APPLICATION: Applied science in Learning Research
Vol. 4 No. 3 Feb 2025, Page. 108-112
E-ISSN: 2797-0655

Wordwall Learning Media to Increase Student Concept Understanding in Islamic Age Education Lessons at SMK NU Al-Hidayah Ngimbang

Chusnul Chotimah[1], Ainin A'isyaturrohmah[2], Suci Prihatiningtyas[3*], Asiyah Lu'lu'ul Husna[4]
[1,2]Islamic Education, Universitas KH. A. Wahab Hasbullah
[3,4] Physics Education, Universitas KH. A. Wahab Hasbullah
*Email: suciningtyas@unwaha.ac.id

ABSTRACT
This study investigates the use of Wordwall as an interactive learning medium to enhance students' conceptual understanding in Islamic Religious Education (PAI) at SMK NU Al-Hidayah Ngimbang. The research employs a quasi-experimental design with a one-group pretest-posttest approach, involving 30 eleventh-grade students. Data collection was conducted through pretest and posttest assessments to measure changes in conceptual understanding. Before using Wordwall, the average pretest score was 56.7, indicating low conceptual understanding. Following the integration of Wordwall, the average posttest score significantly increased to 86.7, with an average N-Gain of 0.66, categorized as medium. The interactive and gamified nature of Wordwall is attributed to this improvement, as it fosters student engagement and provides immediate feedback, supporting active learning. The findings highlight the potential of Wordwall to enhance learning outcomes in PAI by addressing students' diverse learning needs and improving motivation and comprehension. This study provides practical implications for educators seeking to implement innovative, technology-based learning solutions in vocational schools to improve conceptual understanding and align with the demands of 21st-century education.

***Keywords**: Islamic religious education;Conceptual understanding;Interactive learning media; Wordwall.*

INTRODUCTION
Islamic Religious Education (PAI) plays a strategic role in shaping the character and morals of students, particularly at the vocational high school (SMK) level. SMK, as an educational institution preparing students for the workforce, has unique learning needs. The characteristics of SMK students tend to be heterogeneous, both in terms of their religious educational background and level of understanding. In this context, PAI learning is expected to integrate religious values with relevant and innovative approaches to enable students to deeply understand religious concepts while linking them to technological developments in learning.

However, field observations reveal a lack of learning media that support interactivity and student engagement, resulting in students' low conceptual understanding of PAI material. Preliminary observations at SMK NU Al-Hidayah Ngimbang show that most students struggle to grasp abstract PAI materials, such as Aqidah and Fiqh. This issue contributes to low average daily test scores, often falling below the Minimum Mastery Criteria (KKM). Additionally, students tend to be passive during the learning process, which hinders optimal classroom interaction.

One of the primary causes of students' low conceptual understanding is the dominance of conventional teaching methods. Teachers often rely on lectures and discussions without utilizing interactive learning media. This approach fails to accommodate the diverse learning styles of students, leading to reduced motivation and engagement in learning. According to constructivist theory, effective learning occurs when students actively construct knowledge through meaningful learning experiences (Piaget, 1973).

Various studies have shown that technology-based learning media can enhance students' understanding of course material. One of the learning media gaining traction in education is Wordwall, a web-based interactive platform featuring various templates for educational activities such as quizzes,

puzzles, and educational games. According to Rivaningtyas et al. (2023), Wordwall provides a more interactive and engaging learning experience, which increases student participation in the learning process. Research by Kamilah et al. (2024) reported that the average posttest score in the experimental class (82.61) was higher than in the control class (68.17), demonstrating that the STAD model combined with Wordwall is more effective in improving student learning outcomes compared to conventional methods. Similarly, a study by Isnayanti & Purnamasara (2024) found that Wordwall effectively increased students' motivation in learning mathematics.

However, research on the implementation of Wordwall in PAI learning remains very limited, especially in SMK settings. A review of the literature indicates that Wordwall has successfully improved students' learning outcomes and motivation across various subjects. A study by Rachmah et al. (2024) showed significant improvements in students' conceptual understanding in science lessons through Wordwall. Unfortunately, these studies have not specifically explored the application of Wordwall in PAI lessons, particularly in SMKs with students characterized by heterogeneous levels of religious understanding. Hasanah (2021) also found that Wordwall effectively increased student engagement in learning. This gap presents both a challenge and an opportunity for this study to fill the void in previous research by providing empirical evidence on the impact of Wordwall on enhancing students' conceptual understanding in PAI subjects.

Based on these studies, this research offers a novel approach by implementing Wordwall as a learning medium to improve students' conceptual understanding in PAI subjects at SMK NU Al-Hidayah Ngimbang. This study not only supports previous research affirming the effectiveness of interactive media but also aims to fill research gaps by exploring the specific application of Wordwall in PAI learning at SMKs. The objective of this research is to analyze the impact of using Wordwall learning media on students' conceptual understanding in PAI subjects at SMK NU Al-Hidayah Ngimbang.

The findings of this study are expected to provide practical contributions for teachers in designing more interactive learning, as well as theoretical contributions to the development of technology-based learning media in religious education. Additionally, this research can serve as a reference for developing learning methods that meet the needs of students in the digital era, while also supporting the national education goals of fostering students who are of good character, morally upright, and possess a deep understanding of religion.

METHOD

Research Type

This study is a quantitative research with a quasi-experimental design.

Research Design

The research design used is a one-group pretest-posttest design, where the measurement of students' conceptual understanding is conducted before and after the use of Wordwall as a learning media.

Research Approach

The approach used is a quantitative approach with descriptive and inferential statistical analysis to measure the improvement in students' conceptual understanding.

Research Subjects

The subjects of this study are 30 eleventh-grade students at SMK NU Al-Hidayah Ngimbang who are enrolled in the Islamic Religious Education (PAI) class.

Implementation Procedure

The study is carried out in three stages:

1. Pretest**:** Before using the Wordwall media, students are given an initial test to measure their conceptual understanding related to the PAI material.
2. Learning with Wordwall Media**:** Students engage in learning using Wordwall, which is designed to support their conceptual understanding of the PAI material.
3. Posttest: After the learning process, students are given a posttest to measure the improvement in their conceptual understanding.

Tools, Materials, and Instruments

1. Tool**s**: Projector, laptop, and internet access to run the Wordwall application.
2. Materials: Islamic Religious Education (PAI) teaching materials relevant to the topics being taught.
3. Instruments: Concept understanding test in the form of multiple-choice questions consisting of 20 items, prepared based on the PAI material outlines.

Data Collection Techniques
Tests**:** Pretest and posttest to measure the change in students' conceptual understanding.

RESULT AND DISCUSSION

Result

This study aims to determine the effect of using Wordwall learning media on improving students' conceptual understanding in Islamic Religious Education (PAI) at SMK NU Al-Hidayah Ngimbang. Based on the data analysis conducted through pretest and posttest, the following results were obtained:

Before using Wordwall media, the average pretest score of students indicated a low conceptual understanding of PAI, with an average score of 56.7 out of 100. After learning with Wordwall media, the average posttest score of students increased to 86.7, indicating a significant improvement in conceptual understanding.

Table 1. Pretest, Posttest Scores, and N-Gain

No.	Name	Pretest	Posttest	N-Gain	Category
1	Respondent 1	43	96	0.93	High
2	Respondent 2	60	77	0.43	Medium
3	Respondent 3	33	76	0.64	Medium
4	Respondent 4	68	81	0.41	Low
5	Respondent 5	72	79	0.25	Low
6	Respondent 6	68	72	0.13	Low
7	Respondent 7	64	88	0.67	Medium
8	Respondent 8	64	81	0.47	Medium
9	Respondent 9	31	92	0.88	High
10	Respondent 10	68	87	0.59	Medium
11	Respondent 11	55	80	0.56	Medium
12	Respondent 12	47	68	0.4	Medium
13	Respondent 13	22	84	0.79	High
14	Respondent 14	61	80	0.49	Medium
15	Respondent 15	60	86	0.65	Medium
16	Respondent 16	81	100	1	High
17	Respondent 17	86	100	1	High
18	Respondent 18	45	88	0.78	High
19	Respondent 19	69	84	0.48	Medium
20	Respondent 20	29	88	0.83	High
21	Respondent 21	72	88	0.57	Medium
22	Respondent 22	85	96	0.73	High
23	Respondent 23	43	88	0.79	High
24	Respondent 24	87	88	0.08	Low
25	Respondent 25	55	88	0.73	High
26	Respondent 26	47	96	0.92	High
27	Respondent 27	22	100	1	High
28	Respondent 28	61	100	1	High
29	Respondent 29	55	100	1	High
30	Respondent 30	47	80	0.62	Medium
	Average Pretest Score: 56.7				
	Average Posttest Score: 86.7				
	Average N-Gain: 0.66				

Before conducting parametric testing, which is hypothesis testing in statistics relying on a normal distribution, the first step taken is to perform assumptions testing, namely normality testing. The purpose of normality testing is to ascertain whether the data distribution follows a normal pattern or not. The method used for these prerequisite tests is:

Discussion

This study demonstrates a significant improvement in students' conceptual understanding of Pendidikan Agama Islam (PAI) facilitated by the use of Wordwall as a learning medium. The discussion is divided into two parts: pretest and posttest results and the N-Gain analysis.Based on pretest and posttest data, the students' average pretest score was 56.7, indicating a low level of conceptual understanding

prior to using Wordwall. After learning with Wordwall, the average posttest score increased to 86.7, with an average N-Gain of 0.66, categorized as "medium."

1. Pretest and Posttest Analysis

   Before the implementation of Wordwall, the students' average pretest score was 56.7, reflecting a low level of conceptual understanding. This aligns with previous findings that traditional methods often fail to optimally engage students or meet their learning preferences (Widiami et al., 2024). Following the introduction of Wordwall, the average posttest score significantly increased to 86.7, indicating substantial improvement in conceptual understanding. This result supports the effectiveness of interactive and gamified learning tools in enhancing student comprehension (Rosyid & Alwi, 2024).

   The improvement in posttest scores is attributed to the engaging and interactive nature of Wordwall, which helps maintain students' attention and reinforces learning through repetition and immediate feedback. These features align with constructivist learning theory, emphasizing active student involvement in the learning process to build knowledge (Masgumelar & Mustafa, 2021).

   The increased average score from pretest to posttest demonstrates Wordwall's effectiveness in helping students better understand PAI concepts. This is consistent with previous research showing that interactive learning media, such as Wordwall, can enhance learning motivation and deepen students' understanding of the material (Kusnadi & Azzahra, 2024). With its gamified features, Wordwall enables students to learn actively and enjoyably, thereby improving retention and engagement with the material.

2. N-Gain Analysis

   The N-Gain analysis further reveals the effectiveness of Wordwall in improving students' understanding of PAI. The average N-Gain score was 0.66, categorized as "medium." A more detailed analysis shows that:

   - High N-Gain (≥0.7) was achieved by 43% of respondents, indicating strong improvement in understanding.
   - Medium N-Gain (0.3–0.7) was observed in 43% of respondents, reflecting moderate improvement.
   - Low N-Gain (<0.3) was found in 14% of respondents, suggesting minimal progress.

   Students who achieved high N-Gain scores were likely more motivated or better able to adapt to Wordwall's interactive format. Conversely, students with low N-Gain scores may require additional support or a longer adaptation period to fully benefit from the gamified approach.

   These findings align with Vygotsky's (1978) social learning theory, which suggests that active interaction with learning media and immediate feedback can enhance students' zone of proximal development (ZPD). With tools like Wordwall, students can learn through exploration and interactive games tailored to their needs (Akbar & Hadi, 2023).

   This study demonstrates a significant improvement in students' conceptual understanding of Pendidikan Agama Islam (PAI) facilitated by the use of Wordwall as a learning medium. The discussion is divided into two parts: pretest and posttest results and the N-Gain analysis. Based on pretest and posttest data, the students' average pretest score was 56.7, indicating a low level of conceptual understanding prior to using Wordwall. After learning with Wordwall, the average posttest score increased to 86.7, with an average N-Gain of 0.66, categorized as "medium."

CONCLUSIONS

Research findings indicate that this learning media not only enhances students' active engagement in the learning process but also significantly improves their conceptual understanding. This is reflected in the increased student learning outcomes measured through formative tests and the positive feedback from both teachers and students regarding the use of this media.

Development Prospects. Looking ahead, this learning media has the potential to be further developed by expanding the scope of the material, integrating features that support student collaboration, and incorporating gamification elements to enhance learning motivation. Additionally, its implementation can be further evaluated at other educational levels or in different subjects to assess its flexibility and effectiveness.

Limitations and Future Research Opportunities. This study is limited in scope, as it was conducted in only one vocational school, making the results less generalizable. Furthermore, students' access to technology and digital skills significantly influence the effectiveness of implementing this

media. Future research could focus on testing this media in schools with different characteristics or on developing Wordwall-based learning media that supports adaptive learning and personalized instruction for students of varying ability levels.

Thus, this research not only contributes to the development of interactive learning media but also opens up new opportunities for educational innovation in the digital era.

REFERENCES

Akbar, H. F., & Hadi, M. S. (2023). Pengaruh penggunaan media pembelajaran wordwall terhadap minat dan hasil belajar siswa. *Community Development Journal: Jurnal Pengabdian Masyarakat*, 4(2), 1653-1660.

Isnayanti, A. N., & Purnamasara, D. I. (2024). Meningkatkan motivasi belajar matematika melalui media interaktif kuis wordwall dan benda konkret siswa kelas iv sd model terpadu madani. *Jurnal Dikdas*, 20(1).

Kamilah, C. S., Hermawan, Y., & Srigustini, A. (2024). Pengaruh model cooperative learning menggunakan teknik student teams achievment division (stad) dengan media interaktif wordwall terhadap hasil belajar siswa. *Jurnal Ilmiah Kajian Multidisipliner*, 8(7).

Kusnadi, E., & Azzahra, S. A. (2024). Penggunaan media pembelajaran interaktif berbasis Wordwall dalam meningkatkan motivasi belajar peserta didik pada mata pelajaran PPKn di MA Al Ikhlash Padakembang Tasikmalaya. *Jurnal Dimensi Pendidikan dan Pembelajaran*, 12(2), 323-339.

Masgumelar, N. K., & Mustafa, P. S. (2021). Teori belajar konstruktivisme dan implikasinya dalam pendidikan dan pembelajaran. *Ghaitsa: Islamic Education Journal*, 2(1), 49-57.

Piaget, J. (1973). *To Understand is To Invent*. New York: Grossman.

Rachmah, M. N., Firdaus, M. N. A., & Aini, N. (2024). Peningkatan hasil belajar siswa melalui wordwall pada materi pecahan campuran. *Nusantara Educational Review*, 2(2), 65-70.

Rivaningtyas, D. W., Maruti, E. S., & Prihantanti, I. (2023). Penerapan model problem base learning untuk meningkatkan hasil belajar ipa berbantuan wordwall siswa kelas v sdn 1 japan kabupaten ponorogo. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 8(2), 4368-4378.

Rosyid, F., & Alwi, N. A. (2024). Evalusai efektivitas penggunaan media pembelajaran dengan wordwall dalam keterlibatan dan pemahaman siswa. *Jurnal Cerdas Proklamator*, 12(2), 177-183.

Widiami, R., Arni, Y., Azzahra, N., & Feby, H. M. (2024). Efektivitas penggunaan media game digital wordwall dalam pembelajaran ipas sub tema: kekayaan hayati flora dan fauna kelas 5 di sdn 89 palembang. *Jurnal Pendidikan dan Pembelajaran Indonesia (JPPI)*, 4(4), 1703-1711.