

THE EFFECT OF WORDWALL MEDIA USE ON THE SCIENCE LEARNING OUTCOMES OF GRADE IV STUDENTS

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ABSTRAK

Pendidikan adalah upaya sadar dan terencana untuk menciptakan suasana dan proses belajar agar siswa secara aktif mengembangkan potensi mereka untuk memiliki kekuatan spiritual dan agama, pengendalian diri, kepribadian, kecerdasan, moral yang mulia, serta keterampilan yang dibutuhkan oleh diri mereka sendiri dan masyarakat. Penelitian ini bertujuan untuk menentukan pengaruh penggunaan media wordwall terhadap hasil belajar mata pelajaran ilmu pengetahuan sosial siswa kelas IV di SD Negeri 091544 Pardomuan pada tahun ajaran 2025/2026. Penelitian ini menggunakan pendekatan kuantitatif dengan desain satu kelompok pra-tes dan pasca-tes. Sampel terdiri dari 21 siswa kelas IV SD Negeri 091544 Pardomuan. Instrumen yang digunakan adalah soal pilihan ganda. Analisis data statistik menggunakan uji N-Gain menunjukkan bahwa sebagian besar siswa mengalami peningkatan pemahaman, dengan skor N-Gain rata-rata 0,6473 dan persentase N-Gain rata-rata 64,7255%, sehingga dikategorikan sebagai cukup efektif. Oleh karena itu, dapat disimpulkan bahwa penggunaan media wordwall secara signifikan meningkatkan hasil belajar siswa kelas IV di SD Negeri 091544 Pardomuan pada tahun ajaran 2025/2026..

ABSTRACT

Keywords:

Wordwall Media, Learning Outcomes, Social Studies

Education is a conscious and planned effort to create a learning atmosphere and process so that students actively develop their potential to possess spiritual and religious strength, self-control, personality, intelligence, noble morals, and the skills needed by themselves and societ. This study aims to determine the effect of using wordwall media on the social studies learning outcomes of fourth-grade students at SD Negeri 091544 Pardomuan in the 2025/2026 academic year. This study employed a quantitative approach with a one-group pretest-posttest design. The sample consisted of 21 fourth-grade students at SD Negeri 091544 Pardomuan. The instrument used was multiple-choice questions. Statistical data analysis using the N-Gain test showed that most students experienced an increase in understanding, with an average N-Gain score of 0.6473 and an average N-Gain percentage of 64.7255%, making it categorized as quite effective. Therefore, it can be concluded that the use of wordwall media significantly improved student learning outcomes in fourth-grade students at SD Negeri 091544 Pardomuan in the 2025/2026 academic year.

1. Introduction

Education plays a crucial role in human life because it is a process through which attitudes, personality, and skills are formed to face the future, leading to the creation of high-quality individuals. To achieve this, every school is expected to strive to improve the quality of education. To improve the quality of education, the teaching and learning process in schools must run smoothly. (Khasyi et al., 2024). The teaching and learning process will run smoothly if there is interaction between components directly related to learning. For example, the student component interacts with the teacher component, methods, media, equipment, and classroom environment, all directed at achieving learning objectives. Conversely, the teacher component must also be able to interact with other components because the teacher plays a crucial role in the interaction between these components (Sihombing, 2021).

Education is a conscious and planned effort to create a learning atmosphere and process so that students actively develop their potential to possess spiritual and religious strength, self-control, personality, intelligence, noble morals, and the skills needed by themselves and society (Rahman, 2022) . Someone who has made a change has learned something because they have demonstrated a change in their behavior. Meanwhile, learning is the way teachers interact with students. (Darnawati & Yulianto, 2024) . Students and educators when learning utilize resources and also optimally utilize their potential, which is meant by potential, namely students' interests, learning styles and talents, the learning potential that each student has is certainly different (Nabilah & Warmi, 2023).

According to Purwanto, learning outcomes are the achievement of educational goals in students who participate in the teaching and learning process. Learning outcomes can also be interpreted as changes caused by changes in human attitudes and behavior (Motoh, 2022).

Natural and Social Sciences (IPAS) is the study of living and nonliving things in the universe and their interactions, and examines human life as both individuals and social beings interacting with their environment. In general, science is defined as a combination of various knowledge arranged logically and systematically, taking into account cause and effect (Big Indonesian Dictionary, 2016). This knowledge encompasses both natural and social knowledge. (Sugiyana, 2023).

At the elementary school level, learning plays a strategic role in shaping students' foundational knowledge and skills. In both the Independent Curriculum and the 2013 Curriculum, Natural and Social Sciences (IPAS) is a crucial subject because it provides a basic understanding of the natural world, social phenomena, and cause-and-effect relationships that occur in the environment (Hermiyanto & Wahyudi, 2022) . IPAS teaches scientific, critical, and creative thinking, and fosters awareness of the importance of environmental protection and harmonious community living. (Oktariyanti et al., 2021) . However, in practice, science learning is often considered difficult and less interesting by

some students, due to the monotonous and less interactive method of delivering the material. (Sitinjak et al., 2024).

Based on the results of the author's interview with the fourth grade teacher at SD Negeri 091544, there were problems in the science learning process in the class, the teacher explained the learning without using learning media. (Anugrah et al., 2022) . According to fourth-grade students at SD Negeri 091544 Pardomuan, the teacher's teaching method often makes them sleepy and often lacks focus during learning, resulting in less conducive learning in the classroom. The teacher's teaching method, which does not use learning media, causes students to be less interested in the science subject. (Mayang Sari, 2025). In addition, researchers also observed that the low scores obtained by fourth-grade students were due to not having achieved the KKTP (Criteria for Achieving Learning Objectives). The KKTP score set for the science subject was 68, with only 6 of the 21 students exceeding the KKTP, and 15 others not exceeding the KKTP. (Arrosyad et al., 2023).

Media *Wordwall* is a technology that can be used to create engaging learning evaluation materials to facilitate teachers in developing evaluations and engaging teaching materials. Games such as *match-ups can be used to test the material presented to students*. Furthermore, games with a variety of engaging and engaging materials, such as *crosswords*, can be used to test students' comprehension and memory (Wiranda, 2023) . *Wordwall* media provides various other things such as *gameshow quizzes , matching pairs , anagrams, find the match, maze chase, missing word, unjumble , group short , and also random wheel* (Wiranda, 2023) . Based on the background above, the researcher is interested in analyzing " The Effect of Using Wordwall Learning Media on Student Learning Outcomes at SD Negeri 091544 Pardomuan"

2. Method

The type of research used in this study is quantitative with an experimental method. Quantitative research methods can be defined as research methods based on the philosophy of positivism, used to research specific populations or samples, data collection using research instruments, and quantitative/statistical data analysis, with the aim of testing established hypotheses (Jauhar & Nur, 2022) .

The experimental method can be interpreted as a research method used to find the effect of certain treatments on others under controlled conditions, Sugiyono (2020:72) This research design uses a design known as a One-Group Pretest-Posttest Design. This study involved only one class, and that class was an experimental class, which first received a pretest and then received the treatment. The research method used in this study was an experimental method with a One-Group Pretest-Posttest Design. (Rahayu et al., 2022) . The One Group Pretest-Posttest Design is a research design that can connect the study of independent variables and dependent variables. In this design, researchers from the One Group pre-test-posttest only use one class without a comparison class. (Agustina et al., 2022) . .

Research design is the plan for how research will be conducted. The research design used in this study is a one-group pretest-posttest design. In this design, the sample is given

a pretest (initial test) before treatment is administered, and a posttest (final test) at the end of the learning process. This design is used in accordance with the intended goal of determining improvements in students' process skills and learning outcomes. (Aeni et al., 2022) .

This research will be conducted in class IV of SD Negeri 091544 Pardomuan, Silakkidir Village, Hutabayu District, Simalungun Regency, North Sumatra Province, in the Odd Semester of the 2025/2026 academic year, precisely in August 2025. Population is a generalization area consisting of objects/subjects that have certain qualities and characteristics determined by the researcher to be studied and then conclusions drawn, Sugiyono (2020:80). In this study, the population to be studied is all 21 students of Grade IV of SD Negeri 091544 Pardomuan. (Ni Made Dwi Septia Pradnyani & Made Vina Arie Paramita, 2024).

A sample is a part of the number and characteristics possessed by the population. The sampling technique used by the researcher is the Saturated Sampling technique, Sugiyono (2020:81). Saturated Sampling is a sampling technique where all members of the population are used as samples. This is often done when the population is relatively small, less than 30 people, Sugiyono (Permana & Kasriman, 2022).

Because the number of fourth-grade students at SD Negeri 091544 Pardomuan is only 21, the saturated sampling technique is very appropriate. This technique involves the entire population as a sample, so all 21 students were included in the research sample. This was done because the relatively small population does not require random or limited sampling. (PM Sari & Yarza, 2021).

Data collection techniques are the most strategic step in research, because the main objective of research is to obtain data. (Meylovia & Alfin Julianto, 2023) . Without understanding data collection techniques, researchers will not obtain data that meets established data standards. The data collection techniques used in this study were carried out in several ways, as follows:

The observation technique is to carry out observations and systematically record the objects being studied, this aims to directly observe the learning conditions that occur in the classroom, both before using Wordwall Media and after using Wordwall Media. (AK Sari & Handini, 2023). Documentation is a tool used to provide a clearer picture of the learning situation. Documentation carried out by researchers includes observing the condition of the teacher, the condition of the students, the condition of the facilities/infrastructure and taking pictures/photos as evidence or a sign that Wordwall media has been implemented in the Science subject with the material "Plant Body Parts

3. Result and Discussion

Description of Research Results

This research is an experimental research that describes the learning outcomes of students in the subject of science using *Wordwall Media* . This research was conducted on August 5-12, 2025, this research was aimed at fourth grade students of SD Negeri 091544 Pardomuan to determine the effect of using *Wordwall media* on student learning outcomes. The research instruments used were pre-test and post-test to determine the

extent of students' initial and final abilities in understanding the material after being given treatment. (Dewi & Suniasih, 2023) . Then the data from this research are presented in the form of descriptions and tables which are described in detail below.

Instrument Trial Results

The trial instrument was administered to fourth-grade students of SD Negeri 091273 Karang Bangun on August 4, 2025. The instrument consisted of 30 multiple-choice questions covering the topic "Plant Body Parts." After students completed the test, the collected data was processed to assess the validity of each question. After the assessment, questions that were proven valid were used as instruments in this study. (NOVITASARI, 2024) . The results of the analysis of the questions are as follows:

Validity Test Results

Validity is a measure that indicates the levels of validity or authenticity of an instrument. A valid instrument has high validity. Conversely, an instrument that is less valid has low validity. A test item is declared valid if the value $r_{hitung} \geq r_{tabel}$, using a significance level of 5% or 0.05. r_{tabel} in this study is 0.336.

Hypothesis requirement test

Normality Test

A normality test was conducted to determine whether *the pre-test* and *post-test data* from the sample were normally distributed. The following are the results of the normality test for *the pre-test* and *post-test data* in this study:

Table 1. Results of the Normality Test for *Pre-test* and *Post-test Data*

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statis tics	df	Sig.	Statis tics	df	Sig.
Pretest Score	.175	21	.091	.946	21	.091
Posttest Value	.148	21	.200 [*]	.957	21	.455

Source (SPSS 21 Output)

Based on the table above, it can be seen that *the pre-test* and *post-test data* show that the data is normally distributed, as is known that data is said to be normally distributed if $\text{Sig} > 0.05$.

The data above shows that the pre-test data showed a value of $0.091 > 0.05$, and the post-test data had a value of $0.455 > 0.05$. Therefore, it can be concluded that the results of the calculations from *the pre-test* and *post-test data* in this study were normally distributed.

N-Gain Test

After obtaining *the pretest* and *posttest data* during the research, both learning outcome data were inputted into *the SPSS 21 program* to calculate the *N-Gain score* . This value is used to determine how effective the use of *Wordwall Media* is on the Science

Learning Outcomes of Grade IV Students at SD Negeri 091544 in the 2025/2026 Academic Year on the material of Plant Body Parts.

N-Gain calculation obtained using *SPSS 21* serve as the basis for assessing the success of the learning media implementation used. These are presented in the table below:

Table 2. *N-Gain* Test Results

No. Respondent	<i>N-Gain</i> Score	<i>N-Gain</i> Percent	Category
1	0.58	58.33%	Currently
2	0.67	66.67%	Currently
3	0.64	64.29%	Currently
4	0.64	64.29%	Currently
5	0.69	69.23%	Currently
6	0.57	57.14%	Currently
7	0.60	60.00%	Currently
8	0.64	63.64%	Currently
9	0.67	66.67%	Currently
10	0.75	75.00%	Tall
11	1.00	100%	Tall
12	0.63	62.50%	Currently
13	0.63	62.50%	Currently
14	0.63	62.50%	Currently
15	0.75	75.00%	Tall
16	0.56	56.25%	Currently
17	0.71	71.43%	Tall
18	0.60	60.00%	Currently
19	0.60	60.00%	Currently
20	0.57	57.14%	Currently
21	0.67	66.67%	Currently

(Source: *SPSS 21* Output)

After observing the *N-Gain* results Score and *N-Gain* Percent of each student, the next step is to calculate the average of all participants assisted by *SPSS 21* software . The table below presents the average value to see the effectiveness of the learning media that has been implemented.

Table 3. Calculation of Average *N-Gain* Score and *N-Gain* Percent

	Descriptive Statistics				
	N	Mini mum	Maxi mum	Mea n	Standard Deviation
Ngain_Score	21	.56	.80	.6473	.06450
Gain_percent	21	56.25	80.00	64.7255	6.45013

Based on the analysis results summarized in Table 4.10, there was an increase in understanding in 17 of the 21 students who were included in the "Medium" category, and 4 of the 21 students who were in the "High" category. The average *N-Gain* score obtained was 0.6473, so it is classified as the "Medium" category.

The influence of the use of *Wordwall media* on the science learning outcomes of fourth-grade students at SD Negeri 091544 Pardomuan in the 2024/2025 academic year, on the material, Plant Body Parts, can be seen from the average *N-Gain Percent* of 64.7255% as stated in Table 4.11, which shows that interactive animation media is included in the "Quite Effective" category.

Discussion

This section will describe the results found in the study. The results in question are conclusions drawn based on the collected and analyzed data. This study aims to determine whether there is an effect of the use of wordwall media on the science learning outcomes of fourth-grade students at SD Negeri 091544 Pardomuan . The research instrument is in the form of test questions as a tool to measure students' cognitive abilities. Before the questions are given to the research subjects, each item needs to go through a feasibility test process to ensure that the instrument is appropriate and can be used as a measuring tool in the implementation of the research. (Yuniar et al., 2021) . The first test was validity, followed by reliability, discriminatory power, and difficulty levels of the valid items. The results showed that 20 of the 30 items were valid and reliable, with a very high reliability coefficient (0.961). The items used were also able to differentiate students well based on their ability levels. The difficulty level of the items was evenly distributed, with most falling in the moderate to easy category, suitable for elementary school students, especially fourth-grade students. Therefore, these 20 items can be used as a measuring tool during research. (Aidah & Nurafni, 2022) .

During the research timeline, data collection was conducted by giving students two questions to answer: a pretest given before the treatment and a posttest given after the treatment. The pretest results were quite concerning, as only three of the 21 students met the Learning Objective Achievement Criteria (KKTP). The average score was also quite low, at 49.0. Meanwhile, the posttest results showed a significant increase. Twenty students were declared to have completed the test, and the average score increased sharply to 82. This indicates that the use of *Wordwall media* has a positive impact on student understanding. In fact, the highest score reached 95, and only one student did not achieve the Learning Objective Achievement Criteria (KKTP). Overall, this improvement is very clear when compared to the pretest results. (Minarta & Pamungkas, 2022) .

The pretest is to test students' mastery of the material or material taught before receiving treatment, and *the posttest* is to test students' mastery of the material after receiving treatment. All *pretest* and *posttest data* were analyzed by testing their normality using the *Shapiro-Wilk test* . The results showed that the average *pretest value* was 49.0. And the average *posttest value* was 82. The results of the normality test analysis showed that the pre-test and post-test data were normally distributed because the Sig. value was > 0.05. The *pre-test data* had 0.91 > 0.05, and the *post-test data* had a value of 0.455 > 0.05. After the normality test was carried out, an *N-Gain analysis was carried out which was*

calculated based on the pretest and posttest values . Based on the results of the N-Gain test, it was concluded that there was an increase with the criteria of the *N-Gain Score value* of 0.6473 or categorized as moderate and *the N-Gain Percent* of 64.7255% which shows that interactive animation media is quite effective in improving the learning outcomes of Class IV students in science. (Antika et al., 2023) .

The results of the analysis above show that there is an influence of the use of *Wordwall media* in line with the results of the interviews conducted. (Agusti & Aslam, 2022) . Interview results showed that students often felt sleepy and some lacked focus during the lesson. Students were not very active when the meeting began. However, students began to be actively involved in the learning process when *Wordwall Media* was used. Based on the results of the analysis obtained and the results of the observations that have been carried out, it can be concluded that there is an effect of the use of *Wordwall media* on the science learning outcomes of fourth-grade students at SD Negeri 091544 Pardomuan.

4. Conclusion

Based on the results of the research that has been done, it can be seen that *Wordwall Media* has an influence on the learning outcomes of fourth grade students in SD Negeri 091544 Pardomuan in the 2025/2026 Academic Year on the material of Plant Body Parts. This can be seen from the increase in the average score of students, namely the average score of students at the time of the pre-test of 49.0 and the average score of students at the time of the post-test of 82. The results of the *N-Gain test* show that most students experienced an increase in understanding with an average *N-Gain score* obtained of 0.6473 also an average *N-Gain Percent* of 64.7255%, so it is classified as quite effective. meaning there is a significant difference between student learning outcomes before using *Wordwall Media* and after being given action with *Wordwall Media* , the student's score increases more with an average score of 82.

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