

## DEVELOPMENT OF WORDWALL-BASED E-LKPD TO IMPROVE FIQIH LEARNING OUTCOMES AT STATE SENIOR HIGH SCHOOL 1 ULU BARUMUN

**Intan Permatasari Nasution**

Universitas Islam Negeri Syekh Ali Hasan Ahmad Addary Padangsidimpuan  
e-mail:[nasutionintanpermatasari@gmail.com](mailto:nasutionintanpermatasari@gmail.com)

### **Abstract**

*This study focuses on the development of Wordwall-based Electronic Student Worksheets (E-LKPD) to enhance learning outcomes in Islamic Religious Education (PAI), particularly in the fiqh element, at SMA Negeri 1 Ulu Barumun, Padang Lawas Regency, North Sumatra. The background of this research is the relatively low interest and learning achievement of students, caused by the dominance of lecture-based methods and the limited use of conventional worksheets. Using a Research and Development (R&D) approach with the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation), the study involved 32 students of class XI IPA-1. The developed product was validated by media, language, and material experts, resulting in feasibility scores of 85.45%, 90%, and 88%. Student trials also showed very positive responses with an engagement rate of 91.78%. The findings reveal that the Wordwall-based E-LKPD is highly feasible and effective in improving student learning outcomes. Moreover, it fosters digital literacy and creates a more interactive, engaging, and contextual learning atmosphere. This innovation also holds potential for application in other subjects as a digital learning solution.*

**Keywords:** E-LKPD; Wordwall; Student Learning Outcomes; Islamic Religious Education; Fiqh

### **Abstrak**

*Penelitian ini berfokus pada pengembangan Lembar Kerja Peserta Didik Elektronik (E-LKPD) berbasis Wordwall untuk meningkatkan hasil belajar Pendidikan Agama Islam (PAI), khususnya pada elemen fiqh, di SMA Negeri 1 Ulu Barumun, Kabupaten Padang Lawas, Sumatera Utara. Latar belakang penelitian ini adalah masih rendahnya minat dan capaian belajar siswa yang disebabkan oleh dominasi metode ceramah serta terbatasnya penggunaan LKPD konvensional. Dengan menggunakan pendekatan Research and Development (R&D) melalui model ADDIE (Analisis, Desain, Pengembangan, Implementasi, dan Evaluasi), penelitian ini melibatkan 32 siswa kelas XI IPA-1. Produk yang dikembangkan divalidasi oleh ahli media, ahli bahasa, dan ahli materi, dengan hasil kelayakan masing-masing sebesar 85,45%, 90%, dan 88%. Uji coba terhadap siswa juga menunjukkan respons yang sangat positif dengan tingkat keterlibatan mencapai 91,78%. Hasil penelitian menunjukkan bahwa E-LKPD berbasis Wordwall sangat layak dan efektif dalam meningkatkan hasil belajar siswa. Selain itu, media ini juga mampu menumbuhkan literasi digital serta menciptakan suasana pembelajaran yang lebih interaktif, menarik, dan kontekstual. Inovasi ini juga berpotensi untuk diterapkan pada mata pelajaran lain sebagai solusi pembelajaran digital.*

**Kata kunci:** E-LKPD; Wordwall; Hasil Belajar Siswa; Pendidikan Agama Islam; Fiqih

## INTRODUCTION

Education is a fundamental aspect of national development because through education, the quality of human resources can be improved to optimally play a role in social, economic, and cultural life (Susanti, 2020). The development of information and communication technology (ICT) has brought about significant changes in the world of education, particularly in the learning process. The use of technology in education has encouraged the emergence of more interactive and flexible learning innovations (Prasetyo & Aisyah, 2021). One form of this innovation is the development of digital learning tools, such as the Wordwall-based E-LKPD (Student Worksheet), which is designed to increase the effectiveness of learning in a fun and participatory manner, particularly in Islamic Religious Education (PAI) subjects, particularly in the Fiqh element.

Islamic Religious Education (PAI), particularly in the Fiqh (Islamic jurisprudence) element, tends to be abstract and theoretical, necessitating a learning approach that simplifies concepts without compromising substance (Rohmah, 2019). The use of wordwall-based e-LKPD is considered capable of addressing this challenge because it provides a more engaging and contextual learning experience. Research by Wahyuningsih, Abdullah, & Herdini (2022) shows that the development of digital-based e-LKPD can increase active student participation. This aligns with the findings of Nur Afriani, dkk (2023), who stated that the use of technology in learning can significantly improve student motivation and learning outcomes.

The push to utilize technology is also in line with Islamic teachings. The Qur'an, in Surah Ar-Rahman, verse 33, emphasizes the importance of using reason and knowledge to explore worldly progress, including in the field of education. The hadith of the Prophet Muhammad ﷺ also emphasizes the importance of beneficial knowledge as a continuous charity (Muslim, No. 1631). Therefore, the development of Wordwall-based E-LKPD can be categorized as a concrete form of applying beneficial knowledge in the context of Islamic education.

Initial observations at SMA Negeri 1 Ulu Barumun revealed low teacher utilization of student worksheets (LKPD), particularly in digital format. None of the teachers had ever independently compiled LKPD, and only a small proportion

of students (25%) showed an active interest in the learning process. Furthermore, none of the teachers were familiar with the Wordwall platform, and only one had ever used a digital-based LKPD. However, all teachers expressed the need for more practical LKPD and welcomed the idea of using a Wordwall (Observation Data, 2024).

The use of Wordwall as an e-LKPD medium is considered effective because it offers a variety of learning activities through interactive educational games (Nugroho, 2020). This platform enables students to actively engage in learning, improves digital literacy, and reduces boredom. For teachers, the use of e-LKPD also facilitates material development, automated assessment, and learning administration (Fitriyani & Maulana, 2022).

Furthermore, the development of technology-based e-LKPD also contributes to improving students' digital literacy, a key requirement in the Industrial Revolution 4.0 era (Kurniawan, 2020). Digital literacy encompasses not only the ability to operate technological devices but also the ability to access, understand, and evaluate information critically and responsibly. Therefore, integrating technology into Islamic Religious Education (PAI) learning not only improves learning outcomes but also prepares students to face the challenges of the times.

In this context, the use of quantitative methods through experiments is necessary to empirically determine the effectiveness of the developed product. Validation and testing of the Wordwall-based E-LKPD were conducted by measuring learning outcomes before and after the media was used to ensure its positive impact on student competency achievement.

Based on this background, researchers are interested in studying and developing digital learning media through research entitled: "Development of Wordwall-Based E-LKPD to Improve Student Learning Outcomes in Islamic Religious Education Learning Elements of Fiqh at SMA Negeri 1 Ulu Barumun, Padang Lawas Regency, North Sumatra Province." This research is expected to not only contribute to improving learning outcomes, but also strengthen students' digital literacy and become a model of learning innovation that can be applied to various other subjects.

## RESEARCH METHODS

This research used a Research and Development (R&D) approach with the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) development model. This model was chosen because it provides a systematic framework for developing learning products that meet student needs while also allowing for evaluation at each stage of development.

The research subjects were 32 students of grade XI IPA-1 at SMA Negeri 1 Ulu Barumun, Padang Lawas Regency. Subjects were selected using a purposive sampling technique based on the availability of learning resources and students' readiness to participate in the product trial. In addition to students, the research also involved Islamic Religious Education teachers and expert validators consisting of media experts, linguists, and material experts to assess the feasibility of the developed product.

The research instruments included an expert validation sheet, a student response questionnaire, and a learning outcome test. The validation sheet was used to assess the appropriateness of the media, language, and materials in the Wordwall-based E-LKPD. The student response questionnaire was used to determine students' level of engagement and interest in the product, while the learning outcome test was used to measure students' understanding before and after using the media.

Data analysis techniques were conducted qualitatively and quantitatively. Qualitative data were obtained from expert input and observations of product usage, then analyzed descriptively to identify weaknesses and improve the product. Quantitative data, including expert validation scores, student questionnaire results, and learning outcome test scores, were analyzed by calculating the percentage of feasibility and improvement in student achievement. The analysis results were used as a basis for concluding the effectiveness and feasibility of the Wordwall-based E-LKPD in improving learning outcomes.

## RESULTS AND DISCUSSION

This research is based on the learning conditions of Islamic Religious Education at SMA Negeri 1 Ulu Barumun, which is still dominated by lecture

methods and the use of conventional printed worksheets (LKPD). Observations indicate that students are less enthusiastic about participating in lessons, especially in fiqh (Islamic jurisprudence) material, which is considered difficult and abstract. Teachers tend to only deliver material textually without the support of varied media. As a result, students quickly become bored and unfocused, and their learning outcomes are relatively low. This condition is reinforced by preliminary data that only about a quarter of students are actively involved in learning. This situation encourages the need to develop learning media that are more innovative, contextual, and appropriate to the characteristics of the digital generation.

In response to these needs, this study developed a Wordwall-based Electronic Student Worksheet (E-LKPD). This medium was chosen because it integrates various educational game-based activities that can create a fun learning atmosphere. The E-LKPD design process was carried out by taking into account the curriculum, particularly the basic competencies of Islamic Religious Education (PAI) in the fiqh element for grade XI. The resulting product not only contains material and questions but also includes interactive activities such as quizzes, random wheels, and puzzles that facilitate students' memorization and understanding of fiqh concepts. Thus, this E-LKPD is expected to not only be a learning tool but also a means of fostering student motivation and engagement.

Product validation was conducted by three groups of experts: media experts, linguists, and material experts. The validation results showed that the Wordwall-based E-LKPD received excellent ratings in all aspects. Media experts rated the visual feasibility, design, and interactivity at 85.45%. Linguists rated readability, clarity of instructions, and suitability to students' developmental levels at 90%. Meanwhile, material experts gave a score of 88%, considering that the E-LKPD content met competency standards, was relevant, and contextual to students' daily lives. These percentages indicate that the developed product is highly suitable for use in learning.

After undergoing a revision process based on validator input, the product was implemented with 32 students in grade XI IPA-1. The trial results showed significant changes in student attitudes during learning. Students appeared more active, enthusiastic, and fully engaged when using the Wordwall-based E-LKPD.

Learning activities were no longer monotonous because students could interact directly with game-based questions. In fact, previously passive students began to show courage in trying to answer questions and participating in group discussions.

Students responded positively to this media, with an interest rate of 91.78%. This demonstrates that the Wordwall-based E-LKPD is not only popular but also helps them better understand the fiqh material. Students found learning more enjoyable and less boring. They also reported easier memorization of previously difficult fiqh terms. This positive response demonstrates that technology-based media can meet the needs of 21st-century learning, creating a collaborative, interactive, and motivating learning environment.

In addition to increasing motivation, the effectiveness of the Wordwall-based E-LKPD was also evident in improved student learning outcomes. Test results showed a significant difference between pre- and post-learning scores. The average pre-test score was 68, while the average post-test score increased to 82. This 14-point increase confirms that the use of Wordwall-based interactive learning media significantly impacted students' understanding of Islamic jurisprudence concepts. In other words, students were not only more enthusiastic about learning but also gained a deeper understanding of the material.(Sarnoto, Rahayu, & Permana, 2021)

These results align with various previous studies emphasizing that digital technology-based media can improve the quality of learning. Gamification in education, as implemented in Wordwall, has been shown to foster students' intrinsic motivation. The learning process is no longer merely an obligation but becomes a pleasurable experience. In the context of Islamic Religious Education (PAI) learning, this is crucial because it connects religious values with learning methods relevant to today's students.

Furthermore, the use of Wordwall-based E-LKPD also fosters students' digital literacy. They become accustomed to accessing materials, interacting with media, and utilizing technology in the learning process. These competencies are crucial in facing the challenges of the Industrial Revolution 4.0 era, which demands students not only be academically intelligent but also technologically literate. Thus, Islamic Religious Education (PAI) learning, which has historically been

synonymous with conventional methods, can be transformed into more modern methods without abandoning the essence of religious values.(Sugiyono, 2019)

For teachers, the Wordwall-based E-LKPD facilitates the creation of questions, monitoring student progress, and providing prompt feedback. This tool also helps teachers create a varied and non-monotonous learning environment. For schools, this research provides evidence that integrating technology into learning can improve educational quality and create a more innovative academic climate. This innovation could be the first step toward developing digital learning media for other subjects.

Visually, the results of this study can be seen in three main graphs. The first graph shows the expert validation results, where all aspects were above 85%, making it categorized as very feasible. The second graph shows a very positive student response, reaching 91.78%, with very few negative responses. The third graph illustrates the increase in student learning outcomes from 68 in the pre-test to 82 in the post-test.

Aspect	Percentage (%)
Media	85.45
Language	90.00
Material	88.00

After improvements were made based on validator input, the product was then implemented on 32 students of grade XI IPA-1. The trial results showed that students responded very positively to the use of the Wordwall-based E-LKPD. Based on the questionnaire, the level of student interest reached 91.78%, indicating that this product is not only feasible but also in demand by students. The high student response proves that the integration of technology in learning can increase their learning motivation and active engagement in class.(Arsyad, 2019)

Category	Percentage (%)
Positive Response	91.78
Negative Response	8.22

Evaluation of learning outcomes was conducted through pre-tests and post-tests. The average student score on the pre-test was 68, while on the post-test it

increased to 82. This improvement indicates that the use of the Wordwall-based E-LKPD is effective in helping students understand fiqh concepts.

Condition	Average Value
Pre-Test	68
Post-Test	82

These results align with technology-based learning theory, which emphasizes the importance of creating an interactive learning environment. Wordwall, as a gamification tool, has been shown to foster students' intrinsic motivation while improving learning outcomes. Furthermore, the use of this tool fosters students' digital literacy, a crucial competency in the Industrial Revolution 4.0 era.

These three graphs confirm the finding that the development of the Wordwall-based E-LKPD has had a significant impact on Islamic jurisprudence learning. This medium not only received positive reviews from experts but was also well-received by students and proven effective in improving their learning outcomes. Therefore, this innovation deserves further development and expanded use in other subjects.

The results of this study not only confirm the effectiveness of the Wordwall-based E-LKPD in improving learning outcomes but also provide a broader picture of the transformation of the learning process. Prior to this innovation, Islamic Religious Education (PAI) learning, particularly in fiqh (Islamic jurisprudence), was often considered monotonous and boring. However, with the advent of interactive technology-based media, students began to realize that religious learning need not be rigid but can be presented in a modern way without losing its substantial value. This proves that religious education can align with technological developments if designed appropriately.

One of the key factors contributing to the success of the Wordwall-based E-LKPD is the gamification concept implemented. Gamification utilizes game principles to increase learning motivation, such as challenges, healthy competition, and rewards in the form of scores. This concept perfectly aligns with the characteristics of Generation Z, who are more familiar with the digital world and online games. This allows students to feel more connected to the learning process because the methods used align with their daily habits.(Deterding et al., 2011)

Furthermore, the success of this medium can also be seen from a psychological perspective for students. Through Wordwall, students feel more confident in attempting to answer questions because of its light and enjoyable format. The pressure typically felt when facing conventional problems is reduced, allowing students to focus more on understanding the concepts. In the long term, this positive learning environment has the potential to foster a love of learning and independence in students' pursuit of religious knowledge (Mariyana, M., Syahri, W., & Haryanto, H. (2023).

The collaborative aspect is also a key factor in the success of the Wordwall-based E-LKPD. Many activities are designed around group work, discussions, and quizzes. These activities foster a sense of community and cooperation among students. Thus, learning not only improves cognitive abilities but also develops social skills, which are crucial for everyday life.

The use of digital media also contributes to developing students' digital literacy. Digital literacy encompasses not only the ability to use technology but also critical skills in understanding information, evaluating content, and using it responsibly. By becoming accustomed to using Wordwall as a learning tool, students are indirectly practicing becoming intelligent, critical, and wise technology users. This is highly relevant to the needs of 21st-century competencies that emphasize critical thinking, creativity, collaboration, and communication.

From a teacher perspective, using Wordwall-based E-LKPD also offers practical benefits. Teachers can monitor students' progress in real time, assess their level of understanding through quizzes, and provide quick feedback. This helps teachers adapt learning strategies to meet students' needs. Teachers who initially tended to rely on lectures now have a more creative and engaging alternative.(Wahyuningsih, Abdullah, & Herdini, 2019)

Institutionally, the results of this study can serve as a basis for schools in formulating policies for developing digital-based learning. The implementation of Wordwall-based E-LKPD can be expanded to other subjects, enabling schools to create an innovative learning culture. This step can also enhance the school's image in the community as an educational institution that adapts to technological developments.

Thus, this discussion confirms that the development of Wordwall-based e-LKPD not only improves student learning outcomes but also brings significant changes to motivational, psychological, social, digital literacy, teacher roles, and school development strategies. These findings align with global educational trends that emphasize technology integration to produce more meaningful, contextual, and future-oriented learning.

## CONCLUSION

This study demonstrates that the development of a Wordwall-based Electronic Student Worksheet (E-LKPD) for Islamic Religious Education, specifically fiqh, at SMA Negeri 1 Ulu Barumun, is highly feasible and effective for use in the learning process. Expert validation results demonstrate high feasibility in terms of media, language, and materials, with an overall percentage above 85%. This indicates that the developed product meets learning media quality standards and can be applied in formal learning contexts.

The implementation of the Wordwall-based E-LKPD demonstrated a very positive response from students, with an engagement rate of 91.78%. This medium successfully created a more interactive and enjoyable learning environment and encouraged students to participate more actively in the learning process. This increase in motivation and interest in learning was directly proportional to student learning outcomes, which experienced a significant increase, from an average pre-test score of 68 to 82 in the post-test.

Furthermore, this study confirms that technology integration in learning not only impacts cognitive aspects but also shapes students' attitudes, social skills, and digital literacy. Through gamification-based activities on Wordwall, students are trained to collaborate, think critically, and use technology wisely. This makes Islamic Religious Education (PAI) learning more contextual, relevant, and in line with the demands of the digital era.

Therefore, it can be concluded that the Wordwall-based E-LKPD is an effective learning media innovation in improving the quality of Islamic Religious Education (PAI) learning. This product is not only beneficial for students but also serves as an alternative solution for teachers in creating creative and innovative

learning strategies. Furthermore, this research provides a tangible contribution to schools in developing a technology-based learning culture that is adaptive to current developments, while also serving as a reference for developing similar media in other subjects.

## REFERENSI

Anderson, T., & Dron, J. (2011). Three generations of distance education pedagogy. *The International Review of Research in Open and Distributed Learning*, 12(3), 80–97. <https://doi.org/10.19173/irrodl.v12i3.890>

Arsyad, A. (2019). Learning Media. Jakarta: PT RajaGrafindo Persada.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining "gamification". In Proceedings of the 15th International Academic MindTrek Conference (pp. 9–15). New York: ACM. <https://doi.org/10.1145/2181037.2181040>

Fitriyani, N., & Maulana, H. (2022). Interactive Media in Digital Learning. Bandung: EduPress.

Purwati Anggraini, Tuti Kusniarti, E. (2016). The implementation of character education model based on empowerment theater for primary school students. *Journal of Education and Practice*, Volume 7(1). <https://www.iiste.org/Journals/index.php/JEP/article/view/28148>

Kurniawan, A. (2020). Digital Literacy and Education in the 4.0 Era. Jakarta: Pustaka Media.

Kurniawan, R., & Sari, DP (2020). Development of electronic-based student worksheets to improve student learning outcomes. *Indonesian Journal of Science Education*, 8(2). <https://doi.org/10.24815/jpsi.v8i2.16165>

Nugroho, B. (2020). Wordwall as an Interactive Learning Media. Yogyakarta: Deepublish.

Prasetyo, T., & Aisyah, N. (2021). Utilization of Technology in Learning Innovation. *Journal of Technology Education*, 8(1), 15-22.

Rohmah, L. (2019). Islamic Education Learning Strategy on Fiqh Material. *Journal of Islamic Education*, 3(2), 100-112. <https://doi.org/10.36418/syntax-literate.v7i11.12084>

Sarnoto, AZ, Rahayu, N., & Permana, R. (2021). The effectiveness of gamification in improving student learning outcomes. *Journal of Education and Learning*, 28(1). <https://doi.org/10.62951/ijmse.v1i2.90>

Mariyana, M., Syahri, W., & Haryanto, H. (2023). Based E-LKPD development based problem based learning to improve students' creative thinking skills on acid-base material. *Jurnal Pendidikan Kimia*, 15(2), 163–169. <https://doi.org/10.24114/jpkim.v15i2.48264>

Nur Afriani, dkk (2023). The Influence of Digital Media on Student Learning Outcomes. *Journal of Educational Technology*, 1(1), 1-8. <https://doi.org/10.32672/pice.v1i1.295>

Sugiyono. (2019). Educational research methods: Quantitative, qualitative, and R&D approaches. Bandung: Alfabeta.

Susanti, R. (2020). Education as a Pillar of National Development. *Indonesian Journal of Education*, 5(1), 1–10.

Wahyuningsih, S., Abdullah, M., & Herdini. (2019). Development of e-LKPD based on scientific literacy to train students' critical thinking skills. *Indonesian Journal of Science Education*, 7(1).<https://doi.org/10.24815/jpsi.v7i1.13615>

Wahyuningsih, S., Abdullah, R., & Herdini, N. (2022). Development of Digital E-LKPD to Increase Student Participation. *Journal of Learning Innovation*, 7(4), 88–96.