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The Effect of Wordwall Learning Media on the Learning Outcomes of Grade IV Students in IPAS Learning at Elementary School

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Abstract

This study aims to determine the learning outcomes of students who applied wordwall learning media and learning outcomes that did not apply wordwall learning media on student learning outcomes. The study used a quantitative approach with the True Experimental Design method through the Pretest–Posttest Control Group Design. The research sample consisted of 25 fourth-grade students, who were divided into an experimental class and a control class. Data collection was carried out through a learning outcome test, while data analysis included a normality test, a homogeneity test, and a t-test with the help of SPSS version 29. The increase in learning outcomes in the experimental class indicated that Wordwall media could help students understand the material more interactively and interestingly, thus having a positive impact on learning achievement. Based on the results of statistical tests, there was a significant influence of the use of Wordwall learning media on student learning outcomes. This finding confirms that the application of wordwall media can improve student learning outcomes. Thus, Wordwall media can be used as an alternative effective learning media in science learning in elementary schools. As a follow-up, it is recommended that teachers at SDIT Kamiliyah Palembang use wordwall media more effectively to improve student learning outcomes and learning interest.

Keywords: Elementary School; Learning Outcomes; Science; Wordwall Media

Abstrak

Penelitian ini bertujuan untuk mengetahui hasil belajar siswa yang diterapkan media pembelajaran wordwall dan hasil belajar yang tidak diterapkan media pembelajaran wordwall terhadap hasil belajar siswa. Penelitian menggunakan pendekatan kuantitatif dengan metode True Experimental Design *melalui desain* Pretest–Posttest Control Group Design*. Sampel penelitian terdiri atas siswa kelas IV yang berjumlah 25 orang, yang dibagi ke dalam kelas eksperimen dan kelas kontrol. Pengumpulan data dilakukan melalui tes hasil belajar, sedangkan analisis data meliputi uji normalitas, uji homogenitas, dan uji-t dengan bantuan SPSS versi 29. Peningkatan hasil belajar pada kelas eksperimen mengindikasikan bahwa media* Wordwall *dapat membantu siswa memahami materi secara lebih interaktif dan menarik, sehingga berdampak positif terhadap pencapaian belajar. Berdasarkan hasil uji statistik, terdapat pengaruh yang signifikan penggunaan media pembelajaran* Wordwall *terhadap hasil belajar siswa. Temuan ini menegaskan bahwa penerapan media wordwall dapat meningkatkan hasil belajar siswa. Dengan demikian, media* Wordwall *dapat dijadikan sebagai alternatif media pembelajaran yang efektif dalam pembelajaran IPAS di sekolah dasar. Sebagai tindaklanjut, disarankan agar guru-guru di SDIT Kamiliyah Palembang menggunakan media wordwall lebih efektif guna meningkatkan hasil belajar dan minat belajar siswa.*

Kata Kunci: *Hasil Belajar, IPAS, Media Wordwall, Sekolah Dasar*

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INTRODUCTION

Teachers play an important role in determining the appropriate learning tools and media to support the success of IPAS (Science and Social Studies) learning. Learning tools such as Lesson Plans (RPP), syllabi, annual programs (Prota), semester programs (Promes), as well as learning media need to be systematically designed and adapted to the characteristics of IPAS material and the conditions of the students. However, based on the results of preliminary observations conducted in Grade IV at the research school, IPAS learning is still dominated by the lecture method with the use of learning media that is limited and lacks variety. These conditions have caused IPAS learning to not yet run optimally. During the learning process, some students appeared less active, less enthusiastic in participating in learning activities, and experienced difficulties in understanding the material being delivered. This has had an impact on the low learning interest and learning outcomes of students in the IPAS subject. Monotonous learning makes students easily feel bored and less motivated to participate actively. These findings are consistent with previous research which states that the use of less innovative learning tools and media can reduce the effectiveness of learning. Therefore, more innovative and interactive learning media, such as Wordwall, is needed to increase student engagement and learning outcomes in IPAS learning.

Learning media is a tool needed by students in IPAS learning so that students are able to understand new concepts through the learning media used. Good learning media in the learning process incorporates elements of games within it, such as Wordwall, which can make students feel happy and not pressured when working on questions or exercises during the learning process (Rifatul Khoriyah and Abdul Muhid). Internet-based learning media encourages students to play an active role in the independent learning process, where students can access information online so that learning can be carried out more effectively (Andy Muis et al., 2021). With internet-based learning media, the learning process can not only be carried out in the classroom. Furthermore, the use of the internet today is not only done through a PC but can also be done using a smartphone.

Wordwall media is a collection of vocabulary attached to predetermined images in capital letters so that it is easy for students to see (Khusnul Maghfiroh, 2022). Wordwall is a digital gamification application that offers various types of games and quizzes that can help teachers prepare material evaluations. Wagsaf states that a wall of words is a learning medium that must be used, not merely displayed or viewed. A wall of words can be designed to enhance group learning activities and actively involve students in its creation. They can also be designed to improve group learning activities and engage students in both its creation and its use (Kustandi, 2011).

According to Wahyu Siti Juliana et al., Wordwall is an engaging, varied, and non-monotonous learning medium, enabling students to understand the learning material being delivered (Wahyu Siti Juliana et al., 2020). Meanwhile, according to Lestari, Wordwall is a medium accessed through a browser that can be used as a learning resource, media, and assessment tool (Rizki Dwi Lestari, 2021). Through Wordwall learning media, students can complete questions or quizzes via their mobile phones with the help of an internet connection. Wordwall learning media is capable of attracting students' attention to participate in learning

because it contains game elements within Wordwall, making students more enthusiastic during the learning process.

Based on the results of preliminary observations conducted on Monday, October 7, 2024, at SDIT Kamiliyah Palembang, it was found that teachers at SDIT Kamiliyah have not yet used internet-based learning media in the classroom. Teachers in the classroom during the learning process only use whiteboards and books as media. If whiteboards and books or student worksheets (LKS) are not used creatively, the learning process will feel monotonous and boring for students, resulting in student learning outcomes that are still relatively low. Therefore, the researcher uses more innovative learning media, which is expected to improve student learning outcomes in IPAS learning, namely by using Wordwall learning media. Wordwall learning media is not monotonous like worksheets; Wordwall media enables students to understand the IPAS learning process more quickly because it comes in the form of quizzes, puzzles, word grouping, word searches, and so on (Author's Observation, 2025).

Furthermore, based on the results of interviews with the Grade IV.B teacher at SDIT Kamiliyah Palembang, data was obtained indicating that the teacher experiences difficulties in using innovative learning media in teaching due to a lack of knowledge about IT media. In the IPAS learning process, this is reflected in student learning outcomes that are still relatively low. Based on the daily test scores of Grade IV students at SDIT Kamiliyah Palembang, particularly in IPAS learning, it is known that 6 students obtained scores below the Minimum Competency Criteria (KKM), which is below 70, while 9 students have already met the KKM with scores above 70 (Interview with source, 2025).

Based on these conditions, efforts are needed to present innovative and engaging learning media that are suited to the characteristics of students in order to improve IPAS learning outcomes. One alternative learning medium that can be used is Wordwall media. Therefore, the problem in this study is formulated as follows: the low learning outcomes of Grade IV students at SDIT Kamiliyah Palembang in IPAS learning are caused by the suboptimal use of internet-based learning media, making it necessary to examine the use of Wordwall learning media as an effort to improve student learning outcomes in IPAS learning at SDIT Kamiliyah Palembang.

RESEARCH METHODOLOGY

In conducting this research, the researcher will use quantitative research with the type of True Experimental Design, which is a quantitative experimental research method in which the researcher uses two groups (experimental and control) that are randomly selected from the population, measuring variables before (pretest) and after treatment (posttest) in both groups, to determine the effect of the independent variable (treatment) on the dependent variable under controlled conditions, with the main characteristic being random sampling to compare results validly. One sample group serves as the experimental class taught using Wordwall media, and the other class serves as the control class taught using conventional media. The form of quantitative research design uses an experimental method with a Pretest-

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Posttest Control Groups Design. In this study, there is an experimental group that is given treatment and a control group that is not given treatment (Paul C. Price et al., 2017). The data in this study were obtained through pretests and posttests of students regarding the learning outcomes of Grade IV students in IPAS learning at SDIT Kamiliyah Palembang. The population in this study consists of Classes IV.A and IV.B with a total of 25 students. The sampling technique used is saturated sampling, where all members of the population are used as the sample. The tests to be conducted are validity, reliability, homogeneity, and t-tests using the independent sample t-test.

RESULTS AND DISCUSSION

Test Validity Results

The validity test is used in this study to determine the level of validity of the learning outcome test instrument used. An instrument is considered valid if the test items are able to measure what should be measured in accordance with the learning objectives of IPAS. Therefore, the validity test was conducted to ensure that each test item has a significant relationship with the total score, so that the instrument used is appropriate and accurate in measuring student learning outcomes. Instruments that have met the validity criteria are subsequently used in research data collection.

Tabel 1. Validity Test Results of Pretest and Posttest Item Questions

Question Items	R Count	R tabel	Description
1	0,053	0,396	Invalid
2	0,646	0,396	Valid
3	0,818	0,396	Valid
4	-0,064	0,396	Invalid
5	0,153	0,396	Invalid
6	0,414	0,396	Valid
7	0,587	0,396	Valid
8	0,298	0,396	Invalid
9	0,743	0,396	Valid
10	0,483	0,396	Valid
11	0,534	0,396	Valid
12	0,526	0,396	Valid
13	0,039	0,396	Invalid
14	0,201	0,396	Invalid
15	0,610	0,396	Valid
16	0,508	0,396	Valid
17	0,449	0,396	Valid
18	0,130	0,396	Invalid

19	0,242	0,396	Invalid
20	0,467	0,396	Valid

From the data in the table above, it can be concluded that the results of the validity calculation using SPSS Software version 30, from 20 test items given to 25 students with an r table at a significance level of 5% which is 0.396, if r count > r table then it is declared valid. However, if r count < r table then it is declared invalid. As seen in the table above, there are 12 valid test items and 8 invalid test items, so out of the 20 test items given to students, there are 12 test items that can be used as a test of the learning outcomes to be studied.

Reliability Test

In this study, the researcher measures the reliability test using Cronbach's Alpha with the assistance of SPSS version 30 for Windows. If r count > r table then the item can be said to be reliable. However, if r count < r table then the item can be said to be unreliable. With the reliability coefficient criteria as follows:

Tabel 2. Reliability Coefficient Criteria

Reliabilitas	Criteria
0,8-1,0	Very High
0,6-0,799	High
0,4-0,59	Moderate
0,2-0,39	Low

The results of the reliability test of the test instrument using Cronbach's Alpha are as follows:

Tabel 3. Reliability Test Results of the Questions

Reliability Statistics	
Cronbach's Alpha	N of Items
.721	20

Based on the reliability test table above, the Cronbach's Alpha r count value obtained is 0.721. Therefore, it can be concluded that the test questions are considered reliable with the criteria of "High".

Tabel 4. Hasil Nilai *pretest* dan *posttest* kelas IV.A (kelas kontrol)

No	Name	Value	
		Pretest	posttest
1	MFA	33	58
2	R	42	42
3	MSA	50	67
4	MFH	50	67

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5	AA	58	75
6	IFH	42	50
7	F	42	58
8	NNN	50	67
9	SAF	75	83
10	ARR	58	58
11	GAC	67	75
12	M	50	67
13	MAA	50	67
14	KMFA	33	42
15	A	42	58
	TOTAL	742	934
	AVERAGE	49,46	62,26

Based on the pretest and posttest data for Class IV.A above, it was found that in the pretest scores, almost all participants obtained scores below the Minimum Competency Criteria (KKM) standard. Out of 15 students, only 1 student met the KKM standard. Meanwhile, in the posttest scores, there was an increase in completeness, with 3 students meeting the KKM standard and 12 students not meeting the KKM standard.

Tabel 5. Hasil Nilai *pretest* dan *posttest* kelas IV.B (kelas eksperimen)

No	**Name**	**Value**	
		Pretest	**Posttest**
1	PAS	42	67
2	NK	33	67
3	TNK	50	83
4	RPZ	83	100
5	FH	42	75
6	MF	50	75
7	FSA	33	42
8	FN	50	83
9	NA	67	92
10	ZN	75	100
	TOTAL	525	784
	Avarage	52,50	78,40

Based on the pretest and posttest data for Class IV.B above, it was found that in the pretest scores, there were 2 students who met the Minimum Competency Criteria (KKM) standard. Meanwhile, in the posttest scores, there was a fairly good increase in completeness, with 7 students meeting the KKM standard and 3 students not meeting the KKM standard.

Uji Normalitas *Shapiro-Wilk*

Tabel 6. Normality Test Results

Tests of Normality							
	Class	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
pretest	Class control	.215	15	.061	.927	15	.248
	Class experimen	.258	10	.058	.901	10	.227
posttest	Class Control	.191	15	.147	.939	15	.366
	Class exsperimen	.158	10	.200*	.932	10	.467

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the research using the Shapiro-Wilk normality test, from the table above it can be seen that the significance values of the posttest score data on student learning outcomes without using Wordwall media (control class) and student learning outcomes using Wordwall media (experimental class) are 0.366 and 0.467 respectively. Both of these significance values are greater than the significance level (0.05), so it can be stated that the final scores of student learning outcomes are normally distributed.

Homogeneity Test

Tabel 7. Homogeneity Test Results of the Control Class and Experimental Class

Test of Homogeneity of Variance					
		Levene Statistic	df1	df2	Sig.
hasil belajar	Based on Mean	1.273	1	23	.271
	Based on Median	1.181	1	23	.288
	Based on Median and with adjusted df	1.181	1	21.924	.289
	Based on trimmed mean	1.267	1	23	.272

Based on the table above, it can be seen that the value in this study, with the collected data in the form of posttest data from the control class and the experimental class, obtained a Sig value of 0.271. Since the Sig value of 0.271 > 0.05, it can be concluded that the learning outcome data of students in the control class and the experimental class are homogeneous.

Uji t *(Independent Sample t-test)*

Tabel 8. Hypothesis Test Results

Independent Samples Test		
Levene's Test for Equality of Variances	t-test for Equality of Means	

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						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
hasil belajar	Equal variances assumed	1.273	.271	-2.771	23	.005	.011	-16.133	5.823	-28.179	-4.087
	Equal variances not assumed			-2.555	14.308	.011	.023	-16.133	6.313	-29.647	-2.620

Based on the results of the independent sample t-test above, a sig. (2-tailed) value of 0.011 was obtained. Since the significance value is less than 0.05, Ho is rejected and Ha is accepted. This can be stated that the learning outcomes of the experimental class students are better than those of the control class, so it can be concluded that there is a significant effect of the use of Wordwall media on the learning outcomes of Grade IV students in IPAS learning on the topic of plant body parts at SDIT Kamiliyah Palembang.

The results of the Independent Sample T-Test show that there is a significant difference in learning outcomes between the experimental class and the control class after being given treatment in the form of using Wordwall learning media. These findings indicate that Wordwall media has the potential to improve student learning outcomes in IPAS learning. However, this study has limitations, namely the unequal number of students in the experimental class and the control class. This condition has the potential to affect the results of the analysis, so that the differences in learning outcomes obtained cannot be fully attributed solely to the treatment of using Wordwall learning media. Therefore, the results of this study need to be interpreted carefully. Future research is advised to use a balanced number of samples or involve more classes so that the effect of learning media can be analyzed more accurately.

DISCUSSION

Based on the results of the research that has been conducted, it can be seen that the pretest results of students in the control class that did not apply Wordwall learning media still had students who obtained scores below the KKM standard, with the lowest score being 33. Out of 15 students, only 1 student met the KKM standard of 75. The overall average score was 49.46. Meanwhile, the posttest results of students in the control class that did not apply Wordwall media still had students who obtained scores below the KKM, with the lowest score being 42. Out of 15 students, 3 students met the KKM standard with scores ranging from 75 to 83. The overall average score was 62.26. This indicates that there are still students who lack understanding of the material delivered without using Wordwall learning media.

This is consistent with previous research conducted by Rayhanun Fadilla et al., which states that the control class that did not apply Wordwall media obtained a result of 20.66, meaning it was not effective, as the lecture method alone cannot make students active but rather passive

and more monotonous. This shows that there is no improvement in learning outcomes when only using conventional learning in Grade XII Social Studies subject at SMA Negeri 2 Semarang.

Based on the results of the research that has been conducted, it can be seen that the pretest results of students before applying Wordwall learning media showed students who obtained scores below the KKM standard, with the lowest score being 67. Out of 10 students, 2 students met the KKM standard and 8 other students did not meet the KKM standard. The overall average score was 52.50. Meanwhile, the posttest results of students in the experimental class that applied Wordwall media still had students who obtained scores below the KKM, with the lowest score being 42. Out of 10 students, 7 students met the KKM standard and 3 other students did not meet the KKM standard. The overall average score was 78.40. This means that the learning outcomes of the experimental class using Wordwall learning media are higher than those of the control class that did not use Wordwall learning media.

This is consistent with research by Ewillya Arlia Afrida (2024), which states that there is an effect of Wordwall learning media on student learning outcomes, based on data presentation and data analysis, where student learning outcomes before the application of Wordwall media had an average of 61.389, and after the application of Wordwall media had an average of 80.139, so it can be stated that there was a significant improvement in the learning outcomes of Grade X students in Economics subject at SMAN 12 Pekanbaru.

Based on the results of the calculation using the Independent Sample T-Test, the results of the T-test calculation show that Ha is accepted because sig < 0.05, namely 0.011 < 0.05, meaning that the data obtained from the research on the learning outcomes of the experimental group students using Wordwall media in learning activities differ from the learning outcomes of the control group students using conventional learning. Therefore, it can be concluded that the application of Wordwall media has a significant effect on student learning outcomes in IPAS learning on the topic of plant body parts in Grade IV at SDIT Kamiliyah Palembang.

The same results are also explained in the research of Shofiyah Launin et al. (2022), which states that Wordwall media is effective in improving student learning outcomes, as seen from the results of hypothesis testing using the independent sample t-test, namely sig. (2-tailed) of 0.000, which means the result is < 0.05, so it is concluded that there is an effect of the Wordwall online game media in improving the learning interest of Grade IV students at SDN 1 Sukorame.

CONCLUSION

Based on the research results, it is concluded that Wordwall Learning Media has an effect on the Learning Outcomes of Grade IV Students in IPAS Learning at SDIT Kamiliyah Palembang. Test validation was conducted by Grade V students at SDIT Kamiliyah Palembang, which showed that out of 20 questions, 12 questions were valid for use. The average result obtained in the control class was 62.26, while the average in the experimental class was 78.4, so it can be concluded that in the experimental class using Wordwall learning media, a significant improvement in learning outcomes occurred. The results of the Independent Sample T-Test show that the significance value is 0.011 < 0.05, meaning that Ho is rejected and Ha is

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accepted. Based on the average posttest scores of both classes, the experimental class that learned using Wordwall learning media obtained higher scores than the control class that learned without using Wordwall learning media (conventional). The implication of the results of this study is that Wordwall learning media can be used by teachers as a learning medium in IPAS learning because it can help improve student learning outcomes. Wordwall learning media can also be utilized by teachers to create IPAS learning that is more engaging, non-monotonous, and makes students more active in the learning process in the classroom.

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