

The Impact of Using Wordwall Interactive Games on English Vocabulary Acquisition: Evidence From Saudi Arabia

Hassan Ahmed Almuafa

Department of Curriculum and Instruction, College of Education

University of Jeddah, Jeddah, Saudi Arabia

Hassan Saleem Alqurashi (Corresponding author)

Department of Curriculum and Instruction, College of Education

University of Jeddah, Jeddah, Saudi Arabia

E-mail: hsqurashi@uj.edu.sa

Received: February 28, 2025

Accepted: April 8, 2025

Published: April 20, 2025

doi:10.5296/ijl.v17i2.22685

URL: <https://doi.org/10.5296/ijl.v17i2.22685>

Abstract

This study aims to explore the impact of Wordwall interactive games on vocabulary acquisition among Saudi EFL learners. The study participants comprised 100 students from an elementary school in Saudi Arabia. They were equally divided into two groups: the experimental group and the control groups. To achieve this, a quasi-experimental design with the two groups was employed, aligning with the study's nature and objectives. For data collection, the researchers developed an achievement test to evaluate the participants' vocabulary acquisition. The experimental group was taught using Wordwall interactive games, whereas the control group was taught using the traditional approach. The results of the study revealed that employing Wordwall games in teaching and learning English vocabulary yields more gains than using the conventional approach, as the analysis showed statistically significant differences in performance between the two groups: the experimental group performed better in the test than the control group. Based on the findings, the researchers recommended that Wordwall games be used in teaching English vocabulary at all levels.

Keywords: Traditional teaching methods, Vocabulary acquisition, Wordwall interactive games, Saudi EFL learners

1. Introduction

Besides being an international lingua franca, English holds a prominent position as the language of education. A significant portion of publications across various disciplines are either originally written in English or translated into it. Furthermore, numerous institutes and universities around the world use English as the primary language of instruction.

To achieve proficiency in English, learners must focus on building a strong vocabulary, as it forms the foundation for mastering other language skills like speaking, reading, writing, and listening. Vocabulary plays a crucial role in language learning, as it enables learners to communicate effectively in all areas of language use. Without a broad vocabulary and strategies for learning new words, learners may struggle to express themselves and understand the language. Additionally, enhancing vocabulary is essential for successful English learning. Teachers play a key role in improving students' vocabulary and should incorporate innovative techniques and resources, with new media offering promising tools for creative language learning (Alqahtani, 2015).

One of the difficulties that learners of English as a Foreign Language (EFL) face is retaining vocabulary, which leads to frustration and a lack of confidence, while fear of low grades further discourages their efforts, making it harder for them to complete assignments (Purwitasari, 2022). Many students retain new vocabulary only temporarily, struggling to recall it later due to conventional teaching methods that lack interactivity. Teachers often rely on traditional approaches, such as having students read vocabulary, translate it into learners' first language, and explain the meanings, which leads to disinterest and a lack of enjoyment in the classroom (Ainy, 2015).

Numerous studies dealing with the Wordwall interactive games' usefulness in EFL classes have shown their effectiveness in enhancing vocabulary acquisition. In this regard, various studies (e.g., Al-Saleem & Abu Seileek, 2024; Al-Lahham & Abu Sulik, 2023; Purwitasari, 2022) have shown that using Wordwall interactive games is more effective than the traditional approach at improving vocabulary acquisition. These studies support Wordwall's ability to produce engaging, dynamic, and powerful learning environments.

Interactive games are successful at helping students learn new words, especially beginners. Chen (2007) emphasises that games attract students' attention, inspire them, and improve their English language proficiency. According to Bakhsh (2016), games not only inspire students but also keep them alert, engaged, and physically active. Furthermore, according to Wasti (2004), Wordwall is a useful tool for teaching students new vocabulary, raising their phonics and letter awareness, helping them recognise and write letter forms, improving their spelling and reading skills, and helping them make correspondence between letters and sounds.

Wordwall interactive games serve as an effective and engaging tool for learning English. This educational and entertaining platform, originally a computer program, was redesigned as a website in 2016 to enhance accessibility. The platform offers 18 free elements that teachers can utilise to create customised games using ready-made templates or adapt games shared by

other educators. Examples of these interactive activities include Matching Pairs, Match Up, Word Search, Labeled Diagram, Missing Word, Random Cards, Unjumble, Game Show Quiz, Open the Box, Flip Tiles, True or False, Anagram, Image Quiz, Maze Chase, Quiz, Random Wheel, Find the Match, and Group Sort. Both teachers and students can easily switch between these activities, making Wordwall a flexible and user-friendly resource for language learning.

Another advantage is that Wordwall interactive games can easily be used by anyone in the educational process, whether it is a teacher or a student (Ismiyati & Saputri, 2020). By using Wordwall interactive games, the teacher can create an enjoyable environment for the student in which he/she can freely express himself/herself without worry. Allen (2007) mentions that Wordwall interactive games support learning activities such as speaking, reading and writing for students. This type of media can be a source of learning for students, increasing their creativity and enthusiasm in working on problem solving by using this language-based application. Similarly, Lon and Wilfong (2021) believe that the Wordwall interactive game serves as an instructional medium that can enhance students' vocabulary acquisition. The Wordwall method involves interactive instruction through the presentation of words and images in the classroom.

Teachers can support students in building extensive vocabulary skills by adopting contemporary teaching methods that integrate engaging, web-based tools. Wordwall interactive games, as highlighted by Çıla (2021), are educational tools that allow teachers to design personalised vocabulary practice activities using templates or access games created by other educators. Employing Wordwall interactive games in learning makes the process dynamic and more entertaining, which, in turn, improves the learners' willingness to learn vocabulary. Wordwall games provide learners with diverse advantages, such as simplifying the acquisition of new vocabulary items, affirming links between memorisation of vocabulary and language skills, including reading and writing and enhancing students' communication skills. In addition, having an enormous database of drills, teachers may find Wordwall games useful in designing their lessons (Solikah, 2017).

According to Thornbury (2002), learning vocabulary is indispensable since vocabulary item knowledge constitutes the basics of any language. Interactive gaming has proven to be an effective method, providing a relaxed and engaging environment for practising vocabulary while boosting students' confidence and enjoyment. Addressing the low motivation among students to learn English requires innovative and supportive techniques. Wordwall games offer a promising solution, helping students memorise and reinforce vocabulary through fun, competitive, and interactive activities. This research focuses on the impact of Wordwall interactive games on Saudi EFL learners' vocabulary acquisition in elementary schools, comparing this approach to traditional English teaching methods. Specifically, it examines how Wordwall games influence vocabulary learning among Saudi elementary school EFL learners. The findings aim to benefit English teachers, curriculum developers, students, supervisors and researchers. Based on this premise, the following research question arises:

What effect do Wordwall interactive games have on vocabulary acquisition among

elementary school students?

2. Literature Review

2.1 Vocabulary

Vocabulary is a cornerstone of learning English as a foreign language, as emphasised by linguist David Wilkins, who stated: "Without grammar, very little can be conveyed; without vocabulary, nothing can be conveyed" (as cited in Thornbury, 2002, p.13). This highlights that vocabulary is essential for communication, with meaning primarily transmitted through words rather than grammar. Consequently, vocabulary plays a central role in contemporary language research. Vocabulary refers to the words necessary for effective communication, encompassing both expressive vocabulary (used in speaking and writing) and receptive vocabulary (understood in listening and reading) (Neuman & Dwyer, 2009).

Vocabulary acquisition is fundamental to language learning, as it underpins effective communication, comprehension and the development of listening, speaking, reading and writing skills. Schmitt (2000) asserts that "lexical knowledge is central to communicative competence and to the acquisition of a second language" (p. 55), while Nation (2001) emphasises the reciprocal relationship between vocabulary knowledge and language use. Previously overshadowed by grammar and phonology, vocabulary gained prominence in language teaching during the late 20th century, thanks to researchers like Barcroft (2004) and Read (2000). Bromley (2002) highlights the benefits of vocabulary learning, including its positive impact on comprehension, academic achievement, communication and critical thinking. Strong vocabulary knowledge is essential because it enables accurate expression and the comprehension of complicated concepts in both excelling in language education and communicating throughout one's life (Pikulski & Templeton, 2004). Alqahtani (2015) further reaffirms the significance of vocabulary in attaining language proficiency and literacy by stating that it is necessary for applying language structures and functions.

Teachers frequently struggle to provide successful vocabulary instruction because they are unsure of where to concentrate their efforts and lack confidence in ideal practices (Berne & Blachowicz, 2008). Though attaining satisfying results can be challenging, both teachers and students agree that vocabulary acquisition is crucial to effective language instruction (Walters, 2004). Teachers must select appropriate techniques and be well-prepared with effective, up-to-date methods to engage students and make the learning process both meaningful and enjoyable (Alqahtani, 2015).

Vocabulary is commonly divided into two types: active and passive. Harmer (1991) distinguishes between these categories, explaining that active vocabulary refers to the words that students have learned and are expected to use in communication. In contrast, passive vocabulary includes words that students can recognise when encountered but may not be able to pronounce. Similarly, Haycraft, as cited in Hatch and Brown (1995), describes vocabulary as either receptive or productive, aligning with the active-passive distinction.

Schmitt and McCarthy (1997) outline effective vocabulary learning strategies, including guessing word meanings from context, using word parts and mnemonic techniques to

enhance memory and employing vocabulary cards to link foreign words with their native language counterparts. Similarly, Celce-Murcia (2001) highlights three strategies: deriving meanings from context, particularly when it is sufficiently rich in clues; using mnemonic devices like the keyword technique to associate target words with memorable keywords; and maintaining vocabulary notebooks as a tool for independent learning. These approaches help students actively engage with and retain new vocabulary.

2.2 Electronic Educational Games and Wordwall Platform

2.2.1 Electronic Educational Games

Electronic educational games have various definitions, all emphasising their blend of entertainment and education. Al-Rubaie et al. (2004) describe them as software that combines fun with learning, creating an engaging atmosphere where students solve problems through play, thus fostering a sense of challenge. Al-Nabulsi (2018) characterises these games as either ready-made or custom-designed, designed to be entertaining and educational, with specific objectives to be achieved through structured rules. Al-Omari and Al-Shanqeeti (2019) define them as games played on electronic devices, featuring multimedia elements like video clips and sounds, and involving tasks and scoring systems, all while pursuing defined educational goals.

By creating an interactive learning environment, electronic educational games are very good at drawing students in and helping them comprehend information, facts, and concepts. Through visual and aural impacts, they enhance learning and provide a more pleasurable alternative to conventional teaching techniques. They also assist students in becoming proficient in using computers and smartphones (Al-Mughazi, 2018). In addition to supporting social development through cooperative play and teaching students how to accept losses without becoming frustrated, these games improve cognitive capacities by cultivating skills in synthesis, analysis, and creativity (Himal, 2018). They also increase motivation, engagement, and focus, which help students retain knowledge longer. These kinds of games are very helpful for students who struggle with learning or who are shy or afraid in class (Al-Zuhari, 2022).

2.2.2 Wordwall Platform

Digital game content is tightly incorporated into instructional strategies to increase students' motivation and engagement, demonstrating the critical role that technology plays in education. Learning achievement is greatly enhanced by interactive digital games that are tailored to the students' needs. This strategy is demonstrated by platforms such as Wordwall, which provides interactive games and challenges for game-based evaluations. Wordwall can be used by educators to provide assignments, assess student performance and support distance learning. It also works well as an online teaching platform for classroom instruction, enhancing student engagement and interaction (Mazelin et al., 2022).

As a teaching tool, the Wordwall platform has many advantages, including interoperability with computers and smart devices, 18 customisable templates, and free access to basic capabilities (Skala, 2019). It promotes a competitive and interesting learning environment by

supporting multilingual use, including Arabic, and enabling students to access games through shared links without registration. As for teachers, they can utilise Wordwall for both in-person and remote learning, download scores, and print tasks in PDF format. Nevertheless, shortcomings include the inability to change text size, the cap of five free games per account, and difficulties in tracking cheating because of how simple it is to access at home (Hamzanwadi, 2022). Notwithstanding these limitations, Wordwall fosters an enjoyable learning environment that improves student engagement, motivation, and cognitive abilities, all of which contribute to better learning outcomes (Behnamnia et al., 2020).

Wordwall interactive games have been shown to have a positive effect on the learning process in earlier research on vocabulary acquisition. In this regard, Al-Saleem and Abu Seileek (2024) looked into how Wordwall interactive games affected the speech abilities of EFL students in the tenth grade. Forty-two students from Al-Hamra Secondary School for Girls participated in the study; they were split into two groups: an experimental group, which used Wordwall games, and a control group, which received conventional education. Students' speaking and listening abilities were assessed using pre- and post-tests. The study finds that the experimental group's performance had significantly improved. According to the study, using Wordwall in language instruction can enhance the development of speaking skills. Similar results were reported in a study conducted by Al-Lahham and Abu Sulik (2023), who looked at how Wordwall interactive games affected seventh-grade Jordanian students' vocabulary development. Forty students participated in the study; they were split into two groups: one that used Wordwall for the experimental portion of the study and the other that received conventional instruction. Vocabulary knowledge was assessed in both groups beforehand, and post-tests were administered following 24 lessons. The experimental group's results showed notable gains, indicating that Wordwall had a beneficial effect on vocabulary acquisition.

Purwitasari (2022) investigated the degree to which the Wordwall software was successful in helping seventh-grade students at MTsN 4 Magetan improve their vocabulary mastery. With 49 students divided into an experimental group (26 students) and a control group (23 students), the study used a quasi-experimental approach. Data were gathered using pre- and post-tests. The results of the study revealed that the experimental group's mean post-test score (84.13) was considerably higher than that of the control group (75.19). This demonstrated that Wordwall increased students' interest and active involvement in learning English while also greatly improving students' vocabulary acquisition.

Alpatikah (2022) investigated how well first-grade students at MTs Negeri 10 Jakarta used the Wordwall.net platform to increase their vocabulary proficiency. Students in the first grade were split into experimental and control groups for this quasi-experimental study. Multiple-choice examinations were administered both before and after the experiment. The results of the analysis demonstrated that although the pre-test scores did not change significantly, the experimental group outperformed the control group, suggesting that Wordwall improved vocabulary knowledge.

Hasram et al. (2021) conducted a study on the use of Wordwall in vocabulary instruction. The

participants were 150 students from two universities. Over the course of two weeks, the study used formative evaluations and contrasted Wordwall's efficacy with that of conventional paper-based exams. The findings demonstrated that non-traditional teaching strategies, such as those supported by Wordwall, were more successful in improving students' vocabulary acquisition.

At SDN 1 Mambang School, Pradini and Adnyayanti (2022) investigated the use of Wordwall in teaching English vocabulary to young students. The study employed a one-shot case design and focused on vocabulary elements such as nouns, verbs, and adjectives. With a 73.33-point rise, the post-test results demonstrated a noteworthy improvement in the student's vocabulary learning. This implies that Wordwall successfully increases students' vocabulary acquisition.

Triariani (2020) looked into how well Wordwall media helped students at SMPN 1 Siman Ponorogo improve their vocabulary competence. Two groups participated in the study; one group used Wordwall medium, while the other group received conventional education. The experimental group outperformed the control group in vocabulary mastery, according to the results, which revealed a statistically significant difference between the two groups. According to the study's findings, Wordwall greatly enhanced students' command of vocabulary.

The usefulness of Wordwall in improving vocabulary acquisition and student engagement in informal learning environments was investigated by Asryad (2024). Wordwall's interactive features greatly increased student engagement and vocabulary use and control, according to a qualitative case study that included semi-structured interviews with sixteen students. Nonetheless, certain difficulties were observed, including trouble answering longer questions and using new language. The study underlined how crucial it is to incorporate digital resources like Wordwall in order to create a more successful and inclusive learning environment.

3. Method

To accomplish its goals, the study used a quasi-experimental design with two groups (experimental and control). In order to minimise outside influences and ensure the validity of the results, the experimental design comprised pre- and post-tests for both the experimental and control groups. By employing this approach, the study produced trustworthy and perceptive results and provided a thorough grasp of Wordwall's influence on vocabulary development.

3.1 Research Population

The research population refers to the group of individuals from which a study's statistical sample is drawn (Momoh, 2022). This study specifically targeted a convenient sample of fourth, fifth, and sixth-grade students from a primary school under the Ministry of Education during the academic year 2024. The participants were aged between 10 and 12 years.

3.2 Participants

The study involved 100 male students from an elementary school in Saudi Arabia during the first semester of the academic year 2024. Participants were pre-divided into two sections by the school administration. These sections were then randomly assigned into two equal groups: an experimental group taught using Wordwall interactive games and a control group taught

through traditional methods.

3.3 The Implementation of the Wordwall Interactive Games

The implementation of Wordwall interactive games for vocabulary acquisition lasted one academic month. A week prior to using the Wordwall platform, the teacher introduced the students to the interactive games, explaining their features and how they differ from traditional classroom methods. The teacher also addressed students' questions and concerns regarding the platform and discussed the tasks they would be expected to complete. To conduct the study, the following steps were followed:

1. Obtaining a facilitation letter to support the research activities.
2. Selecting a school for the study and coordinating with the administration to implement the experiment.
3. Choosing students and dividing them into two groups: experimental and control.
4. Designing the test, ensuring its reliability, and conducting a pilot study to verify its validity.
5. Administering a pre-test to both groups to assess their initial levels.
6. Teaching the experimental group using interactive Wordwall games, while the control group received instruction through traditional methods.
7. Conducting a post-test for both groups after the teaching phase, collecting data, and analysing the results.

3.4 Research Instruments

3.4.1 Vocabulary Acquisition Test

The test was developed based on content from the third unit of the fourth, fifth, and sixth-grade English curriculum (*Top Goal 1*), ensuring alignment with the study's focus on vocabulary acquisition. The test consisted of 20 questions, incorporating multiple-choice, true/false and word-meaning matching formats. Both groups were tested twice: before and after the intervention, to allow the researchers to identify the impact of using Wordwall games in teaching English vocabulary.

3.4.2 The Validity of the Test

Face Validity

The test was evaluated by experts in language education and curriculum development. Their role was to ensure that the test items were appropriate for measuring the targeted vocabulary acquisition among primary school students. The experts examined the test, made suggestions for better wording of particular items, and made sure that it was in line with the students' learning goals and skill levels. The necessary changes were made to improve the test's validity in response to the experts' feedback.

Validity of the Test Based on Difficulty, Discrimination, and Ease Indices

The test was given to a sample of fourth, fifth-, and sixth-grade students who were not part of the main research group in order to guarantee its construct validity. The aim was to evaluate the test's discrimination, ease and difficulty indices. While the ease index showed the percentage of students who answered a question correctly, the difficulty index calculated the percentage of students who gave an incorrect response. The discrimination index evaluated each question's capacity to distinguish between students in the upper and lower groups who performed well and poorly. Standard formulas were used to determine these indices. The results are shown in Table 1, below.

Table 1. The difficulty, discrimination, and ease indices

Item number	Correct answer	Incorrect answer	Total of responses	Ease Index	Difficulty Index	Discrimination Index
Q1	26	14	40	65%	35%	50%
Q2	29	11	40	72.5%	27.5%	55%
Q3	24	16	40	60%	40%	60%
Q4	23	17	40	57.5%	42.5%	45%
Q5	21	19	40	52.5%	47.5%	85%
Q6	23	17	40	57.5%	42.5%	85%
Q7	23	17	40	57.5%	42.5%	85%
Q8	25	15	40	62.5%	37.5%	65%
Q9	23	17	40	57.5%	42.5%	75%
Q10	21	19	40	52.5%	47.5%	65%
Q11	21	19	40	52.5%	47.5%	55%
Q12	23	17	40	57.5%	42.5%	85%
Q13	23	17	40	57.5%	42.5%	85%
Q14	20	20	40	50%	50%	80%
Q15	19	21	40	47.5%	52.5%	65%
Q16	22	18	40	55%	45%	70%
Q17	27	13	40	67.5%	32.5%	65%
Q18	24	16	40	60%	40%	70%
Q19	24	16	40	60	40%	60%
Q20	23	17	40	57.5	42.5%	85%

The analysis of Table 1 demonstrates that the test items are balanced, appropriate to the students' cognitive levels and valid for measuring the intended objectives. The exam items are relatively easy and appropriate for the target students' skill level, according to the ease index scores, which ranged from 47% to 72%. The test was balanced and successfully assessed different levels of vocabulary acquisition, as seen by the difficulty index value, which varied from 27% to 52%. Furthermore, the test's significant capacity to differentiate between students with higher and lower levels of vocabulary acquisition was indicated by the discrimination

index values, which varied from 55% to 85%. These findings confirm the test's credibility, accuracy, and effectiveness in assessing individual differences.

3.5 The Reliability of the Test

To ensure the test's reliability over time, the researchers employed this method by administering the test to a pilot sample of 13 students outside the main study group. A week later, the test was re-administered to the same sample. Table 2 displays the students' scores from both test administrations.

Table 2. Students' test scores

Student	Y	x	y ²	x ²	Xy
1	12	12	144	144	144
2	11	11	121	121	121
3	18	18	324	324	324
4	16	14	256	196	224
5	9	11	81	121	99
6	9	9	81	81	81
7	10	10	100	100	100
8	9	9	81	81	81
9	17	12	289	144	204
10	9	7	81	49	63
11	18	18	324	324	324
12	9	10	81	100	90
13	16	18	256	324	288
Sum	163	159	2219	2109	2143

$$r = \sqrt{\frac{1942}{2205.95}} = 0.93$$

After calculating the values, Pearson's correlation coefficient was determined to be 0.88, indicating a strong positive correlation between the pre-test and post-test results. This high value demonstrates that the test exhibits a high degree of stability and consistency in measuring performance, with closely aligned outcomes across the two testing periods.

3.6 Normal Distribution of the Data

To verify that the data followed a normal distribution and to select the appropriate statistical analysis method, the researchers assessed the normality of the data using the Kolmogorov-Smirnov and Shapiro-Wilk tests. The following, Table 3, presents a description of the results.

Table 3. Description of the results

Test Type	Group Type	Kolmogorov-Smirnov ^a			
		Statistic	df	Sig.	Statistic
Pre - Test Scores	Experimental Group	0.103	50	.200*	0.971
	Control Group	0.109	50	0.196	0.973
Post - Test Scores	Experimental Group	0.102	50	.200*	0.960

Table 3 presents the results of the Kolmogorov-Smirnov test, which show that the statistical values for all data in both the experimental and control groups were greater than 0.05. This indicates that the data follow a normal distribution. Therefore, the independent samples t-test will be used to compare the experimental and control groups.

4. Results and Discussion

The results are presented in relation to the research question: What effect do Wordwall interactive games have on vocabulary acquisition among elementary school students?

4.1 The Effect of Wordwall Interactive Games on Students' Vocabulary Acquisition

An independent sample t-test was conducted to determine the significance of the differences between the post-test scores of the two groups. The results are presented in Table 4.

Table 4. The independent sample t-test of the vocabulary acquisition post-test

Group Type	Statics			T. Value	Sig. (2 -Tailed)	The statistical Significance
	Number	Mean	Standard Deviation			
Experimental Group	50	14.40	3.262	4.326	0.000	Statically Significance
Control Group	50	10.94	4.047			

The results in Table 4 clearly demonstrate a significant difference between the experimental and control groups on the post-test. The t-value of 4.326, with a probability value of $p = 0.000$, indicates that the difference is statistically significant and not due to chance, suggesting a real effect of Wordwall on the experimental group. The average score for the experimental group was 14.40 (with a standard deviation of 3.262), while the control group had an average score of 10.49 (with a standard deviation of 4.047). These findings make clear

that the use of interactive learning tools like Wordwall significantly enhances vocabulary acquisition compared to traditional teaching methods.

4.2 The Effect Size (η^2)

The effect size (η^2) was calculated to assess the extent of the impact of using Wordwall interactive games on vocabulary acquisition. Using the obtained t-value ($t = 4.326$) and the total sample size ($n = 100$), the effect size was determined as follows:

$$\eta^2 = \frac{t^2}{t^2 + (N - 2)} = \frac{18.713}{116.713} = 0.16$$

According to Cohen's (1988) guidelines,

- 0.01 = small effectiveness.
- 0.06 = medium effectiveness.
- 0.14 and more = large effectiveness.

In this study, the effect size (η^2) was calculated to be 0.16, indicating that 16% of the variance in vocabulary acquisition can be attributed to the use of Wordwall interactive games. The considerable effect size underlines the substantial effect that Wordwall games have on the performance of the participants. Based on the findings, the researchers assert that Wordwall games, as a teaching instrument, are effective and able to increase learners' motivation for English vocabulary acquisition, which ultimately enhances their memory retention and strong, long-lasting vocabulary knowledge.

As evident in the above analysis, the findings of the study showed that the Wordwall interactive games group (the experimental group) demonstrated strikingly more gains in vocabulary acquisition than the group that received traditional education (the control group), which implies that employing interactive games such as Wordwall in teaching vocabulary can successfully improve students' ability to learn a new language. Wordwall encouraged improved vocabulary retention and comprehension by immersing learners in an entertaining, game-based setting, which is important for language development in elementary education. The findings further demonstrate that the experimental group's improved language learning was not a coincidence. The assumption that using Wordwall interactive games in the classroom has a significant impact on students' vocabulary development is further supported by the statistical significance.

In terms of results, the present study aligns with numerous previous studies that explored the impact of interactive games, particularly the Wordwall platform, on vocabulary acquisition. For example, Wordwall helped seventh-grade students acquire more vocabulary, according to Alpatikah (2022), who also discovered that the experimental group performed better on the post-test than the control group. In a similar vein, Hasram et al. (2021) showed that interactive techniques, such as Wordwall, were superior to conventional techniques in improving

vocabulary acquisition. Wordwall's capacity to promote student vocabulary acquisition was demonstrated by Pradini and Adnyayanti (2022), who found that it considerably increased students' gains in nouns, verbs and adjectives. These studies collectively confirm Wordwall's beneficial effects on vocabulary acquisition, which, in turn, support the findings of the current study.

5. Conclusion

The main objective of this study is to examine the impact of Wordwall interactive games on vocabulary acquisition among Saudi EFL learners. The results of the study showed that primary school students' vocabulary development was significantly impacted by Wordwall interactive games. A large effect size and statistically significant results showed that the experimental group, which utilised Wordwall, performed better than the control group in vocabulary learning. These results imply that interactive games can be crucial in boosting vocabulary acquisition in elementary school and confirm the increasing amount of research showing how well digital resources, like Wordwall, can improve language learning. Based on the findings of the present study, the researchers recommend that Wordwall interactive games be used in teaching and learning English vocabulary, including all levels.

Despite the fruitful results of the study, limitations exist. First, the study focused on young EFL learners. Greater insight into the usefulness of interactive games could be gained if adult learners, such as university students, were included. Future research may compare the impact of such games on both young and adult EFL learners. Furthermore, researchers are encouraged to explore the attitudes of EFL learners towards employing Wordwall interactive games in vocabulary learning classes. Second, this study involved only male participants. Future studies may examine the impact of Wordwall games on both male and female participants, as well as their attitudes towards using them in their learning.

References

- Ainy, F. (2015). The effectiveness of Wordwall strategy on students' vocabulary mastery. *Borderless Communities & Nations with Borders*, 381.
- Al-Lahham, A. S. M., & Abu Suilik, A. F. M. (2023). *The effect of using Wordwall interactive games on the 7th basic grade students' vocabulary acquisition and their attitudes toward them in Jordan* (Unpublished master's thesis). Al al-Bayt University. Retrieved from <http://search.mandumah.com/Record/1400807>
- Allen, J. (2007). *Inside words: Tools for teaching academic vocabulary*. Grade Publishers, Stenhouse.
- Al-Mughazi, A. (2018). Standards for employing electronic games in developing some values among primary school children from the perspective of teachers in light of certain variables. *Journal of the Faculty of Education - Al-Azhar University*, 37(177), 299-343.
- Al-Nabulsi, M. (2018). The impact of using linguistic electronic games in developing oral differentiation skills among first-grade students in Sakaka City, Saudi Arabia. *Journal of the Faculty of Education - Alexandria University*, 28(1), 149-172.

Al-Omari, A., & Al-Shanqeeti, O. (2019). The effectiveness of using specialized electronic gaming technology in developing skills for producing digital materials and creative thinking skills in the educational environment among postgraduate students. *Journal of the Islamic University for Educational and Psychological Studies*, 27(2), 629-661.

Alpatikah, E. (2022). *The effect of using Wordwall.NET on students' vocabulary mastery* (Bachelor's thesis). FITK UIN Syarif Hidayatullah, Jakarta.

Alqahtani, M. (2015). The importance of vocabulary in language learning and how to be taught. *International Journal of Teaching and Education*, 3(3), 21-34. <https://doi.org/10.20472/TE.2015.3.3.002>

Al-Rubaie, M., Al-Junidi, M., Desouki, A., & Al-Jabiri, A. (2004). *Distance education and its technologies in the third millennium*. Riyadh: King Fahd Library.

Al-Saleem, A., & Abu Seileek, A. (2024). *The effect of using Wordwall interactive games on 10th grade EFL students' oral skills and their attitudes toward them* (Unpublished master's thesis). Al al-Bayt University.

Al-Zuhari, M. (2022). The effect of using electronic language games in developing fast reading skills among second-grade preparatory students. *Journal of Adult Education*, 4(2), 231-252.

Arsyad, M. (2024). Harnessing Wordwall for enhanced vocabulary acquisition and engagement in non-formal elementary education. *JOLLT Journal of Languages and Language Teaching*, 12(4), 2064-2075. <https://doi.org/10.33394/jollt.v12i4.12020>

Bakhsh, S. A. (2016). Using games as a tool in teaching vocabulary to young learners. *English Language Teaching*, 9(7), 120-128. <https://doi.org/10.5539/elt.v9n7p120>

Barcroft, J. (2004). Second language vocabulary acquisition: A lexical input processing approach. *Foreign Language Annals*, 37(2), 200-208. <https://doi.org/10.1111/j.1944-9720.2004.tb02193.x>

Behnamnia, N., Kamsin, A., & Ismail, A. B. (2020). The landscape of research on the use of digital game-based learning apps to nurture creativity among young children: A review. *Journal of Thinking Skills and Creativity*, 37(3), 29-37. <https://doi.org/10.1016/j.tsc.2020.100666>

Berne, J., & Blachowicz, C. (2008). What reading teachers say about vocabulary instruction: Voices from the classroom. *The Reading Teacher*, 62(4), 314-323. <https://doi.org/10.1598/RT.62.4.4>

Bromley, K. D. (2002). *Stretching students' vocabulary*. New York: Scholastic Professional Books.

Celce-Murcia, M. (2001). Language teaching approaches: An overview. In M. Celce-Murcia (Ed.), *Teaching English as a second or foreign language* (pp. 3-11). Boston: Heinle, Cengage Learning.

- Chen, J. L. (2007). *Using games in teaching English to preschool students* (Unpublished master's thesis). National Dong Hwa University, Hualin, Taiwan.
- Çila, E. (2021). The effect of using Wordwall.net in increasing vocabulary knowledge of 5th grade EFL students. *Language Education & Technology (LET Journal)*, 1(1), 21-28.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. L. Erlbaum Associates.
- Hamzanwadi, A. N. (2022). *Applying the bifurcated learning model to social science subjects at the Government Educational School, Jember 1, for the 67 academic year 2021/2022*. Retrieved from Kiai Haji Achmad Siddiq Jember State Islamic University.
- Harmer, J. (1991). *The practice of English teaching*. London & New York: Longman.
- Hasram, S., Nasir, M. K. M., Mohamad, M., Daud, M. Y., Abd Rahman, M. J., & 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>
- Hatch, E., & Brown, C. (1995). *Vocabulary, semantics, and language education*. Cambridge: Cambridge University Press.
- Himal, F. (2018). *Children and electronic games through new media platforms*. Amman: Dar Al-Khaleej Publishing and Distribution.
- Ismiyati, W. L., & Sapulri, T. (2020). Using Wordwall to improve English vocabulary mastery: A systematic review. *Jurnal Pendidikan Dan Pembelajaran*, 12(2), 120-131.
- Lon, W., & Wilfong, J. (2021). *Vocabulary strategies that work: Do this-not that*. New York: Eye on Education.
- Mazelin, N., Maniam, M., Jeyaraja, S., Ng, M., Xinaoqi, Z., & Jingjing, Z. (2022). Using Wordwall to improve students' engagement in ESL classroom. *International Journal of Asian Social Science*, 12(8), 273-280. <https://doi.org/10.55493/5007.v12i8.4558>
- Momoh, O. (2022). Population definition in statistics and how to measure it. *Investopedia*. Retrieved from <https://www.investopedia.com/terms/p/population.asp>
- Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Neuman, S. B., & Dwyer, J. (2009). Missing in action: Vocabulary instruction in pre-k. *The Reading Teacher*, 62(5), 384-392. <https://doi.org/10.1598/RT.62.5.2>
- Pikulski, J., & Templeton, S. (2004). *Teaching and developing vocabulary: Key to long-term reading success*. USA: Houghton Mifflin Company.
- 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>

- Purwitasari, E. (2022). *The effectiveness of Wordwall application in improving students' vocabulary mastery at MTsN 4 Magetan* (Bachelor's thesis). State Institute of Islamic Studies Ponorogo. Retrieved from <http://etheses.iainponorogo.ac.id/id/eprint/19900>
- Read, J. (2000). *Assessing vocabulary*. United Kingdom: Cambridge University Press.
- Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge: Cambridge University Press.
- Schmitt, N., & McCarthy, M. J. (Eds.). (1997). *Vocabulary: Description, acquisition, and pedagogy*. Cambridge: Cambridge University Press.
- Skala, J. L. (2019). The effects of digital games on engagement and motivation. *The St. Catherine University Repository*, 1-37.
- Solikah, S. (2017). *The effectiveness of using Wordwall to improve seventh grader's vocabulary mastery at MTs Aswaja Tunggangri Tulungagung in academic year 2016/2017* (Bachelor's thesis). State Islamic Institute (IAIN) of Tulungagung.
- Thornbury, S. (2002). *How to teach vocabulary*. Essex: Longman.
- Triariani, R. (2020). *The effectiveness of Wordwall media to improve students' vocabulary mastery in learning English at the seventh grade of SMPN 1 Siman Ponorogo in academic year 2019/2020* (Bachelor's thesis). State Institute for Islamic Studies of Ponorogo.
- Walters, J. M. (2004). Teaching the use of context to infer meaning: A longitudinal survey of L1 and L2 vocabulary research. *Language Teaching*, 37(4), 243-252. <https://doi.org/10.1017/S0261444805002491>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>)