Effectiveness of Wordwall Media in Increasing Student Engagement in PAI Learning

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Abstract: This study aims to assess the effectiveness of Wordwall in enhancing student engagement to learning outcomes in Islamic Religious Education (PAI) at SMAN 74 Jakarta. Combining quantitative and qualitative data using a mixed approaches approach, the research compares Wordwall with Google Form using pretest and posttest on two student groups (experimental and control), each consisting of 30 students, along with interviews conducted with 6 students from the experimental group. The findings reveal that Wordwall significantly boosted student engagement and learning outcomes compared to Google Form. Data analysis with SPSS showed that the mean scorewas 91.67 with a standard deviation of 7.915 for the experimental group, whereas the control group had a mean score of 88.33 with a standard deviation of 6.477. Interviews further supported these findings, indicating that Wordwall's interactive nature facilitated better understanding of the material. The study confirms Wordwall's potential as an effective digital learning tool

Keywords: Wordwall; Learning Outcomes; Islamic Religious Education.

Abstrak: Tujuan penelitian ini untuk mengetahui efektivitas *Wordwall* dalam meningkatkan keterlibatan siswa terhadap hasil belajar Pendidikan Agama Islam (PAI) di SMAN 74 Jakarta. Dengan menggunakan pendekatan metode campuran yang mengintegrasikan data kuantitatif dan kualitatif, penelitian ini membandingkan *Wordwall* dengan *Google Form* dengan menggunakan *pretest* dan *posttest* pada dua kelompok siswa, serta (eksperimen dan kontrol) dengan tiga puluh siswa masing-masing, wawancara yang dilakukan dengan 6 siswa dari kelompok eksperimen. Temuan menunjukkan bahwa *Wordwall* secara signifikan meningkatkan keterlibatan dan hasil belajar siswa dibandingkan dengan *Google Form*. Analisis data dengan *SPSS* menunjukkan bahwa kelompok eksperimen memiliki nilai rata-rata 91.67 dan standar deviasi 7.915, sedangkan kelompok kontrol memiliki nilai rata-rata 88.33 dengan standar deviasi 6.477. Hasil wawancara lebih lanjut mendukung temuan ini, yang menunjukkan bahwa sifat interaktif *Wordwall* memfasilitasi pemahaman yang lebih baik terhadap materi. Penelitian ini menegaskan potensi *Wordwall* sebagai alat pembelajaran digital yang efektif.

Kata Kunci: *Wordwall*; Hasil Belajar; Pendidikan Agama Islam.

INTRODUCTION

Information and Communication Technology advancements have had a profound impact on a number of spheres of life, including education. In the current era of information technology, various digital media have become an inseparable part of the learning process.[1] Technological advances have also led to a change in the learning paradigm. Accordingly, it is anticipated that students will participate more actively in the educational process.[2] Education is impacted by digital development, which promotes the use of technology in the classroom. Therefore, to conduct learning activities in the modern era, Islamic education institutions must take advantage of the availability of the internet and its widespread utilization.[3] Schools are required to keep ahead of technology by providing electronic devices that promote learning, therefore the education sector must innovate positively to improve education.[4] How to make learning interesting and effective, especially in terms of religion, is one of the challenges faced by educators in the current era.

Islamic Religious Education (PAI) is a methodical and practical effort to guide the personal development of students to live in accordance with Islamic teachings and achieve happiness in the world and the hereafter.[5] As one of the most important subjects, Islamic Religious Education requires innovative learning approaches to engage students. Teachers, especially those who teach Islamic Religious Education, should gain a better understanding of teaching methods, utilized learning tools.[6] A careful and planned approach to the application of technology in Islamic education will help maximize the potential of technology while reducing the risks and difficulties

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[1] Jenita et al., "Pemanfaatan Teknologi Dalam Menunjang Pembelajaran: Pelatihan Interaktif Dalam Meningkatkan Kualitas Pendidikan," *Community Development Journal* 4, no. 6 (2023): 13121–29.

[2] Ani Nur Aeni et al., "Pengembangan Aplikasi Games Edukatif Wordwall Sebagai Media Pembelajaran Untuk Memahami Mater Pendidikan Agama Islam Bagi Siswa Sd," *Primary: Jurnal Pendidikan Guru Sekolah Dasar* 11, no. 6 (2022): 1835, https://doi.org/10.33578/jpfkip.v11i6.9313.

[3] Aastiqomah Aastiqomah and Lismawati Lismawati, "Penggunaan Media Pembelajaran Berbasis Teknologi Dalam Upaya Meningkatkan Kualitas Pendidikan Agama Islam," *Journal of Islamic Education and Innovation* 4, no. 2 (2023): 92–101, https://doi.org/10.26555/jiei.v4i2.9780.

[4] Ana Maritsa et al., "Pengaruh Teknologi Dalam Dunia Pendidikan," *Al-Mutharahah: Jurnal Penelitian Dan Kajian Sosial Keagamaan* 18, no. 2 (2021): 91–100, https://doi.org/10.46781/al-mutharahah.v18i2.303.

[5] Hanifah Nur Azizah, "Peningkatan Penguasaan Kosakata Bahasa Arab Melalui Penggunaan Media Word Wall," *Alsuniyat* 1, no. 1 (2020): 1–16, https://doi.org/10.17509/alsuniyat.v1i1.24212.

[6] Badrina Alfi and Lismawati Lismawati, "Assessing Student Engagement in Qurdis Subject Using Wordwall" 8, no. 1 (2024): 8–25, https://doi.org/10.21070/halaqa.v8i1.1672.

that may arise.[7] Continuous efforts are needed to improve the effectiveness of Islamic learning, so that students can be more active, involved, and have a deep understanding of the material. Traditional and conventional learning approaches are no longer sufficient to fulfill students' need for comprehending and putting Islamic principles into practice in their daily lives.[8]

Teachers develop student-involved learning practices in order to meet learning objectives.[9] Students are more likely to actively engage in the learning process when they find learning enjoyable.[10] Learning media development must be systematic and student-focused to add color to the learning atmosphere and improve communication and interaction between educators and students.[11] Learning development invites teachers to communicate with students in order to get to know their habits, culture, and characteristics.[12] Teachers of Islamic Religious Education have assisted pupils in activating their inner mental faculties, including observation, memory, curiosity, reasoning, fantasy, emotion, and personality development, by utilizing well-designed learning materials.[13] Three components make up student engagement: cognitive, emotional, and behavioral.[14] Students' active participation in the educational process is an important part of the success of education. However, in reality, many teachers still

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[7] Putri Saidatuzzahra et al., "Peran Teknologi Dalam Pendidikan Karakter Di Era Digital," *Jurnal Teknologi Dan Pendidikan* 18, no. 3 (2024): 245–60, https://doi.org/10.17509/jtp.v18i3.35678.

[8] Lilis Sumarni, "Pengembangan Metode Pembelajaran Interaktif Dalam Mata Pelajaran PAI Untuk Meningkatkan Partisipasi Dan Pemahaman Siswa," *GUAU : Jurnal Pendidikan Profesi Guru Agama Islam* 3, no. 2 (2023): 318–25.

[9] Ayu Ariyana Mulyani, Elly Malihah Setiadi, and Siti Nurbayani, "Backward Design : Strategi Pembelajaran Dalam Meningkatkan Keterlibatan Siswa," *Jurnal Paedagogy* 10, no. 3 (2023): 798, https://doi.org/10.33394/jp.v10i3.7766.

[10] Maximus Tamur et al., "Bermain Dan Belajar Dengan Kahoot!: Meningkatkan Keterlibatan Siswa Smp Menggunakan Game Digital," *AKSIOMA: Jurnal Program Studi Pendidikan Matematika* 11, no. 4 (2022): 2857, https://doi.org/10.24127/ajpm.v11i4.6065.

[11] Ainatul Mardhiyah, "Pemanfaatan Media Pembelajaran Wordwall Sebagai Evaluasi Pembelajaran Pada Mahasiswa Pendidikan Agama Islam," *Muta'allim: Jurnal Pendidikan Agama Islam* 1, no. 4 (2023): 481–88, https://doi.org/10.18860/mjpai.v1i4.2710.

[12] Nofmiyati Nofmiyati, Miftahuddin Miftahuddin, and M. Fahli Zatrahadi, "Analisis Partisipasi Siswa Dalam Pembelajaran Agama Islam: Analisis Studi Literatur," *Jurnal Administrasi Pendidikan & Konseling Pendidikan* 4, no. 1 (2023): 7, https://doi.org/10.24014/japkp.v4i1.24983.

[13] Yulia Syafrin et al., "Pelaksanaan Pembelajaran Pendidikan Agama Islam," *Educativo: Jurnal Pendidikan* 2, no. 1 (2023): 72–77, https://doi.org/10.56248/educativo.v2i1.111.

[14] Fikrie and Lita Ariani, "Keterlibatan Siswa (Student Engagement) Di Sekolah Sebagai Salah Satu Upaya Peningkatan Keberhasilan Siswa Di Sekolah," *Prosiding Seminar Nasional & Call Paper Psikologi Pendidikan 2019 Fakultas Pendidikan Psikologi*, no. April (2021): 103–10.

face the problem of low student engagement, especially in subjects that are considered difficult or uninteresting, such as Islamic Religious Education.

Wordwalls can encourage students to create and use them, and they are intended to improve study group activities.[15] A website called Wordwall offers a selection of entertaining educational games that students can use to help and evaluate.[16] This platform allows users to create quizzes, pair places, match words, create anagrams, decipher words, word searches, and group words.[17] Wordwall is a great tool to encourage learners' new interest in learning.[18] The average percentage of interest, shows that students' interest in learning increases when they learn with the help of media.[19] However, technical readiness and acceptance of all parties involved are some of the factors that must be considered when using technology in learning. Students may now use more material and learning strategies thanks to digital technology, which makes learning more efficient and effective.[20]

In Class X of SMAN 74 Jakarta, the researcher found that some students' activities in Islamic Religious Education lessons were unpleasant and uninteresting due to the use of PowerPoint and the classic lecture method, teachers tend to use books as the main method, which makes many students feel bored and saturated.[21] With innovation in learning media, learners can more effectively achieve their educational goals. Learning tools are essential in assisting with the instructional process and learning process because they become intermediaries that allow material to be delivered in a way that is easily accepted by students, thereby increasing students' cognitive

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[15] Dewa Akbar Pamungkas et al., "Pengaruh Penggunaan Media Pembelajaran Word Wall Terhadap Motivasi Belajar IPS Oleh," *JIPSINDO (Jurnal Pendidikan Ilmu Pengetahuan Sosial Indonesia) Universitas Negeri Surabaya* 10, no. 01 (2023): 67–78, https://doi.org/10.21831/jipsindo.v10i1.53199.

[16] Mahwar Alfan Nisa and Ratnawati Susanto, "Pengaruh Penggunaan Game Edukasi Berbasis Wordwall Dalam Pembelajaran Matematika Terhadap Motivasi Belajar," *JPGI (Jurnal Penelitian Guru Indonesia)* 7, no. 1 (2022): 140, https://doi.org/10.29210/022035jpgi0005.

[17] Aeni et al., "Pengembangan Aplikasi Games Edukatif Wordwall Sebagai Media Pembelajaran Untuk Memahami Mater Pendidikan Agama Islam Bagi Siswa Sd."

[18] Lismawati Lismawati, Alif Rizky Ramadhan, and Fathiyyah Adilah, "Pelatihan Evaluasi Siswa Dalam Pembelajaran PAI Dan Bahasa Arab Melalui Quiz Wordwall Di SMA Muhammadiyah 15 Jakarta," *Jurnal Pengabdian Masyarakat Indonesia* 3, no. 4 (2023): 497–502, https://doi.org/10.52436/1.jpmi.1282.

[19] hilmi Fadhillah Akbar And Muhamad Sofian Hadi, "Pengaruh Penggunaan Media Pembelajaran Wordwall Terhadap Minat Dan Hasil Belajar Siswa," *CV Adanu Abimata* 4, no. 2 (2023): 1.

[20] Abdul Sakti, "Meningkatkan Pembelajaran Melalui Teknologi Digital," *Jurnal Penelitian Rumpun Ilmu Teknik* 2, no. 2 (2023): 212–19, https://doi.org/10.55606/juprit.v2i2.2025.

[21] Studi pendahuluan yang dilakukan di SMAN 74 Jakarta pada bulan September 2024.

abilities.[22] The use of learning media is an additional method to improve student academic achievement in Islamic Religious Education.[23] One of the media that can be used is the Wordwall game, which is an online-based learning platform.[24]

However, the implementation of this application in the context of Islamic education has not been explored in depth. Wordwall has been widely used as an interactive learning media for various subjects, but there are still few studies that examine how this media can improve students' engagement in Islamic education learning, especially, active participation, and understanding of the material. Therefore, it is relevant to analyze the use of Wordwall application in learner evaluation to understand the potential and challenges that may arise. In the pedagogical dimension, learning outcomes assessment is a skill used to evaluate how successful teachers are in achieving learning objectives.[25] By using the Wordwall application to assess students, can strengthen the interaction between teachers and students while strengthening their learning experience.[26] Learning media is any form of means that is able to convey information and trigger students' thoughts, emotions, and motivation to learn on their own.[27] Therefore, the extent to which the Wordwall application can meet the needs of learning evaluation needs to be thoroughly analyzed.

According to [28] the research topic is "Assessing Student Engagement in Qurdish Subjects Using Wordwall." using a One Group Pretest and Postes design in a quantitative experimental approach. The analysis's findings demonstrated that Wordwall learning resources significantly impacted students' learning objectives.

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[22] Edenia Cesarria Sari Kirnaningtyas and Naniek Sulistya Wardani, "Pengembangan Media Quiz Berbasis Wordwall Untuk Meningkatkan Kemampuan Kognitif P Eserta Didik Kelas V SD Wonosobo Semester 2 Tahun Pelajaran 2023-2024," *JIIP (Jurnal Ilmiah Ilmu Pendidikan)* 7 (2024): 11453–60.

[23] Mutia Safitri, Nazliati, and Muhammad Nuh Rasyid, "Penerapan Media Web Wordwall Untuk Meningkatkan Hasil Belajar PAI Siswa Di SMP Negeri 2 Langsa," *Al-Ikhtibar: Jurnal Ilmu Pendidikan* 9, no. 1 (2022): 47–56, https://doi.org/10.32505/ikhtibar.v9i1.636.

[24] Tika Nurul Hidayati, "Efektifitas Pengembangan Media Belajar Online Game Wordwall Mata Pelajaran PAI SMPN 3 Bengkulu Tengah Di Era New Normal," *GUAU: Jurnal Pendidikan Profesi Guru Agama Islam* 2, no. 2 (2022): 147–56,
 http://studentjournal.iaincurup.ac.id/index.php/guau/article/view/220.

[25] Sulfi Purnamasari et al., "Bermain Bersama Pengetahuan Peserta Didik Melalui Media Pembelajaran Berbasis Game Online Word Wall," *Jurnal Pengabdian Kepada Masyarakat* 1, no. 1 (2020): 177–80.

[26] Siti Lathifatus Sun'iyah, "Media Pembelajaran Daring Berorientasi Evaluasi," *Jurnal Studi Keagamaan, Pendidikan Dan Humaniora* 7, no. 1 (2020): 1–18.

[27] Azizah, "Peningkatan Penguasaan Kosakata Bahasa Arab Melalui Penggunaan Media Word Wall."

[28] Alfi and Lismawati, "Assessing Student Engagement in Qurdis Subject Using Wordwall."

Despite the fact that both my study and the previous study used Wordwall media, there is one thing that makes my study new, I used a mixed method concurrent embedded design. What distinguishes my previous research is that the control class used book media, while I used Google Form. In addition, qualitative analysis can be used to explore the experience and how students perceive Wordwall as a medium for Islamic Religious Education learning. Therefore, the problem I discuss in this study is whether Wordwall learning media can increase student engagement in class so that it affects learning outcomes? and how the average results obtained between Google Form and Wordwall are different?

In the context of this research, I aim to find out the effectiveness of Wordwall in increasing student engagement in Islamic Religious Education subjects and compare student learning outcomes between Google Form and Wordwall. It is hoped that this study's findings will encourage the development of more creative and efficient learning strategies and enhance the standard of Islamic Religious instruction taught in schools.

METHOD

This research uses a mixed methods approach with a concurrent embedded design. concurrent embedded design is also known as unbalanced mixture which is a research approach that combines quantitative and qualitative techniques in an unbalanced way. Numerous benefits of combination techniques include more in-depth factual analysis, more intricate responses, teamwork, freedom of opinion, method flexibility, and more robust results.[29] The use of this mixed method in experimental research allowed me to obtain more in-depth results by combining objective quantitative data and qualitative insights that tend to be subjective. To ascertain if the findings confirm or refute one another, these two categories of data are next contrasted and assessed. By examining the pre- and post-test findings alone, it is impossible to fully comprehend whether Wordwall works or not. By conducting interviews, it is possible to gain a better understanding of students' perceptions, emotions, and

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[29] Marinu Waruwu, "Pendekatan Penelitian Pendidikan: Metode Penelitian Kualitatif, Metode Penelitian Kuantitatif Dan Metode Penelitian Kombinasi (Mixed Method)," *Jurnal Pendidikan Tambusai* 7, no. 1 (2023): 2896–2910, https://doi.org/10.36706/jbti.v9i2.18333.

motivations. Experimental research aims to identify changes in a strictly controlled condition, where specific treatments are applied to the condition.[30]

Mixed method with concurrent embedded design, quantitative data can come from quasi experiments, while qualitative data can come from interviews. After analyzing both types of data, the researcher then compares the results of the two methods to find out if there is a striking difference. This research employed a quasi-experimental design. The control group was given pretest questions, and posttest questions while the experiment was given pretest questions, treatment, and posttest questions. The results were compared. In the context of experimental research, there is a hypothesis which is an initial prediction of the research results, which will then be proven through empirical data collected.[31] Students' motivations, perceptions, and experiences were made clearer by the interview data. As a result, qualitative data was added to quantitative data. Because it is more efficient and provides a more thorough knowledge of students' involvement in Wordwall learning, the co-embedded approach was selected.

In this study, interviews with several people in class X.C aimed to comprehend how Wordwall media usage affects students' participation in Islamic Religious Education learning. Through this approach, interviews can provide in-depth data regarding Wordwall media's effect on students' involvement in Islamic Religious Education learning. In addition, in-depth interviews will provide a more detailed understanding of the impact of Wordwall on student engagement. The results of these interviews will provide additional context for the quantitative data and enrich the research analysis, descriptive analysis, validity test, reliability test, normality test, homogeneity test, paired simple t test, and independent sample t test were employed in this study to supplement the pre-test and post-test results.

The research was conducted at SMAN 74 in Jakarta, with 30 students from grades 10 C and 30 students from grades 10 E. The research instruments were pretest

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[30] Usep Mudani Karim Abdullah and Abdul Azis, "Efektifitas Strategi Pembelajaran Analisis Nilai Terhadap Pengembangan Karakter Siswa Pada Mata Pelajaran Sejarah Kebudayaan Islam," *Jurnal Penelitian Pendidikan Islam* 7, no. 1 (2019): 51, https://doi.org/10.36667/jppi.v7i1.355.

[31] Irma Yanti, "Pengaruh Tadarus Al-Qur'an Terhadap Sikap Menghargai Sesama Manusia: Penelitian Eksperimen Pada Kasus Bullying Siswa SD Kelas 2 SDIT Bhakti Pertiwi Baleendah Bandung," *Jurnal Penelitian Ilmu Ushuluddin* 2, no. 3 (2022): 467–89, https://doi.org/10.15575/jpiu.14435.

and posttest using Google Form and Wordwall, and interviews with 6 people from class X.C who used Wordwall. This study involved students who were in tenth grade in the subject of Islamic Religious Education. I used thirty people from class E as a control class with Google Form and thirty people from class C as an experimental class with Wordwall. The data collection instruments were pretest and posttest questions through Google Form links and Wordwall links. The data obtained was then analyzed to assess the learning evaluation application's efficacy.

Data analysis is done by comparing Wordwall and Google Form applications. Variable X serves as Wordwall learning media. Variable Y serves as student engagement. Quantitative data from pretests and posttests and qualitative data from interviews, these results are used to determine the effectiveness of Wordwall media in increasing student engagement on learning outcomes.

RESULT AND DISCUSSION

The study was carried out to ascertain the effectiveness of Wordwall in increasing student engagement in Islamic Religious Education subjects and comparing student learning outcomes between Google Form and Wordwall. This research combines experimental and qualitative techniques, therefore, the data obtained will be tested for validity, reliability, and descriptive analysis, independent sample analysis, normality test, homogeneity, and paired t-test, as well as interviews.

A. Validity Test

Validity was tested to ensure that the variables used in the study were applied correctly. The validity of the measuring device is established by the validity tes.[32] The instrument used to calculate the value of the Islamic Religious Education (PAI) material of Chapter 4 of Class X, "Islamic Insurance, Banks, and Cooperatives for the People's Economy and Maslahah Business", was tested on 30 students of Class X A. The data from the instrument trial were then compiled. In the event that the computed r value exceeds the r table value, the r value is positive and $p < 0.05$, the test is considered valid. The r table value with a 5% error rate is

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[32] Nilda Miftahul Janna and Herianto, "Konsep Uji Validitas Dan Reliabilitas Dengan Menggunakan SPSS," *Jurnal Darul Dakwah Wal-Irsyad (DDI)*, no. 18210047 (2021): 1–12.

0.374 for n = 30. In addition, if the correlation coefficient of each item is greater than 0.374, then the instrument item is considered valid. Using Statistics Passage for the Social Science (SPSS) software version 29, the validity test results for the 10 multiple choice questions were valid.

B. Reliability Test

The findings from the reliability test of the inquiry "Islamic Insurance, Banks, and Cooperatives for the People's Economy and Maslahah Business" were calculated using the Statistics Passage for the Social Science (SPSS) version 29 program. The test was carried out by analyzing the previously calculated data with the internal consistency technique with the Cronbach's Alpha test. According to the theory of limits, the value of student reliability is 0.774. Then the question instrument to test the reliability is reliable. Table 1 displays the results of the reliability test.

Table 1. Results of Reliability Test with SPSS Version 29

Reliability Statistics

Cronbach's Alpha	N of Items
.774	10

C. Descriptive Analysis

The following are the results of the control group and experimental group both prior to and following the test: Descriptive analysis can be used to explain and describe research data.

Table 2. Descriptive Analysis Results with SPSS version 29

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-Test Eksperimen	30	80	100	86.33	6.687
Post-Test Eksperimen	30	80	100	91.67	7.915
Pre-Test Kontrol	30	80	100	83.00	5.350
Post-Test Kontrol	30	80	100	88.33	6.477
Valid N (listwise)	30				

Descriptive analysis results using SPSS version 29 show that there are 2 classes, specifically the thirty-student experimental class and the thirty-student control class. The minimum and maximum values are found in the Pre-Ex data 80 and 100, Post-Ex is also 80 and 100. In Pre-Con and Post-Con, the minimum value was 80 and the maximum value was 100, which was the same in both groups. The mean score of Pre-Ex was 86.33, Post-Ex 91.67, Pre-Con 83.00, and Post-Con 88.33.

D. Normality Test

To ascertain whether the research data was normally distributed, a normality test was used.

Table 3. Normality test results with SPSS version 29

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pretest EKsperimen	.113	30	.200[*]	.956	30	.244
post test eksperiemen	.078	30	.200[*]	.978	30	.783
pretest Kontrol	.188	30	.008	.891	30	.054
posttest kontrol	.198	30	.004	.934	30	.064

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

a. Lilliefors Significance Correction

The experimental class's pre-test and post-test significance values are 0.244 and 0.783 above 0.05, respectively, while the control group significance is 0.054

and 0.064 above 0.05, showing that a normal distribution is followed by all significances. The Shapiro Wilk Sig value must be more than 0.05.

E. Paired Sample t Test

After the normality test is completed, this test is carried out. The purpose of the t-test hypothesis test is to ascertain whether a difference from sample to average.[33] Sig value (2-tailed) or p-value, If p is less than 0.05 The two conditions differ significantly from one another.

Table 4. Paired Sample t Test results with SPSS version 29

Paired Samples Test

		Paired Differences							Significance	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	One-Sided p	Two-Sided p
					Lower	Upper				
Pair 1	Pre-Test Eksperimen - Post-Test Eksperimen	-5.333	7.761	1.417	-8.231	-2.435	-3.764	29	<,001	<,001
Pair 2	Pre-Test Kontrol - Post-Test Kontrol	-5.333	6.814	1.244	-7.878	-2.789	-4.287	29	<,001	<,001

From the table above, there is an effect on Wordwall media both before and after the test, given a two-tailed significance value for the Paired Sample t Test of 0.001, which is less than 0.05.

F. Homogeneity Test

The variance homogeneity test is very important before comparing two or more groups.[34] It is used to determine whether the variance in a population is the same, as this indicates that different population variances cannot be caused by differences in the base data. Samples are considered homogeneous if over 0.05 is the significance value.

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[33] Dyan Yuliana and Okta Ayu Wulandari Putri, "Pengaruh Penggunaan Digital Storytelling Terhadap Hasil Belajar Siswa Mata Pelajaran Dasar Desain Grafis," *Jurnal Informatika Dan Teknologi Pendidikan* 1, no. 1 (2021): 36–46, https://doi.org/10.25008/jitp.v1i1.7.

[34] Rektor Sianturi, "Uji Homogenitas Sebagai Syarat Pengujian Analisis," *Jurnal Pendidikan, Sains Sosial, Dan Agama* 8, no. 1 (2022): 386–97, https://doi.org/10.53565/pssa.v8i1.507.

Table 5. Homogeneity Test Results with SPSS version 29

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Hasil Belajar Siswa	Based on Mean	2.544	1	58	.116
	Based on Median	2.428	1	58	.125
	Based on Median and with adjusted df	2.428	1	57.955	.125
	Based on trimmed mean	2.526	1	58	.117

As shown in the table above, because the results of the test demonstrate that the experimental and control classes are homogeneous, with the significance value of 0.116 for the homogeneity test being greater than 0.05.

G. Independent Sample t Test

The effect of learning materials can be assessed by using Wordwall and t-test for independent samples on student achievement, with a significance level of Sig 0.05.[35] A significant difference between the two groups is indicated if p < 0.05.

Table 6. Independent Sample t Test Results with SPSS version 29

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Hasil Belajar Siswa	Equal variances assumed	2.544	.116	1.785	58	.040	.039	3.333	1.867	-.404	7.071
	Equal variances not assumed			1.785	55.816	.040	.037	3.333	1.867	-.407	7.074

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[35] Eny Kurniawati, "Penerapan Media Pembelajaran Berbasis Permainan Monopoli Untuk Meningkatkan Prestasi Belajar PPKn," *Pedagogi : Jurnal Pendidikan Dan Pembelajaran* 1, no. 1 (2021): 1–5, https://doi.org/10.56393/pedagogi.v1i1.74.

Table 7. Group Statistic Results with SPSS version 29

Group Statistics

	Kelas	N	Mean	Std. Deviation	Std. Error Mean
Hasil Belajar Siswa	Post Test Kelas Eksperimen	30	91.67	7.915	1.445
	Post Test Kelas Kontrol	30	88.33	6.477	1.183

Sig values were calculated according to the study's findings. Learning objectives for students utilizing Wordwall and Google Form were on average better than google form (91.67 and 88.33 respectively), according to a 2-tailed difference of $0.039 < 0.05$. The results show that Wordwall can help students be more engaged in learning PAI.

H. Interview Results

Interviews with 6 students of class X.C who used the Wordwall application during PAI instruction.

1. How is your experience when using Wordwall in PAI learning?
   a. Marvel: "In my opinion, using Wordwall is very fun because learning feels like playing. I became more enthusiastic about understanding PAI material, especially when repeating lessons and learning became more effective."
   b. Titania: "My experience using Wordwall is very helpful for memorizing material. For example, the quiz feature makes me remember important terms in PAI more quickly, and it's very nice that there are animations with sound and there is time and duration and ranking so we can know."
   c. Yosi: "I feel that learning PAI is more interactive with Wordwall, so the atmosphere is exciting and not boring."
   d. Varel: "For me, Wordwall is easy to use and interesting. The animations and games in it make me less tense when learning heavy material, exciting and more understanding in learning."

e. Olin: "I really like the gamification feature in Wordwall. It feels like learning while playing a game, so the class time feels faster and less boring and interesting."

f. Sacio: "My experience is quite positive, but sometimes there are difficulties if the internet network is slow. However, overall, I feel that learning is more interesting and I am more active in the activities."

From the above statement, according to the interview, It is evident that using Wordwall to teach Islamic Religious Education is beneficial (PAI) has a beneficial impact. The students find learning to be more interesting, interactive, and fun. Features such as gamification, animation, sound, and ranking increase motivation and helps them better understand and retain the material. Although some students experienced network issues, overall, they felt more engaged and enthusiastic about the learning process. Wordwall proved to be effective in creating an engaging learning environment and can encourage increased understanding of PAI materials.

2. Does Wordwall make you more interested in learning?

a. Marvel:"Yes, I became more interested because Wordwall is like a game. So, I feel that learning is more fun and not boring like reading a book."

b. Titania: "In my opinion, yes. Wordwall makes me more interested because it looks interesting and there are challenges such as points or scores that make me want to keep trying."

c. Yosi: "Yes, because Wordwall helps me understand the lessons in a way that is not monotonous. Moreover, there are a variety of games such as quizzes that make learnig fun."

d. Varel: "Yes, I am more enthusiastic about learning because Wordwall provides a new experience compared to the usual method. So, I feel more active and focused during learning."

e. Olin: "Wordwall makes me more interested, especially because I like learning while playing. In this manner, I avoid feeling overburdened even though I'm learning difficult material."

f.   Sacio: "I think Wordwall is quite interesting, but sometimes if you use it too much, it becomes less challenging. However, I still like its interactive features."

Based on the aforementioned statements based on the interviews, it is possible to conclude that Wordwall in general stimulates students' interest in learning. Interactive features such as gamification, score challenges, and game variations such as quizzes make learning more fun and less boring. Throughout the learning process, students feel more engaged, enthusiastic, and focused. Even while some students thought that using Wordwall too much could make it less challenging, they still found the program to be a fun way to learn. As a result, Wordwall effectively raises students' motivation to learn.

3. Do you think learning using Wordwall is more fun or easier than other ways of learning?

a.   Marvel: "I think learning using Wordwall is more fun because it's like playing a game. So, I am more relaxed and not easily bored."

b.   Titania: "I find it easier to learn with Wordwall, because the material presented is more structured and can be directly practiced in quizzes. So, I understand quickly."

c.   Yosi:"Learning with Wordwall is more fun, especially if there is a competition in class. I'm more motivated to study so I can get a high score."

d.   Varel:"I think Wordwall is easier to use than other methods, especially because I can learn while practicing problems directly. But, if the internet network has problems, it's a bit annoying."

e.   Olin: "I think Wordwall is more fun because it has interesting animations and sounds. It makes learning more lively than just reading a book or listening to a teacher explain."

f.   Sacio: "I think Wordwall is both more fun and easier. With its interactive display, I can understand the material faster and feel more active compared to traditional methods."

From the above statements based on interviews, the majority of pupils believe that learning by using Wordwall is more fun and easier than traditional learning methods. Interactive features such as gamification, animation, and quizzes make the learning process more interesting and fun. In addition, Wordwall also helps students understand the material more quickly and structured. Although there are some network issues, overall, using Wordwall proves to be more effective and motivates students to learn in a more active and engaging way.

CONCLUSION

This study combines experimental and qualitative approaches, the results show that the use of Wordwall in learning Islamic Religious Education (PAI) significantly increases student engagement in the classroom, which positively impacts learning outcomes. Based on data analysis, the instruments used in this study proved to be valid and reliable, with normal and homogeneous data distribution. The findings of statistical testing employing the independent sample t-test and the paired sample t-test indicate that. Wordwall has a significant effect on student engagement on learning outcomes, with an average value of 91.67 for the experimental group using Wordwall and 88.33 for the control group using Google Form. This demonstrates that there is a notable distinction between using Wordwall and Google Form.

Interviews conducted with students, Wordwall increases students' interest in learning and makes learning more fun and interactive. Its features make students more active, motivated, and make the material easier to understand through gamification, animation, and quizzes. Students are satisfied with the use of Wordwall and feel better in the learning process. Overall, Wordwall has been proven effective in increasing student engagement in PAI learning. It can also be a more engaging learning medium compared to Google Form, with better results in improving students' understanding of PAI materials.

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