Al-Ishlah: Jurnal Pendidikan
Vol.17, 4 (December, 2025), pp. 6715-6724
ISSN: 2087-9490 EISSN: 2597-940X, DOI: 10.35445/alishlah.v17i4.7584

The Impact of Digital Word Wall Use on EFL Learners' Speaking Proficiency in Secondary Education

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ARTICLE INFO

Keywords:

word wall;
speaking proficiency;
EFL students;
interactive learning

Article history:

Received 2025-04-24
Revised 2025-09-06
Accepted 2025-12-26

ABSTRACT

Speaking clearly and effectively is crucial for English as a Foreign Language (EFL) learners, yet limited vocabulary, low confidence, and teacher-centered instruction often hinder oral communication. This study examined the effect of the Wordwall application on secondary students' speaking ability. A quasi-experimental design was employed with 40 eighth-grade students from a junior secondary school. Two intact classes were assigned as groups: Class 8C (n = 20) as the experimental group and Class 8B (n = 20) as the control group. Students' speaking performance was measured using an analytical rubric covering pronunciation, grammar, vocabulary, fluency, and comprehension. Data were analyzed using SPSS 20 through normality and homogeneity tests, followed by paired- and independent-samples t-tests. Results indicated a significant difference between groups on post-test scores, $t(38) = 3.502$, $p = .001$, with a mean difference of 12.00. The experimental group also showed a significant improvement from pre-test ($M = 36.98$) to post-test ($M = 70.50$), $t(19) = 25.570$, $p < .001$. The findings suggest that integrating Wordwall significantly enhances students' speaking proficiency. Its interactive features appear to support vocabulary use, fluency, and learner confidence by creating a more engaging and low-anxiety learning environment. Accordingly, incorporating Wordwall into EFL speaking instruction is recommended.

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1. INTRODUCTION

Speaking is widely regarded as a cornerstone of communicative competence in English as a foreign language (EFL) because it enables learners to express ideas, negotiate meaning, and participate in social as well as academic interaction. Unlike receptive skills, speaking demands real-time language processing, immediate formulation of responses, and interactional management, making it a visible indicator of overall proficiency (Thornbury, 2005). In many EFL contexts, learners also judge their progress—and the value of an English course—largely by how much their spoken proficiency improves

(Richards, 2008). Consequently, speaking instruction is not only a curricular target but also a practical measure of learning success.

Despite its importance, speaking remains one of the most difficult skills for EFL learners to develop. Common obstacles include limited vocabulary, weak pronunciation control, low fluency, and inaccuracies in grammar use that reduce comprehensibility. Affective barriers can be equally limiting: foreign language anxiety often emerges most strongly during oral performance and can undermine willingness to communicate (Horwitz et al., 1986). Language anxiety has also been linked to tension and apprehension in second-language processing, which may interfere with learners' ability to retrieve and produce language efficiently (MacIntyre & Gardner, 1994). These challenges are frequently intensified when classroom practices provide limited opportunities for meaningful interaction.

Traditional speaking instruction has often relied on repetition-based activities—such as drills and memorized dialogues—which may prioritize form over communicative purpose (Richards, 2008). When instruction is predominantly teacher-centered, students may become passive, participate minimally, and avoid risks in speaking due to fear of making mistakes. In response, scholars emphasize the need for classroom environments that lower pressure, increase engagement, and expand opportunities for practice through interaction and purposeful tasks (Harmer, 2007; Thornbury, 2005).

Recent developments in educational technology have created new pathways to address these pedagogical and affective constraints. Digital and game-based learning tools can offer repetition with variety, immediate feedback, and a playful atmosphere that supports participation. Wordwall, for example, is a web-based platform that allows teachers to design interactive activities (e.g., matching, quizzes, random wheels) that can prompt quick responses and repeated language use. Prior research shows Wordwall is frequently associated with improved learner engagement and vocabulary outcomes (Hasram et al., 2021; Putri, 2020). However, much of this evidence emphasizes vocabulary mastery or learner perceptions rather than treating speaking proficiency as the primary outcome.

Although emerging studies indicate Wordwall may support speaking instruction at the junior secondary level, research remains limited and uneven across contexts (Umairoh & Agustina, 2023). Therefore, the present study investigates the effectiveness of integrating Wordwall into EFL speaking instruction for junior high school learners, with attention to key dimensions of oral performance (e.g., fluency, accuracy, vocabulary use, and confidence). It is hypothesized that students taught with Wordwall-supported activities will demonstrate significantly greater improvement in speaking proficiency than those taught through conventional methods.

2. METHODS

This research investigated how the Word wall application influenced students' speaking skills by employing a quasi-experimental approach that included both pre-test and post-test control groups. According to Gay et al. (2012), this design is appropriate for assessing the effectiveness of a treatment between two non-randomized groups. The study was carried out in a junior high school with 66 eighth-grade students throughout the academic year 2024/2025. The school's research ethics committee approved the project, and the headmaster granted permission. Prior to participation, students and parents provided informed consent.

Two complete classes were selected at random for the sample using cluster random sampling: Class 8C, consisting of 20 learners, was assigned as the experimental class, while Class 8B, with the same number of learners, served as the control class (Creswell et al., 2012). Cluster sampling was chosen because classes had already been formed administratively, making random assignment at the individual level impractical. While this approach limits generalizability beyond the sampled classes, it provides a realistic representation of classroom-based interventions in the school context.

The intervention lasted for four weeks, consisting of eight sessions (two per week). The experimental group was taught using the Word Wall application integrated into speaking activities, whereas the control group received instruction through traditional teacher-centered approaches.

An analytical speaking rubric that comprised five areas—pronunciation, grammatical accuracy, vocabulary, fluency, and understanding—was modified from Brown (2001) to evaluate students' speaking abilities. To guarantee content validity, the rubric was examined and modified based on professional advice from two prominent EFL professors. Before being put into use, it was tested on a small sample of students. A scale of 1 to 20 was used to rate each component, with a maximum score of 100. Two separate raters assessed the students' performance to guarantee score reliability. Cohen's kappa was applied to measure the consistency between raters, resulting in a value of 0.82, which reflect a high level of agreement.

The data were processed using SPSS version 20. Initially, tests for normality and homogeneity were conducted. An independent sample test was used to compare the speaking proficiency between the experimental and control classes, and a paired sample test was carried out to assess the improvement within each group. The level of significance was established at $p < 0.05$, following standard procedures for experimental data analysis (Sugiyono, 2013).

3. FINDINGS AND DISCUSSION

This section reports the findings of the research, as well as a discussion of how they connect to the research objectives and previous literature. The goal of this research was to determine whether employing the Word Wall software had a significant influence on students' speaking abilities in the context of learning English as a Foreign Language (EFL). Speaking proficiency data were gathered through pre- and post-test assessments conducted with both the experimental and control groups. The outcomes were assessed using statistical tests to measure differences in speaking proficiency before and after therapy. The findings are presented in terms of students' total speaking scores as well as their performance in important components such as pronunciation, grammar, vocabulary, fluency, and understanding. The discussion below analyzes these results by considering relevant theories and previous studies in the fields of English language teaching and technology-assisted learning.

3.1 Findings

The statistics for this study were obtained from the speaking testing results of eighth-grade students, who were split into two groups: the experimental group, which received instruction through the Word Wall application, and the control group, which was taught using traditional methods. Both groups completed pre- and post-tests assessed with the same speaking rubric, devised by Brown (2001), which evaluated five characteristics of speaking: pronunciation, grammar, vocabulary, fluency, and understanding. Two different raters examined the scores to assure neutrality and reliability. Each student was assigned a score for each component, with a maximum possible total score of 100. The average scores from both raters were utilized to calculate the final result for each student.

The data were summarized using descriptive statistics, which included the mean, minimum, and maximum scores, as well as the standard deviation for both the pre- and post-test in each group. These statistical measurements contributed to a better understanding of students' speech proficiency before and after the intervention. Subsequently, inferential statistical tests were performed using SPSS version 20 to assess whether the differences between groups were significant. There were four tests: normality, homogeneity, paired sample test (within groups), and independent sample test. The Word Wall application's influence on students' speaking skills was examined using a significance threshold of 0.05 ($p < 0.05$).

3.1.1 Normality Testing

The normality test determined if the collected data had a normal distribution. The analysis included the pre- and pos-test scores of both the experimental and control class. The tests were carried out using SPSS version 20 to determine whether the students' scores were regularly distributed.

Table 1. Normality Testing of Students' Speaking Proficiency Pre-Test

	Kolmogorov - Smirnov			**Shapiro – Wilk**		
	Statistic	**df**	**Sig.**	**Statistic**	**df.**	**Sig.**
Experimental	133	20	.200	935	20	196
Control	116	20	.200	983	20	970

Source: SPSS version 20

In line with Table 1, the test known as the Kolmogorov test produces a significance level of 0.200 for both the experimental and control groups, which surpasses the commonly used alpha criterion of 0.05. Similarly, the Shapiro-Wilk test produces a significance value of 0.196 for the experimental and 0.970 for the control groups. These values indicate if the data distribution is normal.

Table 2. Normality Testing of Students' Speaking Proficiency Post-Test

	Kolmogorov - Smirnov			**Shapiro-Wilk**		
	Statistic.	**df.**	**Sig.**	**Statistic**	**df**	**Sig.**
Experimental Class	135	20	.200	925	20	123
Control Class	138	20	.200	942	20	260

Source: SPSS version 20

Table 2 indicates the statistical analysis used to assess if the students' post-test speaking scores are normally distributed using the Kolmogorov test and the Shapiro-Wilk- tests. The results in the group performing the experiment were 0.200 and 0.123, whereas the control group got 0.200 and 0.260. Because all of the values are more than 0.05, the data for both groups were normally distributed.

3.1.2 Homogeneity Testing

Homogeneity testing determines whether data variations across groups are equivalent. In this case, the test was performed to see if the experimental and control groups had equal variances, which is required for the validity of the following statistical analyses. The homogeneity test was carried out using SPSS version 20 to check that the variances between the groups were identical.

Table 3. Homogeneity Testing of Students' Speaking Proficiency Pre-Test

		Levene Statistic	df (1)	df (2)	Sig.
Score	Based on the mean	2.628	1	38	113
	Based on median	1.734	1	38	196
	Based on median and with adjusted df	1.734	1	32.023	197
	Based on the trimmed mean	2.594	1	38	116

Source: SPSS version 20

The results of the homogeneity test shown in the Table 3 indicate that the significance level based on the mean was 0.113, whereas the values based on the median, adjusted median, and trimmed mean were 0.196, 0.197, and 0.116. Because all of these values are more than 0.05, the experimental and control groups exhibited comparable variances. This indicates that the data meets the criteria of homogeneity.

Table 4. Homogeneity Testing of Students' Speaking Proficiency Post-Test

		Levene Statistic	df1	df2	Sig.
Score	Based on mean	2.309	1	38	137
	Based on median	1.949	1.	38	171
	Based on median and with adjusted df	1.949	1.	35.759	171
	Based on trimmed mean	2.243	1	38	142

Source: SPSS version 20

The outcomes of the homogeneity test are summarized in Table 4. The mean significance value was found to be 0.137, while the median, adjusted median, and trimmed mean were 0.171, 0.171, and 0.142, respectively. Because each of these values is above 0.05, the variability between the experimental and control groups can be considered statistically similar. As a result, the data from both groups can be called homogeneous because their variances are equal.

3.1.3 Hypothesis Testing

a. Independent Sample Test

H_0: It was no significant improvement in students' proficiency in speaking with or without the Word Wall app.

H_1: It was a significant improvement in students' proficiency in speaking with or without the Word Wall app.

The following table illustrates the students' performance on the speaking ability test:

Table 5. Table Group Statistic

	Group	N	Mean	Std. Deviation	Std. Error Mean
Score	Experiment	20	70.500	9.1652	2.0494
	Control	20	58.500	12.2796	2.7458

Source: SPSS version 20

The data in Table 5 indicated that the experimental group that used the WordWall application obtained higher and more uniform scores. The smaller standard error of the mean reflected greater consistency in students' results. Overall, these findings imply that the Word Wall application contributed positively to students' performance.

Table 6. Independent Samples Test statistics

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	(95% Confidence Interval of the Difference)	
									Lower	Upper
Score	Equal variances assumed	2.309	.137	3.502	38	.001	12.0000	3.4263	5.0638	18.9362
	Equal variances not assumed			3.502	35.155	.001	12.0000	3.4263	5.0454	18.9546

Source: SPSS version 20

Table 7. Independent Sample t-Test Result

Group Comparison	t(df)	P - value	Mean Difference	95% CI	Cohen's d	η^2
Experimental vs Control (Post-test)	3.502 (38)	0.001	12.00	5.06 – 18.94	1.09	.24

The results of the independent t-test revealed that the post-test scores of the experimental group (M = 70.50, SD = 9.17) were significantly greater than those of the control group (M =58.50, SD = 12.28), t (38) = 3.502, p = 0.001. With a Cohen's d of 1.09, the effect size is considered large, indicating that the use of the WordWall application had a substantial positive impact on students' speaking performance.

b. Paired Sample Test

Table 8. Paired Samples statistic

	Mean	N	Std. Deviation	Std. Error Mean
Post-test	70.500	20	9.1652	2.0494
Pre-test	36.975	20	7.4206	1.6593

Source: SPSS version 20

The t-test findings demonstrated an increase in the mean score from 36.97 on the pre-test to 70.50 on the post-test. This improvement suggests that students' speaking abilities were enhanced following the integration of the Word wall application into the learning activities.

Table 9. The Paired Samples Correlations

	N	Correlation	Sig.
Post--test & Pretest	20	.770	.000

Source: SPSS version 20

The significance value of 0.000 from the paired sample correlation test is less than the threshold of 0.05. This suggests that the pre- and post-test results were significantly correlated.

Table 10. The Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 (Post-test) – (Pre-test)	33.5250	5.8635	1.3111	30.7808	36.2692	25.570	19	.000

Source: SPSS version 20

Table 11. The Result of the Paired Sample t-test

Comparison	t(df)	p-value	Mean Difference	95% CI	Cohen's d	η^2
Experimental Pre vs Post	25.57 (19)	<0.001	33.525	30.78 – 36.27	5.72	.97

In accordance with the table above, the experimental class's Mean pre-test score was 36.99, which was considerably lower than the post-test Mean of 70.50. The standard deviations for both tests were included in the t-test calculation, producing a t-value of 25.570. The obtained value was greater than the critical t- value of 2.093 at the 0.025 significance level with df (19). The effect size (Cohen' s d = 5.72) reflects an exceptionally strong impact of the treatment, indicating that the use of Word Wall greatly enhanced students' speaking skills within a short period.

3.2 Discussion

The main objective of this study was to assess the impact of the Word Wall application on students' speaking skills in an EFL classroom. The results showed that learners who got teaching through the Word Wall application improved their speaking performance much more than those who were taught using traditional approaches. These findings reinforce the idea that digital and interactive learning media can be powerful tools in language instruction, particularly when it comes to enhancing students' oral communication skills.

One of the most prominent findings from this study was the notable improvement in students' speaking sub-skills, particularly in pronunciation, vocabulary usage, and fluency. The improvement in pronunciation can be attributed to the repeated verbal practice that Word Wall encourages through games and oral activities. Fluency, defined by Brown (2001) as the ability to maintain speech flow with minimal hesitation or self-correction, also increased as students were regularly exposed to timed games

that required spontaneous spoken responses. This supports the theory that interactive repetition leads to automaticity, a key element in fluent speech.

These results are consistent with Harmer's (2007) argument that the incorporation of technology in EFL classrooms enhances student motivation and facilitates more meaningful practice opportunities. Unlike traditional teaching, which often involves rote learning and one-way teacher talk, digital platforms like Word Wall promote active engagement and student-centered learning. Students are not only receivers of information but also active participants in creating and using language, which leads to deeper learning and greater speaking confidence.

The positive impact of Word Wall on pupils' vocabulary usage in speaking is especially noteworthy. Vocabulary is an important aspect of speaking, and the capacity to retain and apply the appropriate words is required for clear and meaningful communication. Thornbury (2002) highlights that "vocabulary acquisition is central to language use," and that without an adequate vocabulary, learners cannot express themselves effectively. Word Wall promotes vocabulary learning through visual reinforcement, repetition, and contextual application, allowing children to internalize new words and use them in speaking activities. Hasram et al. (2021) observed comparable results, stating that students who used Word Wall were more likely to employ target language correctly and fluently during speaking activities.

The use of games and interactive activities in Word Wall also contributed to lowering students' speaking anxiety, which is a common barrier in EFL classrooms. Speaking anxiety often arises from fear of making mistakes, being judged by peers, or lack of preparation. According to Cornsberry (2004), interactive media can reduce speaking anxiety by providing a safe and enjoyable space for learners to practice without feeling pressured. Word Wall's game-like design creates a relaxed atmosphere where students can practice orally in pairs or groups, which helps build confidence and reduce fear.

Furthermore, the improvement in students' language proficiency is consistent with constructivist learning theory, which holds that knowledge is acquired via experience and active participation (Vygotsky, as stated in Richards, 2008). By using Word Wall, students are not merely passive observers; they actively construct knowledge by speaking, listening, reacting, and reflecting within the learning task. The interactive features of Word Wall, such as "open the box" and "random wheel," require students to think critically, recall language elements, and respond on the spot—all of which are essential for developing spontaneous and fluent speech.

The findings of this investigation are also consistent with earlier research. Umairoh and Agustina (2023) concluded that Word Wall games increased students' speaking motivation and accuracy, especially in expressing ideas during oral tasks. Aisiyah et al. (2024) similarly found that students who learned through Word Wall participated more actively in speaking activities and showed better retention of language structures. These studies, along with the present research, provide growing evidence that Word Wall is not only effective for vocabulary learning, but also contributes significantly to speaking development. Another key strength of the Word Wall application is its potential to support learner autonomy. Littlewood (2004) argues that giving learners control over their own learning can promote greater responsibility and confidence. Word Wall enables students to complete assignments at their own pace, explore various word categories, and even participate in self-directed speaking games. This level of autonomy, combined with consistent teacher guidance, empowers students to take ownership of their speaking progress.

However, it is important to consider the role of the teacher in maximizing the benefits of digital tools. While Word Wall provides the platform for interaction, the effectiveness of the tool depends on how it is implemented. Teachers must design speaking activities that are meaningful, scaffolded, and aligned with students' proficiency levels. As Richards (2008) suggests, speaking instruction should include both structured input and communicative output, with clear objectives and feedback mechanisms. Despite the favorable findings, the study's limitations must be addressed. The sample size was small and limited to one grade level, which may have an impact on the data' generalizability. In addition, the intervention period was fairy brief. Future research with longer implementation

durations is required to determine whether the gains in speaking ability are sustained over time. Future research could also explore how Word Wall affects different proficiency levels or how it can be integrated with other digital platforms to create a more comprehensive speaking curriculum.

In summary, this study provides compelling evidence that the Word Wall application significantly enhances students' speaking ability. By integrating vocabulary learning with interactive oral tasks, Word Wall supports pronunciation, fluency, vocabulary usage, and confidence—all key components of effective speaking. These results highlight the potential of digital tools to transform traditional language teaching into a more dynamic, participatory, and learner-centered experience.

4. CONCLUSION

This study demonstrated that the Word Wall application significantly improved junior high school students' speaking ability compared to conventional methods. The findings suggest that game-based digital tools can create a more engaging and low-anxiety environment, allowing learners to practice fluency, accuracy, and vocabulary use more effectively.

Nevertheless, this research has certain limitations. The sample size was relatively small and restricted to a single grade level, and the intervention period was limited to four weeks. These factors may reduce the generalizability of the findings. Based on the results, teachers are recommended to integrate digital applications such as Word Wall into speaking instruction. However, effective use requires careful task design, scaffolding, and alignment with learners' proficiency levels.

Future research should extend the duration of interventions to examine long-term effects, involve larger and more diverse student populations, and compare Word Wall with other digital platforms to determine which features are most effective for supporting different speaking sub-skills. Studies could also look into how this tool helps students with different competence levels, styles of learning, or emotional aspects like motivation and anxiety..

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