

Transformation of Islamic Cultural History Learning through Wordwall Media: Interactive Solutions to Improve Student Motivation and Learning Outcomes in the Digital Era

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Abstract

This study focuses on the development and validation of Wordwall as an innovative digital learning medium for enhancing student engagement and achievement in Islamic Cultural History, specifically the topic of Khulafaur Rasyidin. Using the Research and Development (R&D) method and the ADDIE model (Analysis, Design, Development, Implementation, Evaluation), this research involved 28 fifth and sixth-grade students at MI Tarbiyyatul Arifin, Malang. Validators included subject matter experts, media specialists, and Islamic Studies educators. Data collection was conducted through interviews, validation sheets, and pretest-posttest assessments. The results indicate that Wordwall achieved an average validation score of 94%, categorized as "very feasible." Statistical analysis of pretest and post-test scores showed a significant improvement in student performance, with a paired t-test confirming the media's effectiveness. Students' responses indicated high satisfaction with Wordwall's interactive features, demonstrating its practicality and attractiveness as a learning tool. This study emphasizes the potential of digital learning innovations like Wordwall to modernize educational practices and address challenges in delivering complex content to digital-native learners.

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INTRODUCTION

In the era of increasingly rapid technological development, the world of education faces the challenge of integrating technology into learning to meet the needs of the digital generation (Haleem et al., 2022; Alenezi et al., 2023; Mukul & Büyüközkan, 2023). One area that is still a big challenge is historical narrative-based learning, such as Islamic Cultural History (Breien & Wasson, 2021; Musarat et al., 2023; Kaiser, 2023). Students often consider this material abstract, requiring an innovative approach to build a more profound understanding (Bouchée et al., 2022; Holmes & Tuomi, 2022; AlGerafi et al., 2023). Digital-based learning media, such as Wordwall (Kucher, 2021; Zolkipli et al., 2023; Kleftodimos, 2024), offer relevant solutions to overcome these challenges (Toquero, 2020; El-Sayes et al., 2021; Barsha & Munshi, 2023). As an interactive platform, Wordwall allows students to actively engage through gamification and visualization (Zakopoulos et al., 2023; Samaniego et al., 2024; Kleftodimos, 2024). This makes learning more engaging and improves learning outcomes (Dhar et al., 2021; Haleem et al., 2022; Salas-Pilco et al., 2022). According to Vygotsky's theory of constructivism (Lockey et al., 2021; Savva et al., 2022; Nithideechaiwarachok & Chano, 2024), students learn more effectively when they are directly involved in the experiential learning process (Asad et al., 2021; Varman et al., 2021; Marougkas et al., 2023). Therefore, developing Wordwall-based learning media with a Research and Development (R&D) approach is a strategic step to advance technology-based learning, especially in the context of Islamic Cultural History.

However, learning Islamic Cultural History still faces obstacles, especially in delivering material about the Khulafaur Rashidin's example to students (Belando-Montoro et al., 2022; Iskandar et al., 2022; Hariani & Hanafiah, 2024). This material requires understanding historical narratives and an appreciation of their moral values (Holden et al., 2021; Li et al., 2022; Bliuc & Chidley, 2022). Students often struggle to understand this material due to the lack of learning aids that are interactive and relevant to their needs (Haleem et al., 2022; Almusaed et al., 2023; Osorio et al., 2024). In many cases, teachers only use lecture methods or static media such as textbooks, which are less appealing to students of the digital generation. This problem is reinforced by a study from Wu & Yu (2024), which shows that traditional learning methods have limitations in attracting students' interest and improving their learning outcomes.

Therefore, there is an urgent need to develop more adaptive and interactive learning media to increase student involvement in learning history material. Several previous studies have explored the use of digital media in learning. Zhang & Yu. (2022) found that gamification-based learning technology can increase student motivation and learning outcomes. Moorhouse et al. (2023) stated that interactive tools such as Wordwall can facilitate students' understanding of complex material through visualizations and game elements.

Meanwhile, a study by Kleftodimos. (2024) highlights that technology-based learning provides a more contextual and meaningful learning experience. However, most of this research focuses on general technological aspects and has yet to specifically explore the use of Wordwall in the context of learning Islamic history. This research's gap lies in developing and evaluating Wordwall learning media designed explicitly for Khulafaur Rasyidin material in the History of Islamic Culture.

The novelty of this research lies in integrating constructivism-based learning theory with an R&D approach to produce Wordwall learning media that is not only interactive but also contextual and relevant to Islamic values. This media uses the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model, which makes product development systematic and flexible. Unlike previous research focusing on learning media development, this research presents innovation by combining gamification and historical narratives, providing students with a more holistic learning experience.

The primary purpose of this study is to develop and evaluate the effectiveness of Wordwall learning media in increasing student motivation and learning outcomes on Khulafaur Rasyidin material in Islamic cultural history. This research is expected to make a theoretical contribution to technology-based learning literature and provide practical solutions for teachers and educational institutions in implementing technology-based learning in the digital era. The urgency of this research lies in the need to provide more adaptive and effective learning media to overcome the challenges of delivering complex historical materials to students.

RESEARCH METHOD

This research uses the Research and Development (R&D) method to develop and validate innovative and applicable Wordwall learning media. The R&D approach was chosen because it allows for a systematic and applicative product development process, as opposed to other methods, such as experimentation or descriptive methods, that focus on testing or depicting phenomena. The research model used is ADDIE (Analysis, Design, Development, Implementation, Evaluation), which is considered appropriate because it is systematic and flexible in producing learning products (Boiko, 2022; Brack & Amalu, 2021; Moore et al., 2021). The research stage begins with a needs analysis, which aims to understand the problems and needs of students and teachers; to design interactive web-based learning media, development to produce a prototype of the Wordwall; implementation to test media on students; and evaluation to assess the effectiveness of learning media and revise the product based on feedback.

This research was conducted at MI Tarbiyyatul Arifin, Malang Regency. This location was chosen because students in grades V and VI are the target users of the learning media developed. The respondents to the study involved 28 phase C students (grades V and VI), three experts as validators, and one teacher of Islamic Cultural History. The validators in this study consisted of Learning Media Experts, PAI Material Experts, and Learning Experts, each of whom used code to maintain privacy, as presented in the following table:

Table 1. Names of Expert Validators

No	Validator Code	Position	Validator
1	V01	Dosen UIN Malang	Learning Media Specialist
2	V02	Dosen UIN Malang	PAI Material Expert
3	V03	Teacher of Islamic Cultural History	Learning Specialist

The instruments used include interviews to explore learning needs, questionnaires to assess the attractiveness of the media, and validation sheets from validators to assess the quality of the media. Observations were made during implementation to understand students' responses to using Wordwall. In contrast, pretest and post-test were used to measure the effectiveness of the media in improving student learning outcomes. The data collection technique uses purposive sampling to ensure that the participants are aligned with the research objectives, namely, students studying the Khulafaur Rasyidin material.

The data analysis technique uses descriptive statistics to calculate the average score and validation percentage. Pretest and post-test data were analyzed with paired t-tests to measure the significance of improving student learning outcomes. Data triangulation was carried out to ensure the validity of the findings by comparing results from various sources, such as interviews, observations, and field trials. The results of this analysis are used to revise and refine the learning media, ensuring that the Wordwall media is theoretically feasible and effective in the context of learning. These analytical techniques and processes support research success in producing innovative and relevant learning products.

RESULT AND DISCUSSION

This research was applied to MI Tarbiyyatul Arifin Malang with a sample of phase C students in grades V and VI. This Wordwall website-based learning media can be accessed through a laptop or a device with an internet connection. The material developed is Khulafaur Rashidin in learning Islamic Cultural History, including the example of Abu Bakr As Siddiq, Umar bin Khattab, Usman bin Affan, and Ali bin Abi Talib. This media is designed as an innovation to help students understand the story of Khulafaur Rasyidin's example, which is easier to understand with tools such as images, videos, or audio.

Result

Wordwall Learning Media Validation

The validation stage is carried out to ensure that the Wordwall learning media developed meets the eligibility criteria in terms of material and media. The instrument for validating the material consists of twenty-one statements. Quantitative data in the form of a validation sheet assessment scale carried out by vandals, material experts, and instruments to validate the media consists of six aspects. Media expert validators carry out quantitative data through a validation sheet assessment scale. In contrast, the instrument for validating learning experts on teachers of Islamic cultural history consists of five aspects.

This word wall learning media is feasible if the score is in per cent, the achievement level is at least feasible, and the minimum score is 60-80%. Calculate the average percentage of the feasibility of word wall learning media from the validation assessment of media experts, material experts, and learning experts. The average results of the percentage of assessments obtained are presented in Table 2.

Table 2. Results of Obtaining Values from Expert Validators

No	Assessment Components	Validity Rate (%)	Criterion
1	Media Expert Validator Assessment Results	93.0	Highly Valid
2	Results of the Assessment of Material Expert Validators	91.4	Highly Valid
3	Learning Expert Validator Assessment Results	97.6	Highly Valid
Total Mean		94.0	Highly Worthy

Based on the table above, the results of assessment validation from media expert validators obtained a validity level of 93% with very valid criteria. In comparison, the results of assessment validation from material validators obtained a validity level of 91.4% with valid criteria. The results of assessment validation from learning expert validators obtained a validity level of 97.6% with very valid criteria. From the three validations of the assessment of media validators, the material and learning based on the research results, and the feasibility quality, an average of 94% of the feasibility level was very feasible. So, with the validity assessment data, Wordwall learning media in learning Islamic Cultural History to increase student motivation and learning outcomes is worthy of being tested in the field.

The following image shows the main interface of the developed Wordwall learning media. This interface is attractively designed with relevant visual elements to increase students' interest in studying Islamic cultural history material, especially the Khulafaur Rasyidin period, where the display of the learning media's packaging can be found in Figure 1.

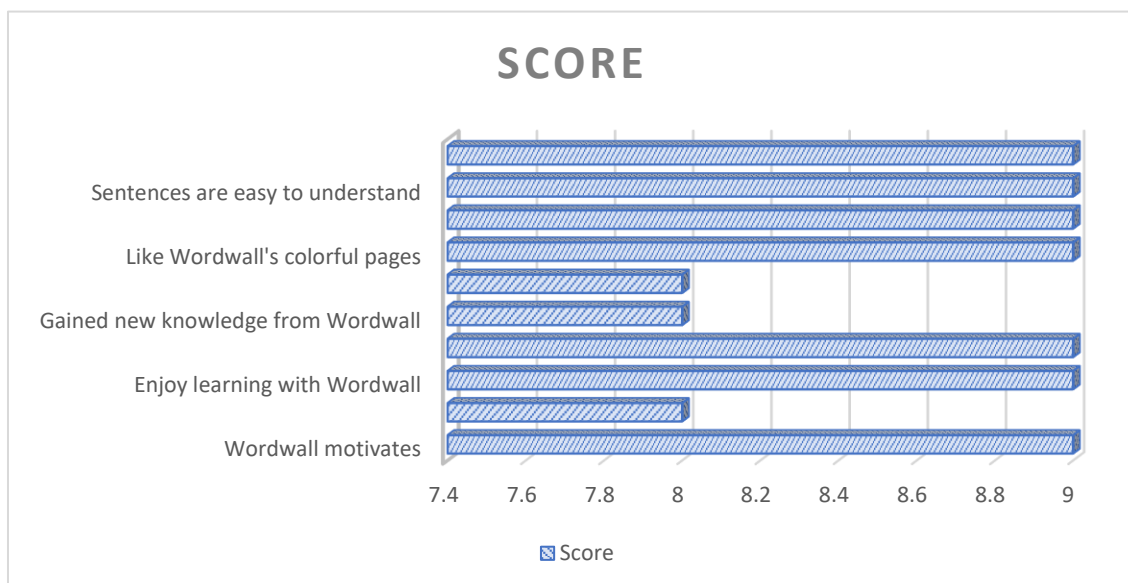


Figure 1. Digital Versatile Disk

Based on the validation data and media design above, Wordwall learning media can be implemented in learning Islamic Cultural History to increase student motivation and learning outcomes.

Data on Student Responses to the Attractiveness of Wordwall Learning Media

Students' responses to the attractiveness of Wordwall media were obtained through questionnaires filled out after students used the media in learning. Questionnaires measure aspects such as ease of use, visual design, and content appeal. The results of the Wordwall learning media questionnaire in learning Islamic Cultural History to increase student motivation and learning outcomes can be known through questionnaires to measure the practicality of Wordwall learning media. The results of the questionnaire can be seen in Graph 1.



Graph 1. Data on Student Responses to the Attractiveness

The calculation results and the score obtained from the student response questionnaire to determine the effectiveness of the Wordwall learning media for the Islamic Cultural History subject can be found on the student questionnaire sheet. Student questionnaires were given to determine the participants' interest in Wordwall learning media. The score obtained from the questionnaire sheet is then converted into a percentage to find the level of practicality of the word wall media. Guidelines for student practicality sheets can be seen in the table in this development research. Through the results of the practicality sheet, students obtained a score of 87 with a percentage of 96.6%; it can be concluded that the Islamic Cultural History learning word wall media, with the percentage of completeness and the percentage of student responses in the criteria, is excellent.

Data on Pretest and Post-test Results Wordwall Learning Media

The test score data relates to the data obtained by pretest and post-test students, which aims to determine students' learning outcomes in Wordwall media. Pretests and post-tests are carried out on students after obtaining valid validation results from validators of media experts, material experts, and learning experts. The learning outcome test was conducted on 28 phase C students of classes V and VI at MI Tarbiyyatul Arifin, Malang Regency, on October 31, 2024, and November 06, 2024.

Table 3. Pretest and Post-Test Results of Control Class

No	Participant Code	Pretest	Post-test	N-Gain	Category
1	P01	20	45	0.3	Keep
2	P02	30	50	0.3	Keep
3	P03	15	40	0.3	Keep
4	P04	25	35	0.1	Low
5	P05	20	55	0.4	Keep
6	P06	20	60	0.5	Keep
7	P07	30	40	0.1	Low
8	P08	20	60	0.5	Keep
9	P09	25	50	0.3	Keep
10	P10	15	35	0.2	Low
11	P11	10	60	0.6	Keep
12	P12	15	45	0.4	Keep
13	P13	20	40	0.3	Keep
14	P14	20	50	0.4	Keep
15	P15	15	50	0.4	Keep
16	P16	20	45	0.3	Keep
17	P17	25	40	0.2	Low
18	P18	20	45	0.3	Keep
19	P19	40	65	0.4	Keep

The learning outcomes of students in Islamic Cultural History using Wordwall learning media were measured through pretest and 126 post-tests. The pretest is done before using Wordwall media, while the post-test is done after. The learning outcomes of students in the Wordwall learning media of the Islamic Cultural History subject can be seen by giving learning outcome tests to students in the form of a pretest and a post-test; the pretest is carried out before implementing Islamic Cultural History learning. The post-test was carried out after the Islamic Cultural History learning activity; the results of the learning outcome test in the control class without using Wordwall learning media can be found in Table 3.

Table 3 displays the results of the pretest and post-test of students who have been analyzed using the Normality Gain Test to describe the increase in learning outcome scores before and after the treatment. Based on the calculation of N-Gain, the results show that the learning outcomes of class V students of MI Tarbiyatul Arifin, Malang Regency, in the subject of Islamic Cultural History, which is used as a control class, are in the low and medium categories because they do not use Wordwall learning media.

Meanwhile, the results of pre- and post-tests in the experimental class were used to determine the difference in student learning outcomes before and after being given treatment. The learning outcomes of students in Islamic Cultural History using Wordwall learning media were measured through a pretest and a post-test. The pretest is done before using Wordwall media, while the post-test is done after. The results of the control class test can be seen in Table 4.

Table 4. Pretest and Post-Test Results of Control Class

No	Participant Code	Pretest	Post-test	N-Gain	Category
1	P01	30	70	0.6	Keep
2	P02	40	90	0.8	Tall
3	P03	20	70	0.6	Keep
4	P04	35	100	1.0	Tall
5	P05	25	100	1.0	Tall
6	P06	50	100	1.0	Tall
7	P07	25	90	0.9	Tall
8	P08	45	100	1.0	Tall
9	P09	25	100	1.0	Tingg

Table 3 shows the results of the pretest and post-test of the students who have gone through the calculation of the normality gain test to describe the increase in learning scores before and after the treatment. Based on the calculation of N-Gain, the results are shown in Table 4.12, which shows that the improvement of the learning outcomes of grade VI students at MI Tarbiyatul Arifin, Malang Regency, in the subject of Islamic Cultural History is in the category of High and Very Effective, with a total of 9 students. The Wordwall learning media can effectively improve student learning outcomes through the pretest and post-test of the experimental class. The results of this study show that Wordwall learning media significantly improve student learning outcomes.

Discussion

The findings of this study align with those of Zhang and Yu (2022), who demonstrated that the use of interactive, technology-based learning media significantly enhances student motivation and learning outcomes, particularly in historical narrative learning. Integrating such media creates an engaging and dynamic learning environment that fosters better retention and understanding of the material. Furthermore, this research supports the work of Moorhouse et al. (2023), which highlights the effectiveness of interactive digital tools like Wordwall in facilitating students' comprehension of complex content. These tools help simplify intricate topics by combining visual and audio stimuli, making them more accessible and engaging. The results of this study reaffirm the critical role that interactive digital tools play in modern education, offering a valuable method for improving student engagement and learning outcomes, particularly in subjects that require deep cognitive involvement, such as history.

In addition, the results of this study reinforce the findings from the study of Kleftodimos. (2024) indicates that gamification-based learning increases students' interest in learning while accelerating information processing due to its competitive and interactive aspects. However, these results also suggest that students in the low category need further intervention, as suggested by Zhang et al., that digital-based personalization of learning can be a solution to improve effectiveness for students with low ability. Overall, the findings of this study affirm the relevance of Wordwall media in modernizing learning methods, making an empirical contribution to the development of technology-based educational innovations, and confirming the consistency of findings with various previous studies.

The theoretical contribution of this study's results lies in reinforcing the theory of constructivism in learning, which emphasizes that students learn more effectively through active engagement and meaningful learning experiences. Wordwall Media, as a technology-based platform, proves that interactive elements such as gamification and visualization can create a more engaging and motivating learning experience, which aligns with the technology-based learning theory developed by Vygotsky and Piaget.

Practically, this research makes a real contribution to overcoming the challenges of learning Islamic Cultural History material, especially the topic of Khulafaur Rasyidin, which is often considered abstract and challenging for students to understand. Wordwall Media offers an alternative to more innovative, interactive, and adaptive teaching methods, making it easier for teachers to deliver material and improve student understanding and learning outcomes. Thus, the results of this research can be a reference for other educational institutions that are implementing technology as a practical learning tool and supporting the modernization of the education system in the digital era.

CONCLUSION

This research raises the importance of using interactive technology-based learning media in improving student motivation and learning outcomes, especially in learning historical narratives. Key findings from the study suggest that using interactive digital learning tools can create a more dynamic and engaging learning environment, which better supports the understanding and retaining material. The study also supports previous research findings showing the effectiveness of interactive digital tools, such as Wordwall, in helping students understand complex material. The implications of these findings are significant for the development of modern education, given the role of interactive learning tools in improving student engagement and learning outcomes. Therefore, it is advisable to expand the use of this technology, especially in subjects that require high cognitive engagement. More research is needed to explore other innovative ways of utilizing technology for more effective education.

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