

The Impact of Applying *Wordwall* as a Learning Media for 8th-Graders' Vocabulary Mastery

Hilyatuts Tsaniyah¹⁾, Rahayu Kuswardani²⁾

^{1,2} Universitas Negeri Surabaya, Surabaya

Email: ¹hilyatuts.22056@mhs.unesa.ac.id ²rahayukuswardani@unesa.ac.id

ABSTRACT

This study was conducted with the aim of testing the impact of applying *Wordwall* as a learning media on eighth-grade students' vocabulary mastery, particularly on action verbs and temporal conjunctions in procedure texts. The research design used in this study was a quasi-experimental design involving 50 eighth-grade students. The data were collected using a vocabulary test as a research instrument. The instrument was validated by experts and tested for reliability before being administered to the experimental and control classes. The data were collected through six meetings. Four of the meetings were used to give treatment using *Wordwall* in the experimental class, while the control class was taught using the students' handbook. The data were analyzed through some steps and using an Independent Sample T-Test for hypothesis testing. The findings of this study showed that the students in the experimental class experienced a significant improvement in their vocabulary mastery after learning vocabulary using *Wordwall*. The t-test results indicated that there was a significant difference between the post-test scores of both classes ($p < 0.05$) with an effect size of 0.644, indicating a large effect. Therefore, the use of *Wordwall* has a positive impact on improving eighth-grade students' vocabulary mastery.

Keywords: Gamification, Vocabulary Mastery, Wordwall.

ABSTRAK

Penelitian ini dilakukan dengan tujuan untuk menguji dampak penerapan *Wordwall* sebagai media pembelajaran terhadap penguasaan kosakata siswa kelas delapan, khususnya pada kata kerja tindakan dan konjungsi temporal dalam teks prosedur. Desain penelitian yang digunakan dalam penelitian ini adalah desain kuasi-eksperimental yang melibatkan 50 siswa kelas delapan. Data dikumpulkan melalui tes kosakata yang diberikan sebagai pre-test dan post-test sebagai instrumen penelitian. Instrumen tersebut divalidasi oleh para ahli dan diuji reliabilitasnya sebelum diberikan kepada kelas eksperimen dan kontrol. Data dikumpulkan melalui enam pertemuan. Empat pertemuan digunakan untuk memberikan perlakuan menggunakan *Wordwall* di kelas eksperimen, sedangkan kelas kontrol diajarkan menggunakan buku pegangan siswa. Data dianalisis melalui beberapa langkah dan menggunakan Uji-T Sampel Independen sebagai pengujian hipotesis. Hasil penelitian ini menunjukkan bahwa siswa di kelas eksperimen mengalami peningkatan yang signifikan dalam penguasaan kosakata mereka setelah mempelajari kosakata menggunakan *Wordwall*. Hasil uji-t menunjukkan bahwa terdapat perbedaan yang signifikan antara skor post-test kedua kelas ($p < 0.05$) dengan besaran pengaruh 0.644, menunjukkan efek yang besar. Oleh karena itu, penggunaan *Wordwall* berdampak positif pada peningkatan penguasaan kosakata siswa kelas delapan.

Kata Kunci: Gamifikasi, Penguasaan Kosakata Wordwall.

INTRODUCTION

Vocabulary plays a crucial role in English language learning, as it forms the foundation for developing listening, speaking, reading, and writing skills (Nation, 2001). Without sufficient vocabulary mastery, students may experience difficulties in understanding texts, expressing ideas, and communicating effectively (Afidah & Machfudi, 2022).

Therefore, it is important for students to improve their vocabulary mastery, as this plays an important role in improving their English language skills.

However, the situation that often occurs in English classes in Indonesia is that students are less interested in learning English because there is a lot of unknown vocabulary (Nurammida et al., 2024). The above condition is one of the internal

factors that students encounter in learning English, which makes them lack of spelling, pronunciation, meaning, and choosing the right word according to the context. There are also external factors influenced by circumstances outside of the individual, such as the student's environment and lack of engaging methods used by teachers in the learning process (Wulandari et al., 2020).

The methods that are often used by teachers are conventional methods, such as memorizing English vocabulary, which is assessed by reciting it in front of the class (Sakkir et al., 2023). This condition requires teachers to be able to think of methods and learning media that combine with something interesting and innovative that can attract students' attention and improve their vocabulary mastery.

In this digital era, teachers can take advantage of technology in learning (Wulandari et al., 2025). There are many choices of learning media that utilize technology. One of the interesting and innovative ways that can be chosen and used by teachers is gamification. According to Deterding et al. (2011), gamification is the use of game design elements in non-game contexts, such as classrooms or learning activities, aimed at increasing student engagement. Using gamification for teaching can attract students' attention because they will not be bored staring at books, but will feel happy because they see new things in learning (Kapp, 2012). One of the gamification applications that teachers can use is *Wordwall*: a media that can be utilized to assist students in expanding their vocabulary (Sakkir et al., 2023).

Recent studies have increasingly explored the use of gamification-based applications to enhance vocabulary mastery in EFL contexts. Several studies have reported positive outcomes of implementing *Wordwall* in elementary and secondary classrooms (Amaliyah & Rahayu, 2023; Hasram et al., 2021; Pradini & Adnyayanti, 2022; Sakkir et al., 2023; Shabrina & Taufiq, 2023; Syamsidar et al., 2023). These studies commonly employed pre-experimental or one-group designs and

primarily focused on general vocabulary categories such as nouns, verbs, and adjectives, as well as descriptive texts.

For instance, Hasram et al., (2021) demonstrated that *Wordwall* significantly improved students' vocabulary performance and increased students' engagement. Similarly, Pradini & Adnyayanti (2022) found that *Wordwall* enhanced young learners' vocabulary achievement and motivation. While these findings underscore the pedagogical potential of *Wordwall*, most existing studies have relied on single-group designs without incorporating control groups, which limits the ability to determine its comparative effectiveness.

Moreover, limited research has specifically examined the use of *Wordwall* to support vocabulary development in procedure texts, particularly focusing on action verbs and temporal conjunctions among eighth-grade students. Given that these vocabulary elements are essential for constructing coherent procedural writing, the absence of comparative quasi-experimental evidence leaves a notable gap in the literature. Therefore, the present study aims to investigate whether there is a significant difference in vocabulary mastery between eighth-grade students taught using *Wordwall* and those taught using conventional methods, with a specific focus on action verbs and temporal conjunctions in procedure texts.

Based on this objective, the research question guiding this study is formulated as "Is there any significant difference in students' vocabulary mastery of action verbs and temporal conjunctions in procedure text after using *Wordwall*?" The novelty of this study lies in its use of a quasi-experimental design involving both experimental and control groups to provide stronger comparative evidence, as well as its specific focus on action verbs and temporal conjunctions in procedure text among eighth-grade EFL students, which remains limited in previous *Wordwall* research.

RESEARCH METHOD

This study employed a quasi-experimental design. According to Creswell (2012), a quasi-experimental design involves dividing students into groups not randomly and then giving them a treatment. The sample of this research was selected using purposive sampling. Purposive sampling is a non-probability sampling technique in which participants are selected based on specific criteria relevant to the research objectives. In this study, the selection was based on the English teacher's recommendations and the similarity of students' English proficiency levels. This study involved three eighth-grade classes in one of the private junior high schools in Sidoarjo. Among them, two classes were selected as the main samples because they met the established criteria. They were assigned as the experimental class and control class, consisting of approximately 50 students in total, with a mix of male and female students.

This research used quantitative instruments as research instruments, namely, pre-test and post-test items. The test items were used to answer the research question and consisted of 50 questions about procedure text, focusing on action verbs and temporal conjunctions. The test included four types of questions, namely multiple choice, matching, fill in the blank, and true or false items. To ensure the quality and appropriateness of the research instruments, the content validity of the instrument was assessed by two validators. Among the 50 questions analyzed, both validators categorized all items as relevant. After being calculated using Gregory's Formula (2016), the content validity coefficient obtained was 1. Therefore, the content validity of the instrument in this research was classified as very high. The reliability of the instrument was also analyzed by administering the instrument to another eighth-grade class, which consisted of 17 students, to determine whether the test items were suitable for use as a research instrument. The results of the try-out were calculated using the Cronbach's Alpha technique in SPSS,

which showed a value of .720, which was higher than .70. This indicates that the instrument has high reliability.

The data were collected in six meetings, which consisted of four treatment sessions and two test (pre-test and post-test) sessions. The data collected based on the test were analyzed using IBM SPSS Statistics 27 through some steps, namely: a normality test was conducted to determine whether the data were normally distributed or not, and the homogeneity test was conducted to determine whether the variances score of the experimental and control classes' post-test was equal. In addition, a paired sample t-test was used in this research to find out if there was an improvement between the pre-test and post-test of the experimental class. An independent sample t-test was also used in this study as a hypothesis test to determine whether there was a difference in vocabulary scores between the two classes. Additionally, the effect size of the data was also calculated to determine the magnitude of the treatment on the students' learning outcomes.

RESULTS AND DISCUSSION

1. Results

a. Normality Test

The normality of the data was tested using the Shapiro-Wilk test through IBM SPSS Statistics 27. This test was conducted to determine whether the data were normally distributed or not. The result of the normality test, as presented below.

Tabel 1. Test of Normality

Classes	Shapiro-Wilk		
	Statistic	df	Sig.
Pre-Test Experimental	.928	25	.076
Pre-Test Control	.967	25	.580
Post-Test Experimental	.956	25	.333
Post-Test Control	.936	25	.119

Based on the table above, the significant value (Sig.) for the experimental group pre-test was .076, while the control group pre-test was .580. Meanwhile, the significance value of the experimental group's post-test was .333,

while the control group's post-test was .119. Since all significance values (Sig.) were greater than 0.05, the data were normally distributed. Therefore, the hypothesis test can be conducted using parametric tests, namely the independent sample t-test.

b. Homogeneity of Variance Test

The homogeneity test was conducted using Levene's Test to examine the equality of variance between the groups. The data were analyzed using IBM SPSS Statistics 27, and the results are presented in the following table.

Tabel 2. Test Homogeneity of Variances

P O S T T E S T		Lavene Statistic	df1	df2	Sig.
	Based on Mean	33.942	1	48	.000
	Based on Median	33.316	1	48	.000
	Based on Median and with adjusted df	33.316	1	28.64 7	.000
	Based on trimmed mean	33.604	1	48	.000

Based on the table above, the significance value of the homogeneity of variances for the post-test was .000, which was less than .05, indicating that the variances of the data were not homogeneous. Therefore, the hypothesis testing using the independent sample t-test was interpreted based on the "Equal variances not assumed" row. This was because the results showed unequal variances, so the calculation of the alternative hypothesis relied on the independent sample t-test with unequal variances assumption (Welch's t-test).

c. Paired Sample T-Test

Before the researcher conducted the independent sample t-Test to determine the significant difference between the post-test scores of the two classes, the researcher conducted an additional test, namely. a paired sample t-test to compare the students' vocabulary mastery before and after using *Wordwall* as a learning media. The results of the paired sample t-test are presented as follows.

Tabel 3. Paired Sample T-Test for the Experimental Class

	Pre-Test		Post-Test	
	M	SD	M	SD
Vocabulary Mastery	60.24	21.651	86.44	4.001
Vocabulary Mastery	t	df	p	η^2
	-6.912	24	.000	0.67

Based on the table above, students' vocabulary mastery after using *Wordwall* (M= 86.44, SD= 4.001) showed an improvement compared to their vocabulary mastery before using *Wordwall* as a learning media (M = 60.24, SD = 21.65). The statistical results indicated that $t(24) = -6.912$, and significance of 2-tailed (p) = 0.000, which was less than 0.05, with a large effect size of 0.67. These results indicate that there was a statistically significant improvement in the students' vocabulary mastery in the experimental group from pre-test to post=test.

d. Independent Sample T-Test

In this research, hypothesis testing was conducted using a parametric test, namely the independent sample t-test, because the results of the normality test indicated that the data were normally distributed. Furthermore, since the homogeneity of variances test showed that the data were not homogeneous, the interpretation of the independent sample t-test was based on the "Equal variances not assumed" results. The results of the independent sample t-test are presented as follows.

Tabel 4. Independent Sample T-Test

	Experimental		Control	
	M	SD	M	SD
Post-Test	86.44	4.001	65.44	14.257
	Equal Variances not assumed			
	t	df	p	
	7.091	27.757	.000	

Based on the table above, the mean score of vocabulary mastery of students in the experimental class that used *Wordwall* (M= 86.44, SD= 4.001) was higher than the mean score of the control class that did not use *Wordwall* (M= 65.44, SD= 14.257). The statistical results indicated that $t(27.757) = 7.091$, with a two-tailed significance value (p) of 0.000. Since the p-value is lower than .05, the results indicate that there was a significant difference in students' vocabulary mastery focusing on action verbs and temporal conjunctions in procedure texts between the experimental class and the control class.

e. Effect Size

After the results of the independent sample t-test were obtained, the next step was to calculate the effect size to determine the magnitude of the *Wordwall*-based treatment on students' vocabulary mastery. The effect size was calculated using eta squared (η^2) based on the results of equal variances not assumed (Welch's t-test), as follows:

$$\eta^2 = \frac{t^2}{t^2 + df}$$

$$\eta^2 = \frac{(7.091)^2}{(7.091)^2 + 27.757}$$

$$\eta^2 = \frac{50.28}{50.28 + 27.757}$$

$$\eta^2 = \frac{50.28}{78.037}$$

$$\eta^2 = 0.644$$

Based on the result of the effect size above, the result was 0.644, which shows that using *Wordwall* as a learning media has a high or large effect on learning vocabulary.

2. Discussion

Based on the findings, there was a significant difference in the improvement of vocabulary mastery, focusing on action verbs and temporal conjunctions, among students who used *Wordwall* as a learning media compared to those who did not experience it using *Wordwall*. It reveals that there was a positive impact on improving students' vocabulary mastery.

This statement is also supported by several previous studies that used *Wordwall* as a learning media to improve students' vocabulary mastery (Hasram et al., 2021; Pradini & Adnyayanti, 2022; Syamsidar et al., 2023; Amaliyah & Rahayu, 2023). In the first study, it was showed that there was a positive impact from *Wordwall* to improve the students' vocabulary mastery, because the results were seen from the increase in pre-test and post-test scores among Year 5 pupils (Hasram et al., 2021). In another study by Pradini & Adnyayanti (2022), it was reported that there was a positive impact of *Wordwall* on improving students' vocabulary mastery and motivation in learning English. In addition, Syamsidar et al. (2023) also showed that the use of *Wordwall* had a positive effect on students' vocabulary mastery. Furthermore, Amaliyah & Rahayu (2023) found that students showed positive responses toward *Wordwall* and experienced improvement in vocabulary achievement. These studies support the present findings, indicating that *Wordwall* is effective in enhancing vocabulary learning.

In this study, the findings showed that the experimental class showed improvement in vocabulary mastery, focusing on action verbs and temporal conjunctions, and this is expected to be higher compared to the control class, since the control class was taught from the student handbook. This result was also confirmed by a study conducted by Shabrina & Taufiq (2023), which found that eighth-grade students taught using *Wordwall* achieved higher average scores than those taught using the conventional method. It is also supported by the effect size calculated in this study, which showed

a large effect, which means *Wordwall* was very effective in improving students' vocabulary mastery.

Furthermore, students in the experimental class appeared more active and enthusiastic in learning vocabulary using *Wordwall*. They actively volunteered to answer questions, eagerly participated in the game activities, asked questions when they encountered unfamiliar words, and showed positive responses such as smiling, cheering, and expressing excitement during the learning process. This is in line with the findings of Salsabila et al. (2023), who stated that *Wordwall* is a gamification learning application that uses simple interaction to build students' desire to learn. This is also supported by the gamification theory introduced by Deterding et al. (2011), which states that gamification is the use of game design elements in non-game contexts, such as classrooms or learning activities, aimed at increasing student engagement and motivation.

Moreover, this is also in line with the theory of learning vocabulary, which states that for the learning of words to be effective, there needs to be repeated exposure, meaningful practice, and active retrieval of words (Nation, 2001). Therefore, through *Wordwall* activities, students were repeatedly exposed to action verbs and temporal conjunctions in interactive formats, which supported better retention and vocabulary mastery.

CONCLUSION AND SUGGESTION

1. Conclusion

Based on the findings and discussion, it can be concluded that after applying *Wordwall* as a learning media, eighth-grade students' vocabulary mastery, especially regarding action verbs and temporal conjunctions in procedure texts, increased, indicating that *Wordwall* had a positive impact on vocabulary learning. The result of the post-test of the experimental class also showed a significant improvement compared to the pre-test of the experimental class before receiving treatment using *Wordwall*, with a significant value (p) of 0.000 and an

average score increase from 60.24 to 86.44.

Furthermore, the post-test results of the experimental class were higher after receiving the *Wordwall* treatment compared to the post-test results of the control class, which only used the student handbook when learning vocabulary. This is also supported by a significant value of 0.000, which was less than 0.05, which means that there was a significant difference in eighth-graders' vocabulary mastery, especially regarding action verbs and temporal conjunctions in procedure texts.

The findings of this study showed that *Wordwall* was effective in helping the students of the experimental class to understand the material better than the students of the control class, who used a student handbook to learn the material, in which the teacher explained the material to the students, and the students did some exercises to learn vocabulary. The results of this study showed that *Wordwall* was effective in facilitating the students' learning of the vocabulary through the activities provided.

This study acknowledges several limitations, such as the fact that the results of this study were limited to the students' vocabulary mastery in procedure texts, especially action verbs and temporal conjunctions. The findings cannot be generalized to other types of vocabulary and text genres. Additionally, the main data source for this study was quantitative data from test results. Students' perceptions, motivation, and attitudes toward the use of *Wordwall* were not evaluated using qualitative research instruments such as interviews and questionnaires.

2. Suggestion

Based on the findings and discussion of this study, several suggestions are provided for teachers to enhance the use of *Wordwall* in improving students' vocabulary mastery and for further researchers who intend to conduct related research:

a. For Teachers

Teachers can use gamification learning applications as an effective learning media, called Wordwall. Wordwall can make the learning process more interactive and enjoyable. In Wordwall, there are various activities (such as *Spell the Word*, *Matching*, and *Crossword* games) that can be selected and used, or even adapted to the material prepared. Furthermore, teachers are also advised to combine Wordwall with other teaching strategies to maximize students' learning outcomes.

b. For Further Researchers

Future researchers are suggested to examine the effectiveness of using *Wordwall* on other language skills, such as reading, writing, listening, or speaking. In addition, future researchers can also conduct research using different research designs, larger samples, different school levels, and longer treatment durations to strengthen the findings. Additionally, future researchers are also advised to conduct research comparing the effectiveness of *Wordwall* with other gamification learning applications to identify which gamification learning application is more effective in improving students' English achievement.

REFERENCES

- Afidah, A., & Machfudi, M. I. (2022). Students' difficulties in vocabulary mastery. *Critical Review of English-Arabic World Journal*, 1(1). <https://doi.org/10.35719/crewjourn>
- Amaliyah, R. D., & Rahayu, E. M. (2023). The implementing of using Wordwall as a media to improve the students' vocabulary achievement in new normal era. *Edu-Ling*, 6(2). <https://journals.unihaz.ac.id/index.php/edu-ling>
- Creswell, J. W. (2012). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*.
- Deterding, S., Khaled, R., Nacke, L. E., & Dixon, D. (2011). *Gamification: Toward a Definition*. ACM Digital Library.
- Gregory, R. J. (2016). *Psychological testing: history, principles, and applications*. Pearson.
- Hasram, S., Nasir, M. K. M., Mohamad, M., Daud, M. Y., Rahman, M. J. A., & Mohammad, W. M. R. W. (2021). The effects of Wordwall online games (Wow) on English language vocabulary learning among year 5 pupils. *Theory and Practice in Language Studies*, 11(9), 1059–1066. <https://doi.org/10.17507/tpls.1109.11>
- Kapp, K. M. (2012). *The Gamification of Learning and Instruction*.
- Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge University Press.
- Nurammida, Nizarrahmadi, & Yolanda, A. (2024). The effectiveness of Wordwall game as media to teach students' English vocabulary mastery of eighth-grade. *Jurnal Jendela Pendidikan*, 4(03).
- Pradini, P. C., & Adnyayanti, N. L. P. E. (2022). Teaching English vocabulary to young learners with Wordwall application: An experimental study. *Journal of Educational Study*, 2(2), 187–196. <https://doi.org/10.36663/joes.v2i2.351>
- Sakkir, G., Azis, N., & Jabu, B. (2023). Using the digital game Wordwall to enhance EFL students' vocabulary mastery. *Journal of Educational Science and Technology (EST)*, 9(3), 246. <https://doi.org/10.26858/est.v9i3.56966>
- Salsabila, A., Mulyana, D., & Cahyono, C. (2023). Pengaruh media Wordwall terhadap motivasi belajar peserta didik pada mata pelajaran Pendidikan Pancasila dan Kewarganegaraan. *Pelita: Jurnal Kajian Pendidikan Dan Pembelajaran Indonesia*, 3(2), 42–51. <https://doi.org/10.56393/pelita.v3i2.1716>
- Shabrina, F., & Taufiq, W. (2023). Effect of teaching English vocabulary on junior high school students by using Wordwall.net. *Borneo Educational*

- Journal (Borju)*, 5(2), 283–295.
<https://doi.org/10.24903/bej.v5i2.1353>
- Syamsidar, S., Silalahi, R. M. P., Rusmardiana, A., Febriningsih, F., Taha, M., & Erniwati, E. (2023). Wordwall on mastery of vocabulary in English learning. *AL-ISHLAH: Jurnal Pendidikan*, 15(2), 1801–1806.
<https://doi.org/10.35445/alishlah.v15i2.3466>
- Wulandari, A., Yuliany, E. H., & Parwanti, S. (2025). Technology integration in learning in the digital age: A literature review of models, challenges, and opportunities. *International Journal of Teaching and Learning (INJOTEL)*, 2(11), 1215–1225.
- Wulandari, C., & Widyastuti Surtikanti, M. (2020). A case study of internal and external factors on the difficulties in learning English. *Journal of English Education and Literature*, 1(2), 43–48.