.

Data collection techniques in this study used tests and documentation. Tests were used as the main instrument to measure student learning outcomes. This test is in the form of multiple choice questions that are compiled based on basic competency indicators on the material of compiling simple sentences. The test was carried out in two stages, namely before treatment (pretest) and after treatment (posttest). Documentation was used as supporting data which included a

¹⁷ Prof Dr Sugiyono, *Metode Penelitian Kuantitatif Kualitatif Dan R&D* (M. Dr. Ir. Sutopo. S. Pd, ALFABETA, Cv, 2019).

list of student names, lesson plans, and documentation of learning activities in the classroom.

The tests used have gone through a trial process to ensure the validity, reliability, difficulty level, and differentiating power of the questions. Validity was tested using the Pearson Product Moment formula, while reliability was tested using the Cronbach's Alpha formula. The level of difficulty was calculated to determine the questions that were classified as easy, medium, or difficult, while the differentiating power was used to determine the extent to which the questions could distinguish between high and low ability students.

Data were collected through the following techniques:

1. Test (Pretest and Posttest): Tests were given before and after treatment to determine changes or improvements in students' Indonesian learning outcomes. The pretest aims to determine initial ability, while the posttest is used to measure learning outcomes after the learning process.
2. Documentation: Documentation was conducted to obtain supporting data related to the learning process, such as lesson plans (RPP), photos of classroom activities, and attendance lists of students who participated in the learning process.

Through data collection with tests and documentation, researchers can measure differences in learning outcomes between groups using Wordwall media and those using conventional learning methods. The results of the two groups were then analyzed using the Independent Sample t-Test statistical test with the help of SPSS software, and the N-Gain score was calculated to determine the effectiveness of using Wordwall media in learning.

RESEARCH RESULTS AND DISCUSSION

This study involved 47 students who were divided into two groups: the experimental group (22 students, class III B) who were treated using Wordwall, and the control group (25 students, class III A) who were taught using conventional methods. Based on the pretest data, both groups had almost equal initial scores. The average pretest score of the control group was 43.7, which

increased to 73.6 after following conventional learning. Meanwhile, the experimental group experienced a more significant increase, from a total score of 49.7 to 86.7 after Wordwall-based learning.

These results show that both learning approaches improved students' learning outcomes. However, the much bigger improvement in the experimental group shows that Wordwall has a real positive influence on students' achievement in composing simple sentences.

Before being used in the pretest and posttest, the test instrument in the form of 20 multiple-choice questions has gone through a series of feasibility tests, including validity, reliability, difficulty level, and differentiating power tests. This process aims to ensure that the instrument is truly capable of measuring student learning outcomes accurately and consistently.

1. Validity Test

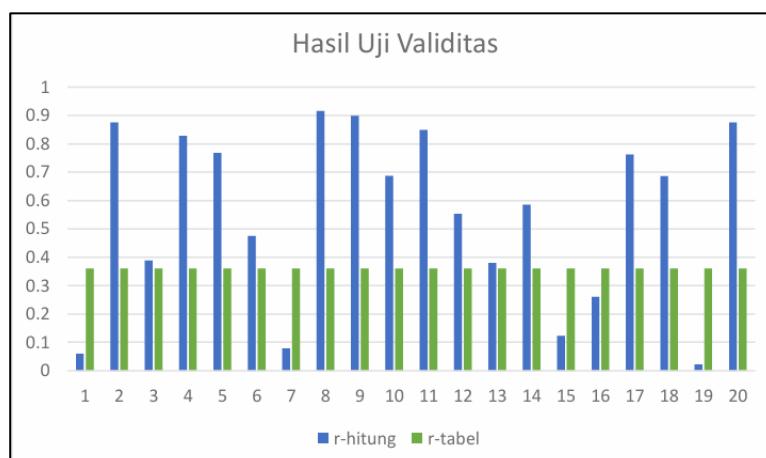


Figure 1. Diagram of Instrument Validity Test Results

Validity test was conducted using Product Moment correlation technique. Of the 20 items tested, 15 questions were declared valid, because they had a correlation value (r count) greater than r-table at the 5% significance level. Meanwhile, the other 5 items were considered invalid due to their low correlation value, and therefore, were not used in the main data collection.

2. Reliability Test

Table 1. Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	N of Items
.865	20

The reliability test was carried out using the Cronbach's Alpha formula, with a result of 0.865, which is included in the very high category. This shows that the test instrument has excellent internal consistency, so it can be trusted to measure student learning outcomes repeatedly or under different conditions.

3. Test Level of Difficulty

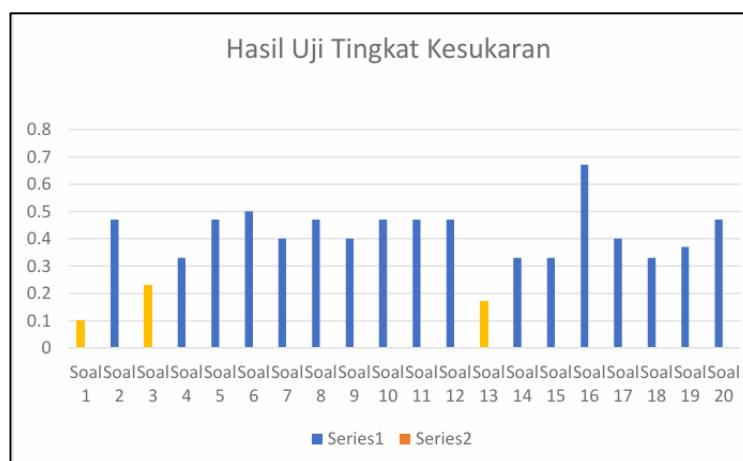


Figure 2. Diagram of the Test Results of Level of Difficulty

The difficulty index test is used to measure the proportion of students who answer correctly on each item. The criteria used are: 0.00-0.30 = difficult questions 0.31-0.70 = medium questions 0.71-1.00 = easy questions The results of the analysis show that most of the questions are in the medium category, which means that the questions are quite suitable for measuring student competence in general. Not too easy, but also not too difficult for grade III level.

4. Distinguishing Power Test

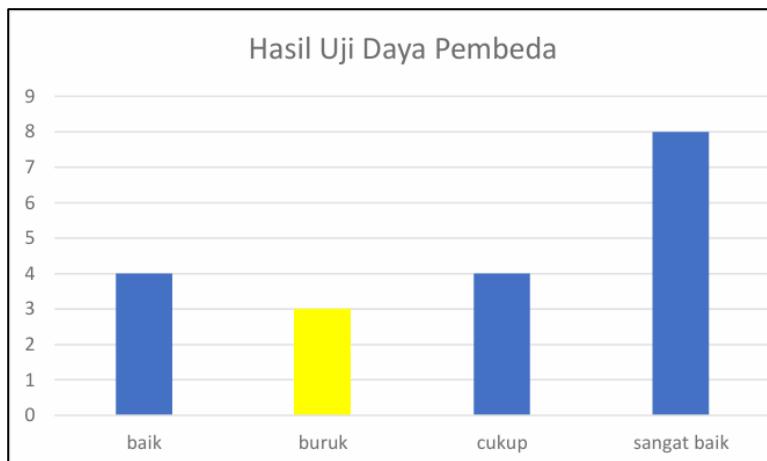


Figure 3. Diagram of Differentiated Test Results

The Distinguishing Power Test is conducted to determine the ability of each question to distinguish between high and low ability students. Differentiating power is calculated from the difference in the proportion of correct answers between the upper and lower groups. The analysis results show that: 8 questions had excellent differentiating power 4 questions were categorized as good 3 questions were fair 3 questions were poor, which were then not used in the final instrument.

These results indicate that most questions were able to effectively differentiate between high and low ability students. High discriminating power is important in an evaluation because it is able to assess students' actual abilities more accurately and fairly. Thus, the whole process of testing validity, reliability, difficulty level, and differentiating power indicates that the test instruments used in this study have met good quality standards and are suitable for use in the main data collection. The strength of this instrument provides a solid foundation for the validity of the quantitative findings in this study.

After the instrument has been tested through validity, reliability, level of difficulty, and distinguishing power, the next step is to conduct a prerequisite test which includes a normality test and a homogeneity test to ensure that the data is suitable for parametric analysis. After fulfilling the prerequisites, proceed with hypothesis testing, namely the Independent Sample t-Test to determine

significant differences between groups, as well as the N-Gain test to measure the effectiveness of increasing student learning outcomes after treatment using Wordwall media.

5. Normality Test

Table 2. Normality Test Results

Class	df	Sig
Pretest Control	25	.141
Control Posttest	25	.119
Experiment Pretest	25	.105
Experiment Posttest	25	.110

Based on the table, the significance value for the control class pretest is 0.141, which is greater than 0.05. For the experimental class, the significance value of the pretest is 0.105, also greater than 0.05. Furthermore, the significance value of the control class posttest is 0.119, and for the experimental class it is 0.110; both are also greater than 0.05. Thus, all data can be said to be normally distributed. Therefore, both the data in the experimental and control classes fulfill the assumption of normal distribution.

6. Homogeneity Test

Table 3. Homogeneity Test Results

	Sig
Based on Mean	.418
Based on Median	.470

Based on the output of Levene's Test with reference to Based on Mean, the significance value is 0.418, which is greater than 0.05. These results indicate that the variance between the experimental and control groups is homogeneous, so the null hypothesis (H_0) is accepted.

7. Independent Sample T Test

Table 4. Independent Sample T Test Results

	Sig. (2-tailed)
Equal variances assumed	.000
Equal variances not assumed	.000

Based on the data listed in the table, the significance value (Sig. 2-tailed) is 0.000, which is smaller than the significance limit of 0.05. Therefore, the alternative hypothesis (H_a) which states that there is an effect of using Wordwall media on student learning outcomes is accepted, while the null hypothesis (H_0) which states there is no effect is rejected. The difference in scores between the experimental and control groups proved significant based on the t-test results. This finding shows that the use of Wordwall media contributes positively to the improvement of students' Indonesian learning outcomes.

8. N Gain Test

Table 5. N Gain Test Results

Class	Control	Class	Experiment
Mean	51,8348	Mean	73,0844
Minimum	14,89	Minimun	49,06
Maximum	82,19	Maximum	100

Based on the data in the table, the average N-Gain value is 73.0844 (rounded to 73) for the experimental class, which is included in the effective category. Thus, it can be concluded that the implementation of the Wordwall platform as a learning media shows a good level of effectiveness in improving student learning outcomes. The improvement in student learning outcomes in the experimental group can be explained through Bruner's Constructivist Learning Theory, which emphasizes that learning is an active process of building new knowledge based on experience. Wordwall provides this experience through educational games that invite students to apply linguistic concepts in a meaningful context. In line with research ¹⁸ showed that the average N-Gain score for the experimental class was 65.32, categorized as moderately effective, not 73.0844. The findings showed that Wordwall's website-based learning media significantly affected learning outcomes, as evidenced by the t-test results with a sig value of 0.00, leading to the acceptance of the alternative hypothesis.

¹⁸ Maxsel Koro et al., "Efektivitas Media Pembelajaran Berbasis Website Wordwall Terhadap Hasil Belajar Siswa Kelas V Pada Mata Pelajaran IPAS Materi Ekosistem Yang Seimbang Di SDN Batuplat 1," *Fondatia* 8, no. 2 (2024): 486–97, <https://doi.org/10.36088/fondatia.v8i2.4856>.

Therefore, while the Wordwall platform is effective, the N-Gain value reported in this study is lower than the stated 73.

Research by^{19 20 21} shows that Wordwall is able to improve student motivation and learning outcomes at various levels of education and subjects. The similarity of these results strengthens the generalization that Wordwall is an effective and adaptive learning media in various educational contexts. The application of Wordwall as a learning medium also resulted in a significant improvement in student learning outcomes, with the experimental group achieving an average score of 78.24 compared to 64.58 in the control group. The substantial difference of 13.44 and Sig. t-test value of 0.000 confirmed the effectiveness of Wordwall. While the N-Gain value of 73.0844 indicated a good level of effectiveness, this study mainly emphasized the overall improvement in learning outcomes²².

Practically, this study provides recommendations for digital media such as Wordwall to be integrated in the daily learning process. Teachers can utilize it for formative evaluation, enrichment, as well as interactive activities that encourage student participation. Wordwall also allows teachers to customize questions to students' needs and monitor results directly. From a pedagogical perspective, these results encourage a shift from teacher-centered learning methods to student-centered and technology-based learning. The interactive and fun classroom atmosphere that Wordwall facilitates is proven to encourage higher student engagement and achievement. Although Wordwall is proven to be effective, there are some limitations. Using Wordwall requires stable internet

¹⁹ Kunti Shouma Tsaniya et al., "Pengaruh Penggunaan Media Pembelajaran Wordwall Untuk Meningkatkan Keaktifan Belajar Peserta Didik Pada Mata Pelajaran Pendidikan Pancasila Kelas Iv Sdn Tlogosari Wetan 01 Semarang," *Didaktik : Jurnal Ilmiah PGSD STKIP Subang* 9, no. 5 (2023): 1452–60, <https://doi.org/10.36989/didaktik.v9i5.2072>.

²⁰ Silalahi et al., "PENGARUH PENGGUNAAN MEDIA PEMBELAJARAN WORDWALL TERHADAP HASIL BELAJAR BAHASA INDONESIA SISWA KELAS I."

²¹ Rafianti et al., "Pengaruh Media Pembelajaran Wordwall Terhadap Hasil Belajar Matematika Siswa SMA."

²² Ariadi Jimmy, Débora, and Ahmad Eko Suryanto, "The Influence of Wordwall Learning Media on Student Learning Outcomes in the 2022/2023 Academic Year of the 2022/2023 Academic Year of Students' Learning Outcomes," *PARENTAS: Jurnal Mahasiswa Pendidikan Teknologi Dan Kejuruan* 10, no. 1 (2024): 8–13, <https://doi.org/10.37304/parentas.v10i1.14552>.

access, which is not necessarily available in all schools. In addition, Wordwall functions more as an evaluation and practice tool, not as the main medium for delivering material, so it needs to be accompanied by other conventional methods²³. Given the positive results, future research is recommended to test the long-term effects of Wordwall on students' memory. Apply to different subjects and levels. Comparing with other digital media. Exploring students' and teachers' perceptions of Wordwall use qualitatively.

Overall, the integration of Wordwall in Indonesian language learning is proven to improve students' learning outcomes in constructing simple sentences. The experimental group showed significant improvement compared to the control group. The statistical validity and educational effectiveness shown by Wordwall make it a feasible and potential learning media to be applied more widely in 21st century learning.

CLOSING

This study concludes that the use of Wordwall as a digital learning media significantly improves students' Indonesian learning outcomes, especially in the skill of composing simple sentences. The experimental group showed higher posttest scores and greater improvement in learning outcomes, as evidenced by the significant t-test results and the N-Gain score which falls into the effective category. The findings confirm the pedagogical value of integrating game-based interactive learning tools into basic education, which is in line with constructivist and behaviorist learning theories. This study contributes to the development of science in the field of educational technology by presenting empirical evidence regarding the effectiveness of Wordwall in a real classroom context. The study also provides practical implications for teachers and policy makers seeking innovative strategies to improve student engagement and achievement in language learning. Further research is recommended to explore the long-term impact, applicability to other subjects, or comparison with other digital platforms to

²³ Putti Larasati, Ida Bagus Putrayasa, and I N Martha, "Pemanfaatan Media Wordwall.Net Sebagai Media Evaluasi Dalam Pembelajaran Bahasa Indonesia," 2023, <https://doi.org/10.14421/njpi.2023.v3i3-3>.

deepen the understanding of how educational technology can transform students' learning experience.

Based on the results of the study which show that the use of Wordwall is effective in improving the learning outcomes of grade III students' Indonesian language, especially in the skill of composing simple sentences, it is recommended that teachers actively integrate interactive digital media such as Wordwall in the learning process as an evaluation tool and material enrichment. For wider educational practice, it is necessary to develop training on the use of Wordwall for teachers, especially in schools with limited access to technology. In addition, further research is recommended to explore the long term impact of using Wordwall on students' knowledge retention, its applicability to other subjects and different levels, as well as comparing its effectiveness with other digital learning media to broaden the insight into the contribution of technology in improving the quality of 21st century learning.

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