

The Implementation of Wordwall Anagram Game to Improve Students Vocabulary Mastery

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Abstract. The goal of this study was to ascertain if fourth-grade students at SD Aisyiyah 1 Pagaram who studied through the Wordwall Anagram Game and those who were taught using traditional education differed significantly in their vocabulary proficiency. This study used a quasi-experimental design and a quantitative methodology. 78 fourth-graders made up the population, and 53 children from two chosen classes of grade IV made up the sample, class IV.B. as the control group and class A as the experimental group. A vocabulary test with thirty multiple-choice questions was used to collect data. It was given as a pre-test and a post-test to gauge students' vocabulary proficiency before and after the intervention. Using SPSS version 25, descriptive statistics, the paired sample t-test, and the independent sample t-test were used to evaluate the collected data. The findings showed that pupils in the experimental group outperformed those in the control group in terms of vocabulary scores. The Wordwall Anagram Game allowed children to practice vocabulary through interactive exercises, which enhanced their spelling, clarified concepts, and facilitated word memory. Additionally, because the tasks were presented in a more entertaining and captivating manner, students demonstrated increased interest, engagement, and motivation throughout the learning process. After the treatment, there was a substantial difference between the experimental and control groups, according to the statistical results. Therefore, it can be said that the Wordwall Anagram Game's deployment improved students' vocabulary mastery at SD Aisyiyah 1 Pagaram's fourth grade.

Keywords: Wordwall, Anagram game, Vocabulary mastery, English learning, Elementary students

1. INTRODUCTION

Vocabulary is regarded as one of the most significant components of language learning since it aids learners in efficiently communicating both orally and in writing. Students may find it challenging to communicate, comprehend information, and express ideas if they lack a sufficient vocabulary [1], [2]. Vocabulary is defined as a group of terms utilized in language communication. In a similar vein, Defines vocabulary as the terms that students must be familiar with in order to successfully communicate, especially when speaking and listening [3], [4]. As a result, mastering vocabulary entails more than just memorizing words; it also entails comprehending their meanings and using them correctly in various communication circumstances. Vocabulary thus becomes a crucial component that aids in pupils' language development.

Vocabulary mastery is an important foundation for learning English in primary school because it allows pupils to grasp classroom topics and participate effectively in learning activities [5]. Highlights that learning vocabulary is a crucial part of learning a foreign language, particularly for younger students. Pupils who have a large enough vocabulary are more likely to comprehend reading materials, follow instructions from teachers, and successfully communicate their thoughts both orally and in writing. Additionally, the development of other language skills, such as speaking, listening, reading, and writing, is greatly aided by vocabulary mastery. When learning English as a second language, a small vocabulary frequently becomes a barrier that keeps students from becoming more proficient in the language. Supporting this idea argues that vocabulary mastering has a significant impact on pupils' overall English performance. Therefore, one of the main goals of English language instruction at the elementary school level should be to increase pupils' vocabulary proficiency [6].

However, school observations show that many elementary school pupils, including those at SD Aisyiyah 1 Pagaram, still find it difficult to master English language. Many fourth-grade kids continued to struggle with learning English vocabulary, according to initial observations and casual interactions with the English teacher. Because spelling and pronunciation varied, students frequently have trouble pronouncing words correctly. Additionally, when answering vocabulary-related questions during class

activities, pupils frequently made spelling mistakes and lacked confidence [7], [8]. Students' lack of enthusiasm and drive to study English was another issue noted. Many students found English to be harder to grasp and less fun, which led to passive classroom involvement and less successful learning results. One of the most frequent challenges elementary school pupils face when learning English is mastering vocabulary [9]. This state aligns with the issues that the researcher at SD Aisyiyah 1 Pagaram found. Therefore, by investigating the use of an interactive learning medium, this study tackles the issue of students' poor vocabulary mastery and low engagement in learning English.

Digital learning resources can be used as an alternative to address these issues and help students become more proficient in language. Digital game-based learning materials have been shown to have beneficial effects on students' vocabulary development in earlier research. Students' vocabulary understanding and classroom engagement were greatly enhanced via interactive learning activities. [10]. Some previous study mentioned learning by playing games is able to raise the student's comprehension in ELT [11]-[15]. One of them is Wordwall is an interactive digital platform that can be used flexibly in both online and in-person learning environments, allowing teachers to design game-based learning activities [18]. Among its many advantages, the anagram game is said to be appropriate for vocabulary development since it helps students improve their spelling and vocabulary retention by encouraging them to arrange letters into meaningful phrases. Additionally, because Wordwall blends educational exercises with entertaining gameplay that supports kids' cognitive and psychological development, it is especially suitable for primary school pupils. Wordwall-based instruction improved students' engagement, motivation, and vocabulary retention. [16]. Additionally, because Wordwall promoted active engagement and offered prompt feedback, it greatly increased students' vocabulary achievement as compared to traditional teaching techniques. [17]. These results suggest that students' vocabulary growth and classroom engagement might be positively impacted by digital game-based learning materials. Wordwall is one of the online learning resources that can be included into English instruction.

Although prior studies have demonstrated Wordwall's value in vocabulary acquisition, there are still a number of disadvantages. examined the use of Wordwall to assist seventh-grade students in employing a Classroom Action Research (CAR) design to increase their vocabulary proficiency and involvement. [19]. However, the study only examined one classroom and lacked a reference group, which limited the generalizability of the findings. Additionally, most previous studies focused on junior high school students and examined vocabulary development and classroom engagement without actually looking at how the Wordwall Anagram Game was used with primary school students. Few studies have employed a quasi-experimental design with both experimental and control groups, especially at the primary school level.

Thus, by examining the use of the Wordwall Anagram Game among fourth-grade children at SD Aisyiyah 1 Pagaram using a quantitative quasi-experimental methodology, this study aims to close the current research gap. This study is novel in three ways: first, it focuses on Wordwall's anagram feature; second, it looks at elementary school students, especially those in the fourth grade; and third, it uses both experimental and control groups to give a more thorough understanding of how well Wordwall improves students' vocabulary mastery.

The goal of this study is to ascertain if fourth grade pupils at SD Aisyiyah 1 Pagaram who are taught using the Wordwall Anagram Game and those who are not have significantly different vocabulary competence. The following formulation of the research questions for this study is based on the rationale given above: Are fourth grade students at SD Aisyiyah 1 Pagaram who are taught using the Wordwall Anagram Game significantly different from those who are not in terms of their Vocabulary mastery?

2. METHOD

Research Design

This study used a quantitative research method with a quasi-experimental design to determine whether there was a significant difference in vocabulary mastery between fourth-grade students taught using the Wordwall Anagram Game and those taught using traditional teaching methods at SD Aisyiyah 1 Pagaram. A quasi-experimental design [20], includes an experimental group and a control group but does not give researchers complete control over outside factors that could affect the study process. An experimental group and a control group participated in this investigation. The Wordwall Anagram Game was used to teach vocabulary to the experimental group, while traditional teaching techniques were used to instruct the control group.

Participants

Students in the fourth grade at SD Aisyiyah 1 Pagaram during the academic year 2026 participated in this study. 78 pupils from three fourth-grade classes made up the population. However, 53 students who were chosen through purposive sampling were included in the sample. Class IV.B, which had 27 students, was designated as the control group, while Class IV.A, which had 26 students, was designated as the experimental group. These courses were chosen because they reflected the general state of fourth-grade children and shared comparable learning traits.

Instrument

The instrument used in this study was a vocabulary test in the form of 30 multiple-choice questions related to English vocabulary materials, including time, daily activities, kinds of vehicles, school uniforms, and daily routines. The test was administered twice as a pre-test and a post-test to both the experimental and control groups. The pre-test aimed to identify students' initial vocabulary mastery before the treatment, while the post-test was conducted to measure students' vocabulary mastery after the implementation of the Wordwall Anagram Game. Each correct answer received one point, while incorrect answers received zero points. The total scores were then converted into a scale ranging from 0 to 100.

Validity and Reliability

Prior to the main study, the instrument was piloted in a fourth-grade class that did not engage in the research to assess the test item quality, including validity, reliability, item difficulty, and discrimination index. To make sure the test items reflected the vocabulary and learning objectives covered during the study, content validity was used. To make sure the instrument was suitable for fourth-graders, the researcher conferred with the academic adviser and English teacher. [20] The degree to which an instrument measures what it is supposed to measure accurately is referred to as validity. Furthermore, the instrument's reliability coefficient of 0.860 demonstrated a very high degree of reliability and confirmed that it was appropriate for gauging students' vocabulary competence.

Data Collection

The data were collected through pre-test and post-test procedures. The pre-test was administered before the treatment to determine students' initial vocabulary mastery, while the post-test was conducted after the treatment to measure students' improvement in vocabulary mastery. The treatment was implemented over six meetings. During the treatment, students in the experimental group learned vocabulary through the Wordwall Anagram Game by arranging scrambled letters into meaningful English words using the Wordwall platform. The teacher guided students through interactive vocabulary activities and provided immediate feedback during the learning process. In contrast, students in the control group learned vocabulary through conventional teaching methods, including explanation, repetition, memorization, and written exercises guided by the teacher.

Data Analysis

The collected data were analyzed quantitatively using SPSS version 25. First, descriptive statistics were used to compare the vocabulary competence of the students before and after the intervention. Additionally, a paired sample t-test was used to assess if the experimental group's pre-test and post-test scores significantly improved following the use of the Wordwall Anagram Game. An independent sample t-test was also employed to compare the post-test scores of the experimental and control groups in order to determine whether there was a significant difference in vocabulary mastery between students taught using the Wordwall Anagram Game and those taught using conventional teaching methods. A significance level of 0.05 was used to test the hypothesis. The alternative hypothesis (H_a), which indicated a significant difference between the two groups, was accepted if the significance value was less than 0.05. On the other hand, the null hypothesis (H_0) was accepted if the significance value was greater than 0.05.

Ethical Consideration

The administration and the English instructor of SD Aisyiyah 1 Pagaram gave their consent before the study could begin. The researcher made sure that the students' involvement was only used for instructional and scientific goals. Additionally, during the study, all information gathered was kept private and utilized exclusively for scholarly purposes.

3. FINDINGS

The results of the research were derived from the pre-test and post-test administered to fourth-grade students at SD Aisyiyah 1 Pagaram. The participants were divided into two groups: a control group that received instruction using traditional methods and an experimental group that received instruction using the Wordwall Anagram Game. The tests were designed to evaluate students' vocabulary skills before and after the intervention was implemented. The pre-test was administered before the treatment to determine the students' initial vocabulary knowledge, and the post-test was administered after the treatment to determine the students' vocabulary growth following the learning process.

Table 1. Pre-test and Post-test Results of Experimental and Control Groups

No	Group	N	Pre test	Post test
1	Control	27	44.52	72.93
2	Experimental	26	47.92	83.38

(Source: Research Data, 2026)

Both groups showed improvements in vocabulary knowledge after the learning procedure, as Table 1 illustrates. The experimental group that learned through the Wordwall Anagram Game improved more than the control group. Students in both groups' vocabulary achievement was very similar and remained poor prior to the intervention, indicating that they were still struggling with English language comprehension. Following the treatment, students in the experimental class showed enhanced vocabulary performance, suggesting that using the Wordwall Anagram Game increased students' vocabulary proficiency. Furthermore, a significant difference between the experimental and control groups was found in the statistical analysis after the treatment, indicating that the Wordwall Anagram Game was effective in expanding students' vocabulary.

4. DISCUSSIONS

The results of this study indicate that the implementation of the Wordwall Anagram Game positively affected students' vocabulary mastery among fourth-grade students at SD Aisyiyah 1 Pagaram. The increase in students' vocabulary achievement suggests that interactive and game-based learning activities can provide more effective vocabulary instruction than conventional teaching approaches. Vocabulary mastery is an essential component of language learning because learners require sufficient vocabulary knowledge to understand meaning and communicate successfully. Vocabulary plays a central role in language learning as it supports learners in expressing ideas and understanding messages during communication [21],[22]. Likewise, Vocabulary functions as a key element in communication, helping learners deliver thoughts, ideas, and feelings effectively [23], [24]. In addition, [25] highlights that vocabulary mastery significantly influences students' English proficiency since vocabulary knowledge supports the development of listening, speaking, reading, and writing skills. This view is reinforced by, who found that vocabulary knowledge strongly contributes to language development and literacy achievement. Therefore, the improvement in students' vocabulary mastery found in this study demonstrates that the Wordwall Anagram Game can support students in understanding and learning English vocabulary more effectively.

One possible explanation for the effectiveness of the Wordwall Anagram Game lies in its role as an interactive digital learning platform that encourages students to participate actively in classroom activities. Compared with conventional learning methods, which generally emphasize memorization and teacher explanation, Wordwall provides students with opportunities to engage directly with vocabulary through educational games. Wordwall is a digital platform designed to create enjoyable and interactive classroom activities that promote student participation [26],[27]. Similarly Wordwall enhances classroom interaction by enabling teachers to develop engaging game-based learning activities that increase students' involvement during instruction [28]. Moreover, Wordwall can be applied in both online and face-to-face learning settings, making English instruction more flexible and engaging for students. Recent research also emphasizes the positive impact of digital learning tools on vocabulary instruction [29]. For instance, digital game-based learning activities improved students' vocabulary development because learners became more motivated and actively participated during classroom learning [30], [31]. Likewise, that interactive digital media encouraged greater student participation and increased learning motivation[32]. Therefore, the interactive and enjoyable features provided by Wordwall may explain why students in the experimental class showed greater vocabulary improvement.

Another possible reason for the improvement in students' vocabulary mastery is the use of anagram-based activities throughout the learning process. In this study, students were required to rearrange scrambled letters into meaningful English words, which allowed them to practice spelling, recognize vocabulary patterns, and understand word meanings through continuous exposure. Anagram activities support vocabulary learning because students actively engage in identifying word structures while simultaneously learning pronunciation and meaning [33]. Through repeated interaction with vocabulary items, students become more familiar with words and are better able to remember them. This finding is supported who reported that Wordwall activities significantly improved vocabulary mastery because students repeatedly practiced vocabulary through engaging digital tasks [34]. In addition, integrating Wordwall into vocabulary instruction enhanced students' understanding of vocabulary since learners were more actively involved in recognizing and recalling words compared to traditional learning methods [19]. Thus, the repeated vocabulary exposure provided by anagram activities may have contributed to the students' vocabulary improvement.

The findings also demonstrate that students appeared more motivated and enthusiastic during vocabulary learning activities. During the treatment process, students seemed more interested in participating because the learning activities incorporated game elements that made classroom instruction more enjoyable and less repetitive. The use of Wordwall in game-based learning can significantly improve students' motivation, participation, and vocabulary retention because students experience a more enjoyable learning environment [16], [35]. Similarly, the interactive games positively influenced vocabulary mastery by increasing students' classroom participation and reducing boredom [23]. This finding is also reported that students who learned through Wordwall achieved better vocabulary performance compared to those taught through traditional methods [17]. Furthermore, technology-based learning media contributed to increased student motivation and better vocabulary achievement because learners became more actively involved in classroom activities [36]. Consequently, the increased motivation and active participation observed during the implementation of the Wordwall Anagram Game may have played a major role in improving students' vocabulary mastery [37], [38].

Furthermore, the results of this study align with several previous studies examining the effectiveness of Wordwall in vocabulary instruction. Wordwall effectively enhanced students' vocabulary mastery, classroom participation, and motivation in English learning contexts [39]. Similarly, reported that Wordwall significantly improved students' vocabulary achievement because interactive learning activities reduced boredom and increased student involvement [40]. In the same way, found that Wordwall-based learning positively affected students' vocabulary mastery and classroom engagement during English lessons [41]. Additionally, concluded that gamified vocabulary instruction created more enjoyable and meaningful learning experiences, which contributed to better vocabulary acquisition [42]-[44]. Therefore, the consistency between the findings of this study and previous research strengthens the conclusion that Wordwall can be an effective instructional medium for improving vocabulary mastery, particularly among young learners in EFL classrooms.

Overall, the findings of this study indicate that the implementation of the Wordwall Anagram Game successfully improved students' vocabulary mastery at the fourth grade of SD Aisyiyah 1 Pagaram. The improvement appears to be influenced by several interconnected factors, including interactive learning activities, repeated exposure to vocabulary, increased student motivation, enjoyable classroom experiences, and greater participation during the learning process. Thus, Wordwall can be considered an effective teaching medium for English vocabulary instruction because it not only supports vocabulary improvement but also encourages students to become more motivated and actively engaged in learning English.

5. CONCLUSION

Based on the study's findings and discussion, it can be concluded that using the Wordwall Anagram Game improved students' vocabulary knowledge in fourth grade at SD Aisyiyah 1 Pagaram. Pupils who used Wordwall to learn vocabulary outperformed those who used traditional teaching methods. Students' vocabulary identification, comprehension of word meanings, spelling accuracy, and retention of new words were all improved by the use of interactive and game-based activities. Furthermore, pupils looked to be more interested and actively participating during classroom instruction because the learning process was made more entertaining and engaging. The results also imply that the usage of digital learning resources, especially Wordwall, significantly increased students' enthusiasm to study and their involvement in class. Students had more chances to actively engage in vocabulary exercises and repeatedly practice vocabulary items thanks to its interactive features, which improved their vocabulary comprehension and memory retention.

As a result, Wordwall could be considered a successful substitute teaching tool for vocabulary, particularly for elementary school pupils who often react better to engaging and entertaining learning activities. However, this study was limited to a few vocabulary subjects, such as time, daily activities, types of vehicles, and daily routines, and it only included fourth-grade children at SD Aisyiyah 1 Pagaralam. In order to get more comprehensive results, it is advised that future researchers investigate the use of Wordwall in various educational settings, grade levels, and English language proficiency levels. Additionally, to promote a more stimulating, motivating, and productive learning environment, English teachers are encouraged to include interactive digital learning resources like Wordwall into their lesson plans.

6. REFERENCES

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