

THE USE OF WORDWALL ONLINE GAME IN TEACHING VOCABULARY TO STUDENTS AT SMKN 2 PALOPO

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ABSTRACT

Sapna, 2026. This study investigates the effectiveness of the Wordwall online game application in improving English vocabulary mastery among 11th-grade students in class TKJ A at SMKN 2 Palopo. The problem identified is that students generally struggle with vocabulary mastery, which affects their overall English language skills including speaking, writing, and reading. This research employs a pre-experimental design with a one-group pre-test and post-test approach. The population consisted of 19 students in class XI TKJ A at SMKN 2 Palopo, with all students used as the research sample through total sampling technique. The research instrument used was a multiple-choice vocabulary test, and data were analyzed using a paired sample t-test. The results showed a significant increase in mean scores from 50.74 in the pre-test to 74.74 in the post-test. The t-count value ($t_o = 5.871$) exceeded the t-table value ($t_t = 2.101$) at a significance level of 0.05 with 18 degrees of freedom. Consequently, the alternative hypothesis (H_1) was accepted and the null hypothesis (H_o) was rejected. These findings confirm that the use of Wordwall online games is effective in improving ESP (English for Specific Purposes) vocabulary mastery of students at SMKN 2 Palopo.

Keywords: Wordwall, Vocabulary Mastery, English for Specific Purposes (ESP), Online Game

ABSTRAK

Sapna, 2026. Penelitian ini mengkaji efektivitas penggunaan aplikasi permainan daring Wordwall dalam meningkatkan penguasaan kosakata bahasa Inggris pada siswa kelas XI TKJ A di SMKN 2 Palopo. Permasalahan yang diidentifikasi adalah siswa pada umumnya kesulitan dalam menguasai kosakata bahasa Inggris, yang berdampak pada kemampuan berbicara, menulis, dan membaca mereka secara keseluruhan. Penelitian ini menggunakan desain pre-eksperimental dengan pendekatan satu kelompok pre-test dan post-test. Populasi penelitian terdiri dari 19 siswa kelas XI TKJ A di SMKN 2 Palopo, dengan seluruh siswa dijadikan sampel penelitian menggunakan teknik total sampling. Instrumen penelitian yang digunakan adalah tes kosakata pilihan ganda dan data dianalisis menggunakan uji t sampel berpasangan. Hasil penelitian menunjukkan peningkatan nilai rata-rata yang signifikan dari 50,74 pada pre-test menjadi 74,74 pada post-test. Nilai t-hitung ($t_o =$

5,871) lebih besar dari nilai t-tabel ($t_t = 2,101$) pada taraf signifikansi 0,05 dengan derajat kebebasan 18. Dengan demikian, hipotesis alternatif (H_1) diterima dan hipotesis nol (H_0) ditolak. Temuan ini membuktikan bahwa penggunaan permainan daring Wordwall efektif dalam meningkatkan penguasaan kosakata ESP (English for Specific Purposes) siswa di SMKN 2 Palopo.

Kata Kunci: Wordwall, Penguasaan Kosakata, English for Specific Purposes (ESP), Permainan Daring

A. Background

English language learning generally aims to develop oral and written communication skills needed in everyday and professional life. The ability to master vocabulary is one of the fundamental aspects of language learning, as it directly affects students' competence in speaking, writing, reading, and listening. However, vocabulary mastery remains a persistent challenge, particularly for students in vocational settings who must simultaneously acquire both general and field-specific English terminology.

Students in vocational schools, such as those enrolled in the Computer and Network Engineering (TKJ) program at SMKN 2 Palopo, face unique challenges in learning English. They are required to master ESP (English for Specific Purposes) vocabulary technical terms directly relevant to their area of study, such as hardware components, networking

devices, network security terminology, and troubleshooting procedures. Without adequate vocabulary mastery, students struggle to communicate effectively in professional and academic contexts, which hinders their readiness for the workforce. This challenge is further compounded by traditional teaching approaches that often lack engagement, leading to low motivation and limited retention of new vocabulary.

Constructivist learning theory underscores the importance of active, experience-based learning, where students construct knowledge through meaningful interaction with their environment. In this framework, interactive and technology-driven methods are considered far more effective than passive, conventional instruction. The rapid integration of digital tools in education has opened new avenues for making vocabulary learning more engaging, flexible, and

personalized. Among these tools, game-based learning platforms have gained considerable attention for their ability to promote motivation, active participation, and immediate feedback all of which are critical factors in vocabulary acquisition.

Wordwall is one such game-based online learning platform that offers a variety of interactive activity formats, including quizzes, word-matching, anagrams, missing words, and open-the-box games. These features are specifically designed to target vocabulary acquisition through repetition, competition, and instant feedback. Furthermore, Wordwall allows teachers to customize games according to the topic and difficulty level, making it a highly adaptable tool for different classroom contexts. Its online nature also enables students to access learning materials anytime and anywhere, extending vocabulary practice beyond the classroom.

Despite growing interest in game-based learning tools, empirical evidence on the effectiveness of Wordwall specifically for ESP vocabulary in vocational school settings in Indonesia remains limited.

Therefore, this study aims to determine whether the use of the

Wordwall online game application can improve the English vocabulary mastery of 11th-grade students in class TKJ A at SMKN 2 Palopo. The findings are expected to contribute both theoretically by enriching the literature on game-based vocabulary learning and practically, by providing teachers with an evidence-based alternative instructional medium for improving students' vocabulary comprehension in vocational English learning contexts.

B. Research Method

This study employed a quantitative approach with a pre-experimental design, specifically a one-group pre-test and post-test design ($O_1 \times O_2$). This design was chosen to evaluate the effectiveness of the Wordwall online game application in improving students' English vocabulary mastery without the use of a control group. The research was conducted at SMKN 2 Palopo, involving 11th-grade students in class TKJ A (Computer and Network Engineering).

The population of this study consisted of 89 students across all 11th-grade TKJ classes at SMKN 2 Palopo. The sample was drawn from

class XI TKJ A, totaling 19 students, selected using a total sampling technique. The independent variable in this study was the use of the Wordwall application, while the dependent variable was students' ESP (English for Specific Purposes) vocabulary mastery, specifically covering four categories of technical terminology relevant to the TKJ field: hardware components, networking components, network security, and troubleshooting procedures.

The research instrument used was a vocabulary test consisting of 21 items in various formats multiple choice, matching, fill in the blanks, word arrangement, and essay with a maximum score of 33 points converted to a 100-point scale. The instrument was validated by a designated expert validator prior to administration. The test was administered twice: a pre-test conducted before treatment to measure students' baseline vocabulary comprehension, and a post-test administered after treatment to assess improvement.

The treatment was carried out over four meetings. In each session, the researcher integrated Wordwall-based activities into the vocabulary

learning process. Activities included Image Quiz, Match Up, Fill in the Blanks, and Random Wheel games, all of which were customized to target ESP vocabulary in the TKJ domain. Students accessed the platform online during class and were also encouraged to use it independently at home for further practice.

Data were analyzed using the following procedures: (1) scoring student answers using the formula $\text{Score} = (\text{Total Correct Answers} / \text{Total Items}) \times 100$; (2) calculating the percentage of students in each score category Excellent (86-100), Good (71-85), Average (56-70), and Poor (<55); and (3) conducting a paired sample t-test using SPSS version 31 to determine whether there was a statistically significant difference between pre-test and post-test scores. The significance level was set at $\alpha = 0.05$ with a degree of freedom of 18.

C.Finding and Discussion

Prior to the implementation of the Wordwall online game, a pre-test was administered to measure students' baseline ESP vocabulary mastery. The descriptive statistics of both pre-test and post-test results are presented in Table 1.

Table 1 Descriptive Statistics of Pre-Test and Post-Test

Statistics	Pre-Test	Post-Test
N	19	19
Minimum	39	39
Maximum	64	100
Mean	50.74	74.74
Std. Deviation	6.903	18.211

Based on Table 1, the pre-test mean score was 50.74 with a standard deviation of 6.903, with scores ranging from a minimum of 39 to a maximum of 64. These results indicate that students' ESP vocabulary mastery was considerably low before treatment was applied. The distribution of students across score categories before and after treatment is presented in Table 2.

Table 2 Comparison of Pre-Test and Post-Test Score Classification

Classification	Pre-Test		Post-Test	
	Frequency	Percentage	Frequency	Percentage
Excellent (86-100)	0	0%	6	31.58%
Good (71-85)	0	0%	9	47.37%
Average (56-70)	4	21.05%	0	0%
Poor (<55)	15	78.95%	4	21.05%
Total	19	100%	19	100%

As shown in Table 2, the pre-test results reveal that the majority of students, totaling 15 students (78.95%), fell into the poor category with scores below 55, while only 4 students (21.05%) reached the average category with scores between 56–70. No students achieved good or excellent levels prior to treatment. These findings confirm that students had limited knowledge of technical English vocabulary related to their field of Computer and Network Engineering (TKJ), covering four vocabulary categories: hardware components, networking components, network security, and troubleshooting terminology. This is consistent with Hasan's finding that students commonly struggle with vocabulary mastery, particularly in understanding and using technical terms accurately in context.

Following three treatment sessions using the Wordwall application, a notable improvement in students' ESP vocabulary mastery was observed. Referring back to Table 1, the post-test mean score increased significantly to 74.74 with a standard deviation of 18.211, with scores ranging from 39 to 100, representing a

mean gain of 24.00 points from the pre-test. As further shown in Table 2, 6 students (31.58%) achieved excellent scores, 9 students (47.37%) attained good scores, and only 4 students (21.05%) remained in the poor category after treatment. Notably, the proportion of students in the poor category dropped drastically from 78.95% to 21.05%, while students in the excellent and good categories — previously absent — rose to a combined 78.95% after treatment. This shift demonstrates a substantial improvement in students' vocabulary comprehension across all four ESP vocabulary categories.

To determine whether the observed improvement was statistically significant, a paired sample t-test was conducted using SPSS version 31. The results are presented in Table 3.

Table 3 Paired Samples Test of Pre-Test and Post-Test

	Me an	Std. Devia tion	St d. Err or Me an	t	d f	Sig (2- tail ed)
Pre- Test	50. 74	6.903	1.5 84			

Post- Test	74. 74	18.21 1	4.1 78			
Differ ence	24. 00	20.47 8	4.6 98	5.1 09	1 8	0.0 01

Table 3 shows that the mean difference between the pre-test and post-test scores was 24.00 points. The t-count value (5.109) exceeded the t-table value (2.101) at a significance level of $\alpha = 0.05$ with 18 degrees of freedom. The 2-tailed significance value was 0.001, which is below the standard threshold of 0.05. Therefore, the alternative hypothesis (H_1) was accepted and the null hypothesis (H_0) was rejected, confirming that the use of Wordwall had a statistically significant effect on students' ESP vocabulary mastery at SMKN 2 Palopo.

The findings of this study demonstrate that the use of Wordwall online game is effective in improving the ESP vocabulary mastery of 11th-grade TKJ students at SMKN 2 Palopo. The significant mean gain of 24.00 points from pre-test to post-test, supported by the paired sample t-test result ($t = 5.109 > t\text{-table} = 2.101$, sig. = 0.001), provides strong statistical evidence of Wordwall's effectiveness as a vocabulary learning medium.

The effectiveness of Wordwall can be attributed to its interactive and game-based approach, which transformed traditional vocabulary exercises into engaging and enjoyable activities. Game features such as Image Quiz, Match Up, Fill in the Blanks, and Random Wheel provided students with repeated exposure to ESP technical vocabulary across multiple formats, reinforcing retention through the principles of spaced repetition and immediate feedback. These interactive elements also motivated students to participate more actively in the learning process, which is consistent with Plass, Mayer, and Homer's assertion that competitive and feedback-driven game elements are essential in promoting vocabulary retention.

The improvement observed in this study is also consistent with constructivist learning theory, which emphasizes that students construct knowledge more effectively through active participation and meaningful interaction with learning materials. By engaging directly with ESP vocabulary within a game-based environment, students were able to connect new terms with their functions and real-world applications in the TKJ field.

These results align with the findings of Purwitasari, who demonstrated that Wordwall significantly improves students' vocabulary skills and motivation, and with Pradini and Adnyayanti, who confirmed that Wordwall promotes active student participation in the vocabulary learning process.

It is also worth noting that vocabulary categories introduced in the earlier treatment sessions — hardware components and networking components — showed stronger student performance, likely due to greater repetition and exposure through multiple game formats. In contrast, vocabulary related to network security and troubleshooting, which were introduced in the final session, showed more varied results, as reflected in the higher post-test standard deviation (18.211) compared to the pre-test (6.903). This suggests that frequency of exposure remains a critical factor in vocabulary retention, even within a game-based learning framework. Despite the overall positive outcomes, four students continued to score in the poor category, indicating that some learners may still require additional

instructional support beyond game-based activities alone.

E. Conclusion

This study concludes that the use of the Wordwall online game application is effective in improving the ESP (English for Specific Purposes) vocabulary mastery of 11th-grade students in class TKJ A at SMKN 2 Palopo. This is evidenced by a significant increase in the mean score from 50.74 in the pre-test to 74.74 in the post-test, representing a mean gain of 24.00 points. The paired sample t-test confirmed that the t-count value (5.109) exceeded the t-table value (2.101) at a significance level of $\alpha = 0.05$ with 18 degrees of freedom, and the 2-tailed significance value of 0.001 was well below the 0.05 threshold. These results led to the acceptance of the alternative hypothesis (H_1) and the rejection of the null hypothesis (H_0), confirming that Wordwall had a statistically significant effect on students' vocabulary mastery. Furthermore, the distribution of score categories shifted considerably, with 78.95% of students achieving good and excellent levels in the post-test, compared to none in the pre-test.

Based on these findings, several recommendations are put forward. For English teachers, particularly those teaching in vocational school contexts, it is recommended to integrate Wordwall as a supplementary instructional medium in vocabulary teaching, as it promotes student engagement, motivation, and active participation. Teachers should also ensure sufficient and repeated exposure to each vocabulary category across multiple sessions to maximize retention. For school institutions, it is advisable to support the integration of digital learning platforms by providing adequate technological infrastructure and internet access to facilitate game-based learning activities. For future researchers, it is recommended to conduct similar studies using a true experimental design with a control group to provide stronger causal evidence of Wordwall's effectiveness. Additionally, future studies may explore the use of Wordwall across different grade levels, subjects, or ESP contexts, and may also investigate the long-term retention of vocabulary acquired through game-based learning platforms.

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