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The Effect of the Use of Wordwall Media on the Learning Outcomes of Grade 5 Students on IPAS Learning

Candra Avista Putri*[1], Nur Hidayah Hanifah[2], Dian Eka Aprilia Fitria Ningrum[3]
UIN Maulana Malik Ibrahim Malang
e-mail: *[1]candraavista24@gmail.com, [2]nurhidayahhanifah@uin-malang.ac.id,
[3]ningrumdianeka@uin-malang.ac.id

Abstract Science subjects that are often considered complicated and boring by some students require innovation in learning methods to optimize the achievement of student learning outcomes. The purpose of this study is to determine the influence of the use of wordwall media on student learning outcomes in elementary schools. The methodology of this research is quantitative, with a pre-experimental approach of design on group pretest postest. The subjects in this study are 21 5th grade students. The data collection techniques carried out are observation, interviews, and tests. Data analysis uses the Wilcoxon test as an alternative to the paired sample t-test which does not meet the requirements. The results of the Wilcoxon test in the statistical test showed that the acquisition of a sig value of 0.000 < 0.05 so that it can be stated that there is an influence of the use of wordwall media on student learning outcomes. This research provides recommendations for educators in elementary schools to take advantage of technology in accordance with the needs and developments of the times such as wordwalls that can be used as support during the learning process.
Keywords Wordwall media; Learning Outcomes; IPAS

A. INTRODUCTION

Education is an important element in nation building. In this digital era, conventional learning methods are turning to digital technology for teaching and learning activities (Haleem et al., 2022). One way to integrate technology into teaching is through learning media (Chandra et al., 2024). An increasingly popular teaching tool is the wordwall, which provides a variety of interactive educational games (Swari, 2023). In the realm of learning at the elementary school level, student learning outcomes are often the main concern (Jošt et al., 2024; Kulinna et al., 2024; Salsabila & Puspitasari, 2020; Syawaluddin et al., 2020). Science subjects that are often considered complicated and boring by some students require innovation in learning methods to optimize the achievement of student learning outcomes (Bugarso et al., 2024; Chen et al., 2020; Membiela et al., 2023; Permanasari et al., 2024; Russell & Martin, 2023).

Technology must be used in the learning process in the present digital world. Educators in elementary schools must have the ability to develop the learning process by attracting and utilizing technology. So that the infrastructure in schools also slowly provides supporting facilities such as projectors, TVs in the classroom, and computer labs. This may encourage the usage of digital learning resources in classroom settings. This is consistent with studies carried out by (Magdalena et al., 2021) claimed that using educational media to accomplish learning objectives is crucial.

Students' interest in learning is a disciplinary behavior related to carrying out efforts to learn. According to (Rone et al., 2023) Learning motivation is a fundamental aspect of the willingness to do something because there is interest in a job, including learning. Learning interest has a very strong influence on improving student learning outcomes. Because of carrying out activities that depend on

their interests, this was expressed by (Yuliansih et al., 2021). From research conducted by (Harefa et al., 2023) A great interest in learning can also allow for improved student learning outcomes and allow individuals to become more active. Students' interest in learning can have a positive impact and affect student learning outcomes.

The results of observations in grade 5 of UPT SDN 04 Ponggok show that learning in the classroom often uses learning media that is less interesting and innovative and still rarely takes advantage of technology. Conventional learning in the classroom often fails to maintain students' interest, resulting in poor understanding of concepts and lack of motivation for students. Limited time and learning resources are an obstacle to providing an optimal learning experience to students. Therefore, innovative solutions are urgently needed to overcome this hurdle and be able to improve the quality of student learning in primary school. So wordwall media is a solution to create a fun and interactive learning experience. Wordwall is capable of displaying quizzes, puzzles and other interactive games.

According to (Hidayaty et al., 2022b) Wordwall media may be a useful tool for teachers to share knowledge with their pupils, and it is anticipated that this will inspire student to study**.** Wordwall media offers a wide selection of game models that can engage students throughout the learning process (Zalsabilah et al., 2024). Wordwall media provides an interactive learning experience that can encourage students to participate enthusiastically while learning (Ferlina et al., 2024).

The use of wordwall media in learning in elementary schools can significantly improve student learning outcomes because it allows for a more creative and interactive learning approach (Lestari, 2024)**.** Increased student learning motivation may also be achieved by more extensive student engagement in the teaching and learning process through interactive activities and wordwall media (Pradini & Adnyayanti, 2022)**.** In order to improve academic performance, raise overall learning objectives, and prepare students to do tasks on their own (van Alten et al., 2020).

According to a number of studies, using interactive media can help kids learn more effectively. Study carried out by (Emilia et al., 2024) states that wordwall can improve students' understanding of the learning concepts conveyed. Research conducted by (Hanifah, Prayitno, & Adhantoro, 2024) Finding that wordwall media makes students more enthusiastic and participate in teaching and learning activities. So that students can accept well and actively, are able and dare to ask a question, and show better learning outcomes. On the other hand, the research conducted by (Elhefni et al., 2023) assert that wordwall can facilitate the process of assessing whether or not students have met their learning objectives and aid in their comprehension of the subject matter.

The focus of this research is to determine the influence of the use of wordwall media on student learning outcomes and students' understanding of water cycle materials and the difference between this researcher and other research is that the use of word walls in this study uses a mixed display and can be changed so that apart from measuring students' learning abilities, it also trains students' literacy, so that they can achieve more optimal and comprehensive learning goals. By utilizing technology wisely, this research is expected to provide new contributions in using effective and innovative learning media to be applied. Thus, this study will provide recommendations for other educators to apply interactive learning media. This research offers a new view by using wordwall media in learning the water cycle in elementary schools.

B. METHODS

This study uses a quantitative method with a type of pre-experimental research using a one group pretest-postest design. The implementation of the research was carried out in grade 5 of UPT SDN 04 Ponggok with a total of 21 students. The wordwall media used focuses on water cycle material. Before the treatment, students were first given pretest questions and after treatment, they were given posttest questions totaling 10 questions.

The data collection technique uses observation techniques, interviews, and tests. The tool used in this study is an observation sheet to find out the learning process taking place in grade 5 especially during the learning process when using wordwall media and not using media, so that by direct observation you can find out the differences between students during learning. Furthermore, the interview stage to find out the use of wordwall media has an effect on the learning outcomes of

grade 5 students, So interviews were also carried out to find out students' feelings when using media. On the other hand, teachers were also asked about differences in student learning outcomes using media and not. Finally, there is a test that aims to measure the improvement of student learning outcomes before and after treatment. Furthermore, the data analysis used was the acquisition of score results in the form of numbers from the pretest and postest calculated using a paired sample t test with the help of SPSS.

C. RESULT & DISCUSSION

The wordwall media used in IPAS refers to the water cycle material. Media can be used individually and in groups. So that it can allow students to interact with each other, besides that this media can train students to understand problems quickly. Because in the wordwall media used, there is a certain time in working on the questions.

Figure 1 Wordwall gameshow quiz media display

The display of game evaluations on wordwall media can be adjusted according to needs. On the media display, there is a description of the time limit for completing each question. So that students are also trained to be able to focus and practice literacy so that they can determine the correct answer. Wordwall media can be combined with sound, images, and writing on one screen, so this can attract students' attention when working on problems.

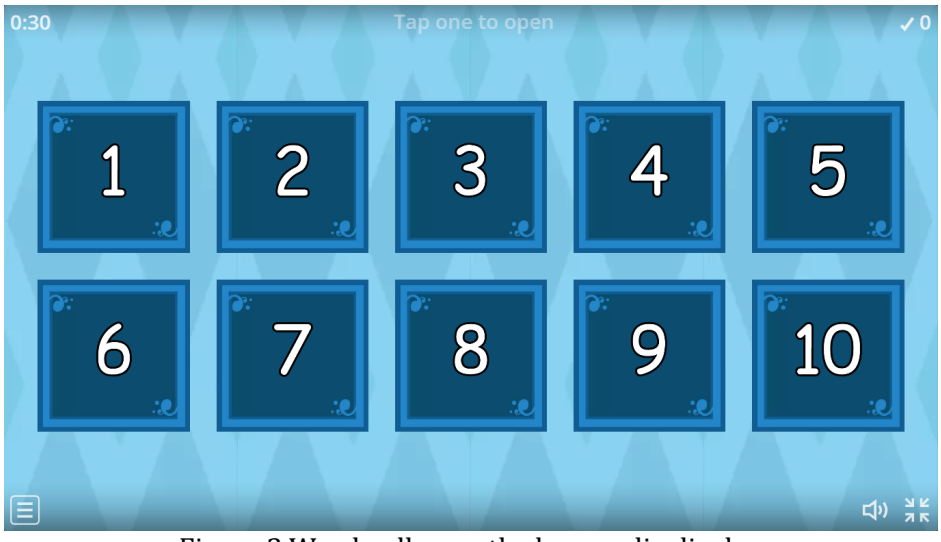


Figure 2 Wordwall open the box media display

Uniquely, the wordwall media used can modify the appearance of the quiz. In addition to the display of the quiz gameshow in figure 1. In figure 2 is an open the box display, so students have to open each number, then answer the question behind the number.

Figure 3 Airplane wordwall media display

Figure 3 shows another view of the wordwall media that displays question questions for students to answer. In this airplane wordwall, students will answer by moving the picture of the plane and pointing to the correct answer. The existence of this kind of game can motivate students to learn, arouse students' enthusiasm and interest in learning in carrying out a learning activity. During the water cycle learning, students looked very enthusiastic and cheerful with the use of this media. Thus creating fun learning for students and providing a sense of comfort. So that in this condition student learning outcomes can increase.

The paired sample t-test was used to measure the study's findings about the impact of wordwall media use on student learning outcomes, hence the primary prerequisite was that the data be distributed normally. Nevertheless, the results showed that the data was not regularly distributed. In this instance, a non-parametic test called the Wilcoxon test was used to calculate the impact of wordwall media use on student learning outcomes. Where both still have the same goal, namely to find out the influence of the use of a media on student learning outcomes. The hypothesis is that there is an influence of the use of wordwall media on student learning outcomes. The basis for decision-making is:

1) If the sig value > 0.05 then the hypothesis is rejected
2) If the sig value < 0.05 then the hypothesis is accepted

The output results from the Wilcoxon test are as follows.

Table 1 Output Ranks

Ranks

		N	Mean Rank	Sum of Ranks
Postest-Pretest	Negative Ranks	0[a]	.00	.00
	Positive Ranks	21[b]	11.00	231.00
	Ties	0[c]		
	Total	21		

a. postest < pretest

b. postest > pretest

c. pretest = postest

Based on table 1 of the Rank output, it can be seen that there is no decrease in the value of the postest, this is shown in Negative ranks with a value of 0, which means that there is no decrease.

Meanwhile, in positive ranks, the number of students shown was 21 which experienced an average increase of 11 and the number of increases of 231, this shows that the use of wordwall media activities provides an increase in student learning outcomes from pretest to posttest which has increased. So it can be clearly seen that the postest score obtained is higher than the pretest score.

Table 2 Output Test Statistics Uji Wilcoxon

Test Statistics[a]

	postest - pretest
Z	4.039[b]
Asymp. Sig. (2-tailed)	.000

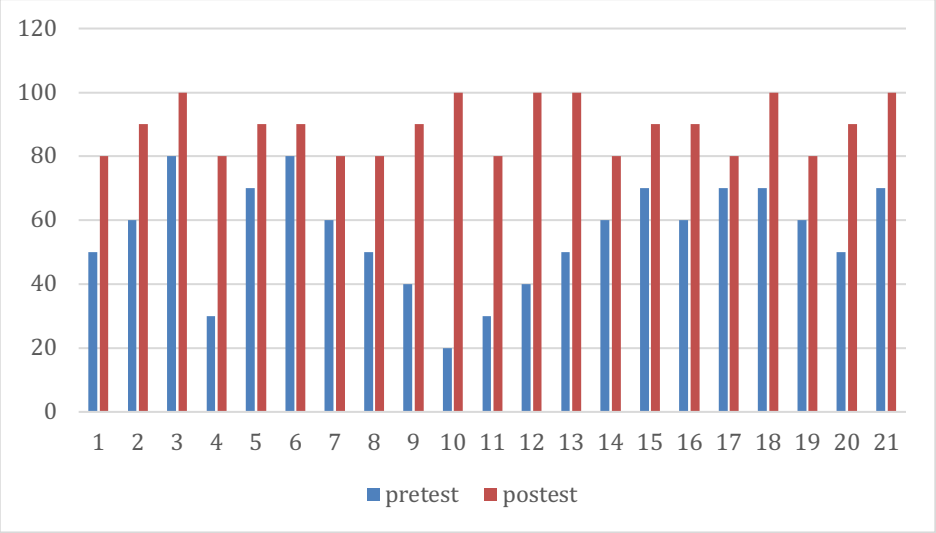
a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Based on table 2, the output test statistic shows a Sig. (2-Tailed) value of 0.000 which means that the sig value < 0.05, it can be concluded that the hypothesis is accepted, namely the influence of the use of wordwall media on the learning outcomes of students in grade 5. This is also influenced by wordwall media that is made interesting, there are readings and question questions that are made fun, such as the time for each question. So that it makes students interested and enthusiastic in learning, especially in solving problems.

The use of wordwall media can improve student learning outcomes, as can be seen from the increase in pretest students before being given treatment and after being given treatment. Presented in table 3.

Table 3 Graph of Increase in Student Learning Outcomes



The graph above shows a comparison of learning outcomes between pretest and posttest for 21 people. In general, the posttest score (marked with a red bar) was higher than the pretest score (marked with a blue bar), which indicates an increase in learning outcomes after the learning process. Nonetheless, the rate of this increase varies between students. Some students have experienced a very significant improvement. Overall, this graph indicates that there is an improvement in learning outcomes from pretest to posttest, albeit with varying levels of improvement between students. So that overall students can understand the material well and the learning outcomes have improved. In addition, there was an increase in the average number of pretests was 56, while the average posttest was 89. So that it is clear that there is an increase in student learning outcomes.

Thus, it is clear from the computation results that using this wordwall greatly enhances the water cycle learning process and raises student learning outcomes when it comes to studying IPAS. The pretest and posttest results acquired before and after the application of this wordwall demonstrate the effectiveness of this strategy in enhancing student learning outcomes.

However, many students find that using wordwall materials makes them joyful while they are studying. Students can be actively engaged, participatory, and very enthusiastic throughout the learning process. This is in line with research conducted by (Akbar & Hadi, 2021) which states that students have active involvement in answering various questions, active, have a willingness to ask about something that is not yet known. Additionally, a different statement clarified how wordwall media might motivate kids to learn in the classroom and included findings from research done by (Gandasari & Pramudiani, 2021)stated that a different learning atmosphere with learning and playing makes students feel happy, and of course this atmosphere has an influence on learning, especially the influence on learning motivation. The significance of learning motivation can inspire learning activities and guarantee that the learning process continues and provide direction for students' learning motivation as a whole, so that learning goals can be achieved.

Wordwall media has a variety of interesting features, educators can take advantage of existing templates or can even develop personally according to their needs or desire to be creative(Rahmi & Angraina, 2021; Ramadhani, 2023). One online tool that may be utilized as an interactive teaching tool is wordwall media with this program, you may make educational materials including word searches, groupings, anagrams, matchmaking, matching pairs, quizzes, and randomization of words(Fitria, 2023; Novia et al., 2024; Yuliyanto et al., 2024). However, the one used by this study has three, namely gameshow quiz, open the box, and airplane. Wordwalls can also be used as an assessment tool that can foster student attraction in the learning process (Hidayaty et al., 2022a; Safitri et al., 2022). Wordwall has a variety of features, such as quizzes with color combinations, moving images, and sounds. Wordwall can also be used to create educational games that are easy to use and have various features in it so that they can make the class more exciting and interesting.

The advantage of wordwall games is that they have various features and are very flexible, can attract students' attention because they are games, can be used in all subjects (Kariyati, 2024), making students creative, building character in cooperation with friends, and simple implementation. Another advantage in using wordwalls in the classroom is that students can easily participate in learning in both elementary and high level classes. In addition, students can practice literacy by playing while learning with their friends, both individually and in groups. While the disadvantage of wordwall games is that making games in wordwalls takes a long time, because of the enthusiasm of the students, the teacher may be overwhelmed in disciplining students, and if you use a wordwall application, it requires electronics for its use and can only be seen because the media is in visual form.

The evolving digital era has made technology an integral part of daily life, including education (Siddiq et al., 2024). Using wordwall media for science education at the primary school level can bring many benefits to improve student learning outcomes (Sufraini et al., 2024). Wordwall is an interactive teaching tool that allows teachers to create a variety of games and activities that can be accessed online (Amaro et al., 2024). Wordwall allows students to engage in teaching and learning through games and interactive activities (Hanifah, et al., 2024). Examples of activities that can be created in Wordwall include quizzes, word matching, and boxing games. This activity requires direct interaction from students, thus increasing their level of engagement compared to conventional teaching methods. This high level of engagement is very important because it has a positive impact on student learning outcomes. Learning media is very important in supporting students in understanding new concepts (Novaliendry et al., 2020). In science learning, students must memorize and understand many concepts and terminology. Wordwalls help improve information retention by allowing students to practice these concepts repeatedly in various forms of games(Moorhouse & Kohnke, 2024).

Activities in Wordwall are designed to be done by individuals or groups. As used in this study. In the open text box, it can be done in groups, so that students can discuss or collaborate with their friends to determine choices and answers. This collaboration not only helps in understanding the

material but also develops social and cooperative skills. Students are taught to consider the views of others, brainstorm, and collaborate to achieve a common goal. After completing the activity, students can immediately see their results and understand the mistakes they made. This real-time feedback is invaluable, allowing students to improve their understanding and learn from mistakes right away. In science learning, where misunderstood concepts can lead to ongoing errors, this direct feedback is essential to ensure correct understanding. Using Wordwall for science learning in elementary schools can improve learning outcomes through active engagement, improved memory and retention, personalized learning, and ease of access (Hadi et al., 2020). By harnessing the full potential of this medium, educators can build a more productive and enjoyable learning environment for students. Because students who are happy and comfortable can also affect learning outcomes. As well as teaching students that the existence of current technology must be used wisely, especially during the learning process.

D. CONCLUSION

The use of wordwall media in the learning process in the classroom can be used as a means to evaluate students in understanding the learning of science and technology of water cycle material, and it has been proven that the average student score has increased from 56 to 89. In addition, based on calculations using the Wilcoxon test, a sig value of 0.000 < 0.05 means that there is an influence of the use of wordwall media on student learning outcomes. The existence of wordwall media can also be used as a medium to train students to be able to apply digital literacy. Because the questions given in it have time so that students also practice reading quickly and interpreting what is meant by the questions. The existence of this research is expected to contribute to the world of education, especially in the use of digital learning media. This research definitely has shortcomings, so future readers and researchers can develop word wall media not only for one material and one class, but can be done in other things. Apart from that, the use of word walls can also be used not only to measure student learning outcomes, but can also be used for numeracy or other things.

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