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The Influence of Wordwall-Based Interactive Learning Media on Students' Learning Motivation in Mathematics Subjects for Grade III Elementary School

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A B S T R A C T

This study aims to examine the effectiveness of the Wordwall application in enhancing students' learning motivation of grade 3 students of SDN Inpres Sakuru. The problems found were the lack of motivation to learning mathematics such as not focusing on learning, lack of self-confidence and the use of media that had not been implemented properly. This study used a quantitative approach with a One Group Pretest Posttest design to see motivation before and after treatment. The sample in this study was 27 students. To measure motivation, data were obtained from respondents' answers on the questionnaire statement sheet. Before being given treatment, the initial motivation was 28.37 then after being given treatment it increased by 44.88. This shows an increase in the motivation of grade 3 students. Based on statistical analysis, a significance value of 0.000 was obtained which means it is smaller than the significance level of 0.05, thus it can be concluded that Ha is accepted and H0 is rejected. This finding shows that there is a difference in students' learning motivation scores before and after treatment. This means that the use of interactive learning media assisted by Wordwall has a significant effect on increasing students' learning motivation.

1. Introduction

Educational innovation needs to be implemented effectively to create a fun, interesting, and meaningful learning environment. In this context, teachers play an important role as facilitators, who not only deliver materials, but also guide, inspire, and evaluate student participation and learning outcomes through the use of appropriate learning media (Manurung et al., 2020). Education has a strategic role in forming a generation that is intelligent, creative, and adaptive to the needs of the modern era that continues to develop. Innovation in the learning process is a main pillar in efforts to improve the quality of education. In addition, technological

advances have also driven significant changes in various aspects of life, including in the world of education.

The role of teachers in developing a high quality learning process is an essential component of pedagogical competence. This competence involves the ability to manage classrooms effectively, understand student's individual characteristics, and establish a supportive learning environment. A critical element of pedagogical competence is the teacher's skill in fostering student's learning motivation (Kurni et al., 2018). Learning motivation is an important factor for academic success, because students who do not have enough motivation tend to be passive, lose concentration, and have difficulty understanding the material. So to increase student learning motivation, interactive learning media is needed as a tool to help students understand the material.

Many students face challenges in learning mathematics due to lack of interest and intrinsic motivation. Students tend to only listen to the teacher's explanation without being actively involved in the learning process, which causes them to feel bored and lose interest in mathematics lessons (Nisa & Susanto, 2022). Given its abstract nature, mathematics requires the support of concrete learning media to facilitate student understanding. The limited use of these media often results in passive learning, decreased student engagement, boredom, and inadequate understanding of the material (Siagian & Tarigan, 2023). As a result, students' ability to understand mathematical concepts is weakened, which in turn has a negative impact on their learning motivation.

Learning media is a tool that helps educators in delivering material. The use of appropriate media can help students understand the material more easily and effectively (Wahyuningtyas & Sulasmono, 2020). The right media will facilitate an effective learning process, plus now it is studying in the industrial era 4.0. This means that currently technology is greater emphasised in the learning system. According to Permana & Kasriman (2022), technological advances can assist students obtain information on a large scale. therefore, teachers must master, innovate, be creative, and utilize available technological developments to be applied in learning. The media used by teachers need to be interactive and innovative.

Motivation can be interpreted as an internal drive or reason that drives a person to take action to achieve a certain goal. Motivation comes from within a person, either consciously or unconsciously, and drives him to carry out certain behaviors in order to achieve the desired results. Meanwhile, learning is a process that aims to achieve educational goals, which takes place through a series of experiences designed and facilitated by the teacher (Walidah et al., 2022). Learning motivation is the main factor that supports the smooth running of the learning process. Teachers need to know whether students are motivated or not in learning, because with motivation, students will look happy and more active when learning (Nisa & Susanto, 2022).

Based on preliminary observations conducted at SDN Inpres Sakuru, researchers identified several issues in the learning process. Instruction was still delivered

through conventional methods without the integration of educational media. The lack of engaging and interactive media, along with the absence of two-way communication between teachers and students, led to students feeling insecure and disengaged during lessons. These factors contributed to low student motivation throughout the learning process. Therefore, there is a need for learning media that can promote active and interactive student participation, such as the use of Wordwall.

Wordwall is an interactive learning medium that offers an innovative solution to create an enjoyable learning atmosphere. It is designed to support teaching and learning through engaging educational games. According to (Lestari, 2021), Wordwall is a digital game-based educational application equipped with interactive quizzes, a combination of colors, sounds, and animations that can effectively attract students' interest in learning. The main issue discussed in this study is the extent to which students' learning motivation can be increased.

Therefore, this study aims to examine the effect of interactive learning media using Wordwall on students' learning motivation in mathematics learning at SDN Inpres Sakuru. Specifically, this study discusses the problem of low student learning motivation caused by the limited use of learning media in the learning process. To overcome this problem, the researcher limited this study to determine the effect of learning media on students' learning motivation at SDN Inpres Sakuru.

2. Methodology

This research was conducted using a quasi-experimental method with a one group pretest posttest design. In this study, only one class was used, one group of students was given an initial test (pretest), then given treatment the use of Wordwall learning media, after which a final test (posttest) was given to see the distinction in pupil studying motivation before and after being given treatment. The reference in seeing the difference in student learning motivation is primarily based on Sugiyono (201) that is supplied in Table 1.

Table 1. Research Design

Pretest	X	Posttest
O_1	Perlakuan	O_2

From Table 1, O_1 is a pretest in the form of a questionnaire in which students do learning without Wordwall learning media, X is the treatment of using Wordwall learning media and O_2 is the provision of a posttest to one group of students. The subjects used in this study were 27 students of grade III of SDN Inpres Sakuru with the sampling technique used being saturated sampling. The researcher used a saturated sampling approach where the sampling approach was to use all members of the population as samples.

This study uses written statements (questionnaires) as data collection on students' learning motivation. The researcher conducted direct observations at SDN Inpres

Sakuru, focusing on the mathematics learning activities of grade 3 students during the learning process. To assess students' learning motivation, a questionnaire was given. The collected data were then used to answer the formulation of the research problem. After the data were collected, the data were analyzed through normality tests and hypothesis tests.

Before the normalization test is conducted, a validity test is conducted first. The validity test is conducted to ensure that the questionnaire instrument used can measure students' learning motivation accurately. In this study, the validity test was conducted in one class by distributing a questionnaire developed based on relevant learning motivation indicators. After all students filled out the questionnaire, the data obtained were analyzed using the Pearson Product Moment correlation method with the help of the SPSS model 26 program. A question item is said to be valid if it has a significance value (Sig.) of less than 0.05 and shows a strong correlation to the overall score. Question items that do not meet these criteria are revised or eliminated to improve the precision and accuracy of the instrument.

After the validation system is complete, the next step is to conduct a reliability test to assess the internal consistency between objects in the questionnaire. The reliability test in this study used the Cronbach's Alpha method which was then analyzed using SPSS version 26. An instrument is said to be reliable if the Cronbach's Alpha value exceeds 0.60 which indicates that the objects in the questionnaire have an acceptable level of consistency. Based on the measurement results, all statements that were tested for validity also showed high reliability values, this indicates that the instrument is suitable for measuring student learning motivation.

After the validity and reliability of the instrument were confirmed, the data were then tested for normality and hypothesis. Normality assessment was conducted to determine whether the pre-test and post-test data were normally distributed, which is a prerequisite for choosing the right statistical method. In this case, the Shapiro-Wilk test was used, as it is more suitable for small to medium sample sizes ($n < 50$). Data are considered normally distributed if the significance value (p) exceeds 0.05. The testing criteria are as follows:

a. The data is considered normally distributed if the p-value (sig.) is greater that 0.05.
b. The data is not normally distributed if the p-value (sig.) is below 0.05.

If the data meets this assumption, hypothesis testing is continued using the paired pattern t-test, because this study uses the One Group Pretest-Posttest design, where the data is paired (from the same group before and after treatment). This test aims to determine whether there is a statistically significant difference between the average pretest and posttest scores after the application of learning media. The paired sample t-test testing criteria are as follows:

a. H0 is rejected and H1 is accepted if the significance value of sig. 2-tailed > 0.05, indicating a significant diffrence between the before and after treatment periods.
b. H0 is accepted and H1 is denied if the significance value of sig. 2-tailed < 0.05, indicating that there is no this cernible diffrence between the pre and posttreatment periods.

3. Results and Discussion

Wordwall is one of the learning media platforms that can be accessed via the web and presented in the form of educational games. Wordwall provides various game templates that can be used to design interesting and interactive learning activities. In this study, researchers utilized one of the types of games available on Wordwall, namely "Find the Match", where students are asked to choose the correct answer according to the question given by tapping the correct choice until all pairs are successfully matched. The appearance of the game used in Wordwall can be seen in Figure 1.

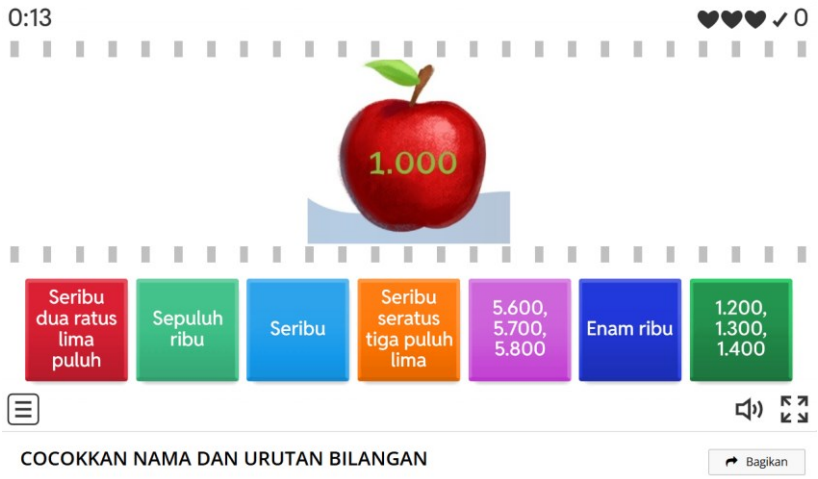

Figure 1. Wordwall Media Display in Game

In the first meeting, the learning process was carried out conventionally without using media, so that students looked passive and less enthusiastic. In the second meeting, the teacher applied interactive Wordwall media which immediately increased student engagement. Students became more active, motivated, and enthusiastic in answering the questions displayed, and the classroom atmosphere became livelier and collaborative. The use of Wordwall media has been proven effective in attracting students' attention and increasing their learning motivation. Documentation of this activity can be seen in Figure 2.

Figure 2. Learning Implementation using Wordwall Media

Pretest and Posttest Scores

Pretest and posttest were given to 27 students at SDN Inpres Sakuru. To determine the level of motivation or initial learning ability, an initial test (pretest) is given to students before being given treatment, then continued with a final test (posttest). Pretest and posttest data were obtained from distributing a learning motivation questionnaire consisting of 14 statements using a Likert scale consisting of answers Strongly Agree (SS), Agree (S), Disagree (TS), and Strongly Disagree (STS).

Based on the results of statistical analysis, it can be seen that there is a significant difference between the pretest and posttest values of students' learning motivation after the application of interactive learning media based on Wordwall. This can be seen from the comparison of the average values which show a significant increase. The average value of learning motivation before treatment (pretest) was 28.37, while after treatment using interactive media Wordwall (posttest), the average value increased to 44.88. The results of the pretest and posttest in the diagram show a significant increase after the implementation of the treatment. It is known that the average score of students' learning motivation before using interactive Wordwall media was 28.37, while after using interactive Wordwall media it increased to 44.88. This shows an increase in students' learning motivation after the implementation of interactive learning media assisted by Wordwall.

This increase shows that the use of interactive Wordwall media has a positive impact on students' learning motivation, especially in mathematics learning. The interactive and interesting nature of Wordwall provides a more interesting learning experience for students, so they are more motivated to follow the learning process. Pretest and posttest data can be seen in Figure 3.

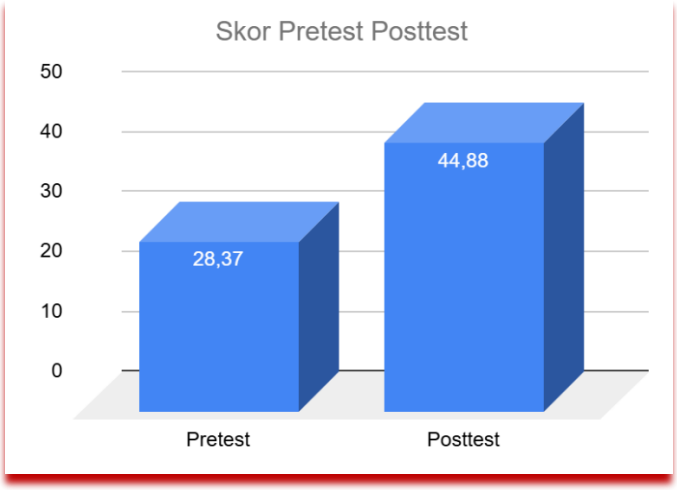

Figure 3. Average Pretest Posttest Score

Normality Test Results

Normality test is one of the statistical procedures used to determine whether the data of a variable is normally distributed. To see the data in a normally distributed condition, see Table 2.

Table 2. Test of Normality

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.166	27	.055	.926	27	.055
Posttest	.156	27	.092	.942	27	.133
a. Lilliefors Significance Correction						

Based on the Shapiro-Wilk test conducted using SPSS version 26, the significance value was 0.55 for the pretest and 0.13 for the posttest. These values are greater than the significance level of 0.05, therefore, it can be concluded that the data are normally distributed. As a result, the assumption of normality is met, and the analysis can proceed using the parametric paired sample t-test.

After the normality assumption is met, statistical analysis can be continued using the parametric method of paired sample t-test, which requires the data to be normally distributed. The consistent distribution of pretest and posttest scores indicates that changes in student learning motivation can be validly analyzed using this method. This supports the validity of the hypothesis testing results, because one of the main assumptions for implementing the t-test has been met.

Hypothesis Test Results

Hypothesis testing in this study used a paired sample t-test, because the research design used was the One Group Pretest-Posttest design, where the statistics being compared were obtained from the same group of students in different conditions

before and after the implementation of interactive Wordwall learning media. The purpose of this test was to determine whether or not there was a difference in students' learning motivation scores before and after the implementation of Wordwall learning media. The assumption of normality has been met with the help of the Shapiro-Wilk test results, which allows the use of this parametric test to be carried out. The following are the results of the processed data analysis presented in Table 3.

Table 3. Paired Samples T-Test Result

Paired Samples Test									
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Sebelum - Sesudah	-17.77778	3.05505	.58794	-18.98632	-16.56924	-30.237	26	.000

The statistical results of the Paired sample t-test showed a mean difference value of -17.78, indicating a significant increase in students' learning motivation scores after treatment. The t-test value was -30.237 and the significance value (Sig. 2-tailed) was 0.000<0.05, meaning that the null hypothesis (H_0) was rejected and the alternative hypothesis (H_1) was accepted. Thus, it can be concluded that there is a statistically significant difference between the pretest and posttest scores. In other words, the use of interactive learning media based on Wordwall has a positive effect on increasing students' learning motivation in mathematics.

4. Conclusion

Based on the results of the Paired Samples T-test, showed a significance value of 0.000, which is smaller than 0.05 (0.000<0.05), so it can be concluded that there is a significant difference between elementary students' learning motivation before and after using Wordwall learning media. The average difference value (mean difference) of -17.78 indicates that students' learning motivation scores after using Wordwall learning media increased significantly compared to before being given treatment. Thus, the use of Wordwall learning media has been demonstrated to have a significant effect on increasing students' learning motivation in mathematics subjects for grade III elementary school.

References

Kurni, D. K., Susanto, R., Guru, P., Dasar, S., Unggul, U. E., Arjuna, J., No, U., Jeruk, K., & Barat, J. (2018). Pengaruh Keterampilan Manajemen Kelas Terhadap Kualitas Proses Pembelajaran di Sekolah Dasar Pada Kelas Tinggi. *Jurnal Ilmiah Pendidikan Guru Sekolah Dasar*, *2*(1),

39–45.
Lestari, R. D. (2021). Upaya meningkatkan motivasi belajar peserta didik dalam pembelajaran daring melalui media game edukasi wordwall di kelas IV sdn 01 Tanahbaya Tahun Pelajaran 2020/2021. *Jurnal ilmiah profesi guru (JIPG)*, *2*(2), 111-116.
Manurung, A. S., Halim, A., & Rosyid, A. (2020). Gerakan Literasi Matematika Bagi Siswa untuk Peningkatan Kemampuan Berpikir Kreatif di SDN Kenari 07 Pagi. *Jurnal Abdi Paud*, *1*(1), 7–12.
Nisa, M. A., & Susanto, R. (2022). Pengaruh Penggunaan Game Edukasi Berbasis Wordwall Dalam Pembelajaran Matematika Terhadap Motivasi Belajar. *JPGI (Jurnal Penelitian Guru Indonesia)*, *7*(1), 140. https://doi.org/10.29210/022035jpgi0005
Permana, S. P., & Kasriman, K. (2022). Pengaruh Media Pembelajaran Wordwall terhadap Motivasi Belajar IPS Kelas IV. *Jurnal Basicedu*, *6*(5), 7831–7839. https://doi.org/10.31004/basicedu.v6i5.3616
Siagian, G. I., & Tarigan, D. (2023). Pengaruh Media Pembelajaran Berbantuan Wordwall terhadap Hasil Belajar Siswa Matematika Kelas IV SDN 173633 Porsea. *Journal on Education*, *6*(1), 886–893. https://doi.org/10.31004/joe.v6i1.3007
Sugiyono, D. (2013). Metode penelitian pendidikan pendekatan kuantitatif, kualitatif dan R&D.
Walidah, G. N., Mudrikah, A., & Saputra, S. (2022). Pengaruh Penggunaan Game Edukasi Wordwall Terhadap Motivasi Dan Hasil Belajar Matematika Peserta Didik. *UJMES (Uninus Journal of Mathematics Education and Science)*, *7*(2), 105–115. https://doi.org/10.30999/ujmes.v7i2.2140
Wahyuningtyas, R., & Sulasmono, B. S. (2020). Pentingnya media dalam pembelajaran guna meningkatkan hasil belajar di Sekolah Dasar. *Edukatif: Jurnal Ilmu Pendidikan*, *2*(1), 23-27.

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