APPLICATION OF WORDWALL WEB MEDIA TO IMPROVE ISLAMIC RELIGIOUS EDUCATION LEARNING OUTCOMES

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ARTICLE INFO	ABSTRACT
Volume: 3 **KEYWORD** Wordwall interactive media, Islamic Education, student engagement, learning outcomes, primary education.	This study investigates the effectiveness of Wordwall, an interactive digital media platform, in enhancing students' learning outcomes in Islamic Education (Pendidikan Agama Islam, PAI) at SD Inpres Petobo, Palu City, during the 2022/2023 academic year. Utilizing a qualitative approach and Classroom Action Research (CAR), the research involved 15 fifth-grade students over two cycles of implementation. Data were collected through observations, tests, and questionnaires to measure student motivation and engagement. Findings reveal that the integration of Wordwall significantly improves students' comprehension of key topics such as infaq (charitable giving) and sedekah (almsgiving), with a notable increase in student engagement and achievement exceeding the Minimum Competency Criteria (KKM). This supports Mayer's cognitive theory of multimedia learning, which emphasizes the importance of combining visual and textual elements to facilitate deeper understanding. The study highlights the necessity for educators to adapt their teaching methods by incorporating technology to create engaging learning environments. However, limitations include the study's focus on a single location and a small sample size, suggesting the need for further research across diverse educational contexts to validate and extend these findings.

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1. Introduction

Education is a conscious effort aimed at fostering progress (Berkovich-Ohana, Jennings, and Lavy 2019). It enables individuals to transition from inability to ability, unfamiliarity to familiarity, and lack of discipline to disciplined behavior (Beldad, De Jong, and Steehouder 2010). Although education offers solutions to a wide range of issues, it is not without its own set of challenges, which arise at various stages such as planning, learning processes, and evaluation (Zafirah et al. 2023). Education is deliberately and systematically structured to create an atmosphere that allows students to develop their spiritual, intellectual, and moral potential to benefit themselves, their society, and the nation (Nasucha and Khozin 2023).

Historically, education has evolved through four significant phases in terms of how lessons are delivered (Betts et al. 2021). Initially, education took place within the family unit, but as society developed, schools became formal institutions of learning (Arum 2000). The introduction of written language, the invention of printing technology, and the eventual integration of modern technologies like electronic devices and media transformed the educational process (Warschauer 2007). These developments have been essential in advancing the quality of learning (Campbell and Carayannis 2012).

Today, Indonesia is a society shaped by technological advancement (Malihah 2015). The integration of technology into education is necessary to realize the goals outlined in the nation's constitution, particularly in enhancing the intelligence of its citizens (Pedro et al. 2019). Despite technological progress, traditional or conventional methods of teaching, which rely heavily on static visual aids like blackboards and diagrams, persist in classrooms (Almufarreh, Arshad, and Mohammed 2021). These methods, although functional, are limited in terms of engaging students in an interactive and dynamic learning environment (Li and Xue 2023).

Recent developments in education emphasize the use of modern media to optimize the learning process, making it more engaging and effective (Haleem et al. 2022). The conventional use of visual aids has expanded to include sophisticated tools such as projectors, overhead projectors (OHP), and other electronic resources like multimedia presentations and interactive learning platforms (Nicolaou, Matsiola, and Kalliris 2019). This technological shift reflects the evolving mindset of educators who are increasingly seeking to improve teaching quality (Jansen and van der Merwe 2015).

Despite the potential of modern educational media to enhance learning experiences, there remains a significant gap in how effectively these tools are utilized, particularly in primary education in Indonesia (Intiana et al. 2024). While several studies have demonstrated the advantages of using multimedia tools like projectors and interactive presentations in fostering student engagement and improving learning outcomes (Parsons and Taylor 2011), less attention has been paid to the use of more interactive, game-based learning tools like Wordwall, especially in religious and moral education subjects such as Pendidikan Agama Islam (PAI) and Budi Pekerti. Most previous studies have focused on general subjects such as science and mathematics, where digital media is already more widely accepted (Aliyah et al. 2024).

The case study of SD Inpres Petobo illustrates this gap in practice. Although teachers employ traditional methods such as lectures, discussions, and assignments, the engagement levels among students remain low, and learning outcomes, as seen in their assessment scores, do not meet expectations. Observations and interviews with both teachers and students reveal that conventional methods are insufficient in capturing student attention, resulting in disengagement and poor academic performance.

This research addresses the gap by investigating the effectiveness of Wordwall, a more interactive and game-based digital media, in improving student engagement and learning outcomes in the subject of Pendidikan Agama Islam (PAI) and Budi Pekerti. Unlike conventional media, Wordwall enables active participation through interactive exercises, quizzes, and games, which can foster a more engaging and enjoyable learning experience (Wanodya 2023). This study will provide valuable insights into how modern, interactive media can be adapted to religious education, an area often considered more resistant to technological integration. By focusing on a specific educational context, this research aims to contribute to the broader discourse on the use of educational technology in primary schools 5 Inpres Petobo, Palu City in Indonesia.

2. Literature Review

Research has shown that integrating technology in education can enhance students' motivation and learning outcomes. Mayer (2009) argues that using both visual and audio media simultaneously can engage students more deeply in the learning process. In Indonesia, Hidayat (2018) found that projectors and multimedia are effective in improving learning outcomes in science and mathematics, though the use of technology in subjects like religious education, such as Islamic Religious Education (PAI), remains limited.

Wordwall, an interactive digital platform, offers the potential to boost student engagement through game-based learning. According to Sari et al. (2020), gamification can increase student participation and reduce classroom boredom. However, research on the use of Wordwall in PAI is still very limited, especially when compared to subjects like languages and mathematics, as highlighted by Utami (2022).

Interactivity is one of the key factors in improving learning outcomes. Schunk (2012) emphasizes that students who are actively engaged in the learning process tend to have greater confidence and achieve better academic results. Wulandari (2021) also found that interactive digital quizzes can improve student comprehension in challenging subjects like mathematics, and this approach could also be applied to PAI.

However, the implementation of educational technology in Indonesia still faces several challenges. Herlina (2019) points out obstacles such as inadequate technological infrastructure in schools, low technological literacy among teachers, and resistance to shifting from conventional teaching methods. At SD Inpres Petobo, traditional methods like lectures and discussions still dominate, even though there is great potential to use modern media like Wordwall.

Based on the existing literature, it is clear that while modern and interactive learning media have proven effective, research on their use in religious subjects remains limited. Therefore, this study aims to fill this gap by examining the effectiveness of Wordwall in enhancing student engagement and learning outcomes in the subjects of PAI and Budi Pekerti at SD Inpres Petobo.

3. Methodology

3.1 Research Type

This study uses a qualitative approach with Classroom Action Research (CAR). CAR is a reflective method where specific actions are taken to improve or enhance teaching practices in a professional manner. The CAR model employed in this research is the Suharsimi Arikunto model.

3.2 Research Variables
Research variables consist of independent (free) and dependent (bound) variables. The independent variable influences the dependent variable, while the dependent variable varies based on changes in the independent variable (Kerlinger, 1992; Sugiyono, 2017).

3.3 Population and Sample
This classroom action research was conducted at SD Inpres Petobo, Palu, Central Sulawesi, in the 2022/2023 school year. The subjects were 15 fifth-grade students, with a sample of 10 students. The research involves two cycles aimed at improving student motivation and learning outcomes in Islamic Education (PAI) using Wordwall as a media tool.

3.4 Data Collection Types, Sources, and Techniques
The research is qualitative-descriptive, involving two cycles of classroom action research with two sessions per cycle. The following are the phases in each research cycle:

1. Pre-Cycle: Traditional teaching methods without Wordwall are used, followed by a knowledge evaluation.
2. Cycle I: Implementation of Wordwall-based media.
3. Cycle II: Revised and improved implementation based on reflections from Cycle I.

Data collection involves observation, testing, and questionnaires to gauge student motivation and learning outcomes.

3.5 Data Analysis and Hypothesis Testing
1. Observation: Student behavior (preparation, participation, perseverance) and teacher behavior (timeliness, lesson delivery) are observed and scored on a scale from 1 (poor) to 5 (excellent).
2. Tests: Post-test results from each session are analyzed, and student completion rates are calculated.
3. Questionnaires: Likert-scale questions measure student motivation towards using Wordwall, with answers ranging from 1 (strongly disagree) to 4 (strongly agree). The data are then analyzed using percentage calculations.

3.6 Validity Testing
Two methods are used to test the validity of the data:
1. Source Triangulation: Data from different sources are compared for consistency.
2. Member Check: Data are verified by the participants to ensure accuracy.

4. Results and Discussion

This study reveals that the use of wordwall-based media is significantly effective in improving students' learning outcomes in Islamic Education, particularly on the topics of infaq (charitable giving) and sedekah (almsgiving). These findings support various previous studies that emphasize the importance of technology integration in the learning process to enhance student motivation and engagement (Mayer, 2001; Clark, Mayer, & Morelock, 2009).

The increase in student engagement observed in Cycle 1 provides a positive picture regarding the use of interactive media. Rahmawati (2018) highlights that the use of interactive technology can create a more engaging learning environment, encouraging students to participate actively. This indicates that students who are actively involved in learning tend to have a better understanding and can recall information more effectively, consistent with research showing a positive relationship between student engagement and academic achievement (Mayer, 2001). Thus, wordwall-based media functions not only as a visual aid but also as a stimulus that invigorates the classroom atmosphere.

In Cycle 2, students' achievements exceeding the KKM (Minimum Competency Criteria) indicate that wordwall-based media has significantly contributed to their understanding of the material. Research by Supriyadi (2020) emphasizes that technology-based learning media can improve learning outcomes and help students better understand complex concepts. This shows that not only is the application of technology important, but also the way teachers guide students in using the media effectively. Proper media integration can accelerate the understanding process and facilitate students in building deeper knowledge.

These findings also support Mayer's (2001) cognitive theory of multimedia learning, which posits that learners construct mental models by integrating information from various sources. Wordwall-based media, which provides a combination of visual and textual elements, assists students in comprehending the concepts of infaq and sedekah more comprehensively. With a variety of engaging visual elements, students can more easily connect new information with their existing knowledge, thereby strengthening their mental constructs about the subject matter.

Furthermore, this research indicates that teaching practices need further development by leveraging technology-based media. The results underscore that teachers must adapt to technological advancements and integrate them into their teaching methods (Sari & Akbar, 2021). This aligns with Hamidah's (2019) research, which states that innovation in teaching is key to enhancing overall educational quality. In this context, teachers need to be provided with training and support to use technology effectively, allowing them to create more engaging and productive learning experiences for students.

However, despite the promising results of this research, there are several limitations that should be noted. This study was conducted in a single location, which may limit the generalizability of the findings. The relatively small sample size could also affect the statistical power of the results. Therefore, further research is recommended to encompass more schools and utilize a more diverse sample (Mulyani, 2022). Future studies could also explore the use of other technology-based media in different learning contexts to evaluate their effectiveness. By involving various elements in research design, it is hoped that a

more comprehensive understanding of the role of technology in improving student learning outcomes across various educational levels can be achieved.

5. Conclusion

This study demonstrates the significant effectiveness of wordwall-based media in enhancing students' learning outcomes in Islamic Education, particularly regarding infaq and sedekah. The results indicate that the integration of interactive technology fosters increased student engagement, which in turn leads to better comprehension and retention of material. The improvement in student achievements beyond the Minimum Competency Criteria (KKM) further illustrates the positive impact of technology-based learning media.

Moreover, the findings align with Mayer's cognitive theory of multimedia learning, reinforcing the idea that diverse visual and textual elements can facilitate deeper understanding and help students construct meaningful mental models. This underscores the necessity for educators to adapt their teaching practices by incorporating technology effectively to create more engaging and productive learning environments.

However, this research also acknowledges certain limitations, such as the study's single-location focus and a relatively small sample size, which may restrict the applicability of the findings. Future research should aim to include a broader range of schools and diverse student populations to validate and expand upon these results. By exploring the effectiveness of various technology-based media in different educational contexts, a more comprehensive understanding of how technology can improve learning outcomes across educational levels can be attained.

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