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The Impact of Wordwall-Based Web Learning Media on Enhancing Critical Thinking Skills of Students in Akidah Akhlak Subjects at Al-Fattah Religious Boarding School in Sungai Binjai

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ABSTRACT

Background. This study departs from the need for innovative learning media that is interactive, innovative, and in accordance with technological developments, so that it can encourage active student involvement in the learning process and introduce them to the ever-evolving digital technology.

Purpose. This study aims to analyze the factors of using web-based learning media Wordwall in improving students' critical thinking skills on the material of Akidah Akhlak at the Al-Fattah Islamic Boarding School in Sungai Binjai.

Method. This study uses a descriptive qualitative approach, which focuses on the experiences of teachers and students in implementing Wordwall. Data collection techniques were carried out through classroom observations, in-depth interviews with teachers and students, and documentation of learning activities. Data were analyzed using thematic analysis, through the process of coding, categorizing, and extracting meaning from field data to find relevant patterns.

Results. The study indicate that Wordwall as a web-based media provides a real contribution in increasing learning motivation, student involvement in discussions, and their ability to analyze the concept of Akidah Akhlak, evaluate information and moral statements, provide logical reasons when expressing opinions, and connect Islamic moral values with real-life situations. Field findings indicate that students are more active in expressing their opinions, providing arguments based on their understanding, responding critically to questions, and connecting the moral values learned to everyday experiences. Wordwalls are effectively used as an alternative modern learning in Islamic boarding schools to support the development of students' critical thinking skills, particularly in the subject of Aqidah Akhlak.

Conclusion. Wordwall supports the learning process of Aqidah Akhlak by providing interactive activities that encourage students to participate in discussions, analyze questions, evaluate information, provide logical explanations, and relate Islamic moral concepts to real-life situations. It also helps teachers present abstract concepts in a more engaging and accessible manner.

KEYWORDS

Creed and Ethics, Critical thinking , Website Wordwall

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INTRODUCTION

Aqidah and Akhlak Education is an important part of the Islamic boarding school curriculum and religious

education in general. This subject not only teaches the concepts of faith and monotheism but also instills moral values and noble character that must be practiced in everyday life. In the learning process, students are required not only to memorize material but also to develop the ability to think critically, analyze, and evaluate the values learned so that they can be applied appropriately in real-life situations (Afkarina & Jannah, 2025; Fahmi et al., 2026; Mudinillah et al., 2024). According to Law No. 20 of 2003 concerning the National Education System, learning is a process of interaction between students, educators, and learning resources within a learning environment. Learning is designed to develop students' creative thinking, intellectual abilities, and knowledge construction. In this process, communication occurs between teachers and students, in which teachers act as information providers and students as recipients of information (Erwin & Dakhalan, 2024; Majadley & Aloshi, 2026).

The teacher acts as the sender of information, while the student acts as the recipient. For communication to be effective, learning media are needed as a means of conveying messages. Media serves to clarify material, increase attention, and facilitate more meaningful interactions. Improving critical thinking skills in Aqidah and Akhlak education is crucial because the material taught is abstract and conceptual, such as the values of faith, monotheism, and noble character. Students are required not only to memorize information but also to analyze the relationship between the concept of faith and everyday behavior, evaluate attitudes based on religious values, and provide logical reasons for their understanding (Indelicato & Martín, 2025; Zanga Céspedes et al., 2025). Critical thinking skills enable students to identify problems, consider alternative solutions, and make decisions in accordance with religious principles. Conversely, students who lack critical thinking skills tend to be passive, avoid problems, and struggle to provide solutions. By cultivating critical thinking, students can absorb knowledge more deeply and connect it to real life. This supports successful learning while fostering more mature character (Hanafi et al., 2025; Kassenkhan et al., 2025; Zanga Céspedes et al., 2025).

Critical thinking is an essential cognitive ability that enables students to examine information, evaluate arguments, draw conclusions, and make reasoned decisions. To provide a clearer theoretical foundation for this study, the concept of critical thinking is based on the framework proposed, who describes critical thinking as reasonable and reflective thinking focused on deciding what to believe or do (Calma & Davies, 2026; Pietarinen & Shi, 2026). This framework emphasizes that critical thinking involves more than remembering or understanding information; it requires individuals to examine evidence, assess arguments, consider different perspectives, and make decisions based on logical reasoning. Furthermore, Facione (1990) identifies six core cognitive skills of critical thinking: interpretation, analysis, evaluation, inference, explanation, and self-regulation (Chen, 2026; Erwin et al., 2025). These skills provide a theoretical basis for identifying and examining students' critical thinking abilities during the learning process.

In the context of Aqidah Akhlak learning, these theoretical perspectives can be translated into observable indicators. First, analysis refers to students' ability to identify and examine the meaning of Islamic faith and moral concepts, including the relationship between religious teachings and everyday behavior. Second, evaluation refers to students' ability to assess statements, attitudes, and actions based on Islamic values and relevant information. Third, inference refers to students' ability to draw reasonable conclusions from learning materials and real-life situations. Fourth, explanation refers to students' ability to express their understanding and provide logical reasons or arguments when responding to questions. Fifth, interpretation refers to students' ability to understand and explain the meaning of religious concepts and moral situations. Sixth, self-regulation refers to students' ability to reflect on and reconsider their own understanding and judgments. These

indicators serve as the conceptual framework for examining critical thinking in this study, particularly through students' responses, arguments, discussions, and reflections during Wordwall-based learning activities.

The development of information technology has brought significant changes to the world of education, including in Islamic boarding schools. Digital-based learning media has become an alternative for improving the quality of learning. One widely used platform is Wordwall, a website-based medium that provides interactive exercises, quizzes, and educational games. Wordwall provides opportunities for teachers and students to interact with learning materials in a more engaging, dynamic, and contextual way. In the teaching of Aqidah Akhlak (Islamic Creed and Morals), Wordwall is expected to support the development of students' critical thinking skills (Hidayahtulloh, 2026). Al-Fattah Islamic Boarding School in Sungai Binjai, as an Islamic educational institution, faces the challenge of integrating technology without compromising Islamic values. By utilizing Wordwall, teachers can present Aqidah Akhlak materials interactively, enabling students not only to receive information passively but also to actively participate in the learning process. This aligns with the Islamic boarding school's goal of developing students who are knowledgeable, possess noble character, and are able to face the challenges of the times (Glory Islamic, 2023).

Pre-observations indicate that the teaching of Aqidah Akhlak in the Islamic boarding school is still dominated by conventional methods, such as lectures and question-and-answer sessions. Interaction between teachers and students is relatively limited, while discussions and evaluations that require critical analysis are not yet optimally implemented. This situation indicates the need for more interactive learning media to provide opportunities for students to develop their critical thinking abilities. The abstract nature of Aqidah Akhlak material can also make it difficult for students to understand religious concepts through verbal explanations alone. Therefore, the integration of digital learning media is considered a potential approach to creating a more active learning environment, in which students can construct knowledge through interaction with learning materials and participate more actively in the learning process (Boakye-Yiadom et al., 2025; Hao et al., 2026; Yaseen et al., 2025).

Learning media refers to any tool or resource that can be used to convey learning messages and materials to stimulate students' attention, interest, thoughts, and feelings in achieving specific learning objectives. Examples include pictures, charts, models, films, videos, and computers. Learning media can clarify the presentation of information, increase and direct students' attention, stimulate learning motivation, facilitate interaction, overcome limitations of space and time, and provide shared learning experiences (Toprakli & Satir, 2025). The purpose of learning media is to assist teachers in delivering information so that learning messages can be understood effectively by students. The use of appropriate learning media can therefore facilitate the teaching and learning process and support the achievement of educational objectives (Stasolla et al., 2025).

Wordwall is a website-based learning platform that offers various educational games designed to support learning activities, exercises, and student assessments. It is relatively easy to use and accessible through various digital devices, including computers, laptops, and smartphones. Wordwall provides interactive quizzes and educational games that combine visual elements, colors, and other features to make learning activities more engaging (Fang & Chiu, 2025). This platform enables teachers to create different types of learning activities and evaluations according to the learning objectives. Its interactive features can encourage students to participate actively, respond to questions, and engage with the learning materials.

From the perspective of critical thinking development, Wordwall has the potential to facilitate students' cognitive engagement through interactive questions, quizzes, and evaluation activities. For example, questions that require students to distinguish between appropriate and inappropriate moral behavior can encourage analysis and evaluation. Questions that ask students to explain the reasons behind a particular answer can stimulate logical reasoning and explanation. Furthermore, questions involving everyday moral situations can encourage students to draw conclusions and relate Islamic teachings to reallife experiences. Through these activities, Wordwall can provide learning opportunities that correspond to several critical thinking indicators proposed by Ennis (2011) and Facione (1990). However, the development of critical thinking does not automatically occur through the use of digital games alone. It also depends on the quality of the questions, the teacher's instructional guidance, opportunities for discussion, and students' involvement in explaining and evaluating their answers.

The use of Wordwall in learning is also associated with the principle of learning while playing, which can create a more enjoyable and less monotonous learning atmosphere. Students can participate in interactive activities, respond to questions, and receive immediate feedback. Previous research has indicated that Wordwall can increase students' interest, motivation, and participation in learning Aqidah Akhla. Furthermore, interactive learning activities can provide opportunities for students to express their opinions, discuss different perspectives, and evaluate their understanding of religious and moral concepts. These activities are relevant to the development of critical thinking, particularly in analyzing concepts, evaluating information, providing logical explanations, and connecting learning materials with everyday situations.

Although previous studies have discussed the use of Wordwall as an interactive learning medium, the relationship between its implementation and specific indicators of students' critical thinking in Aqidah Akhlak learning still requires further examination, particularly in the context of Islamic boarding schools. The use of Wordwall should not only be viewed in terms of students' motivation, enjoyment, or participation but also in terms of the cognitive processes demonstrated during learning activities. Therefore, this study focuses on examining how Wordwall is implemented in Aqidah Akhlak learning and how its use supports students' critical thinking abilities based on the indicators of analysis, evaluation, inference, explanation, interpretation, and self-regulation. The study also examines the supporting and inhibiting factors influencing the implementation of Wordwall at Al-Fattah Islamic Boarding School in Sungai Binjai. By using classroom observations, interviews, and documentation, this study seeks to provide a qualitative understanding of the relationship between interactive digital learning media and the development of students' critical thinking in Islamic religious education.

RESEARCH AND METHODOLOGY

This study employed a qualitative research approach using a case study design. This approach was chosen because the study aims to understand the phenomenon of Wordwall utilization in a natural, in-depth, and contextual manner without statistical intervention. Specifically, this research adopted a single-case study design because it focused on a particular phenomenon within a specific research setting, namely the implementation of Wordwall to support students' critical thinking skills at Al-Fattah Islamic Boarding School in Sungai Binjai. The case study approach enabled the researcher to explore the learning process, students' experiences, and the factors influencing the implementation of Wordwall in the context of Aqidah Akhlak education.

To obtain comprehensive case study data, this study employed multiple data collection techniques, including classroom observation, in-depth interviews, and documentation. First,

classroom observations were conducted through a passive participant approach, in which the researcher was directly present in the Aqidah Akhlak classroom to observe the learning process without actively participating in teaching activities. The observations focused on two main aspects: the teacher's process of integrating Wordwall into learning and the emergence of students' critical thinking indicators during learning activities. The observation indicators were based on the critical thinking framework of Facione (Facione et al., 2020), covering interpretation, analysis, evaluation, inference, explanation, and self-regulation. Particular attention was given to students' ability to analyze questions, evaluate information, draw conclusions, provide logical arguments, interpret moral situations, and reflect on their answers. Response speed was recorded only as a description of student participation and was not treated as a direct indicator of critical thinking ability.

Second, in-depth interviews were conducted using a semi-structured interview guide to ensure that conversations remained flexible while addressing the research objectives. Interviews involved teachers and students. Teacher interviews focused on lesson planning, the implementation of Wordwall, instructional strategies, and the evaluation of students' learning activities. Student interviews explored their experiences, perceptions, difficulties, and involvement in using Wordwall, particularly when analyzing questions, providing arguments, and understanding Aqidah Akhlak concepts. Third, a documentation study was conducted by collecting supporting documents, including teachers' lesson plans (RPP), Wordwall activity designs or links, photographs of learning activities, and available records of students' Wordwall assessment results. These documents were used to complement observational and interview findings and provide additional information about the implementation of Wordwall.

In qualitative research, the researcher serves as the primary instrument (human instrument), responsible for determining the research focus, selecting informants, collecting data, analyzing findings, and drawing conclusions. To support the research process, several additional instruments were used, including observation guidelines containing critical thinking indicators, semi-structured interview guidelines, and audio recording and photographic documentation equipment, with permission from the Islamic boarding school.

To ensure the trustworthiness and validity of the research findings, this study employed several strategies, namely source triangulation, technique triangulation, member checking, audit trail, and peer debriefing. First, source triangulation was conducted by comparing information obtained from different informants, particularly teachers and students. This process aimed to identify similarities, differences, and complementary perspectives regarding the implementation of Wordwall and students' critical thinking activities. Second, technique triangulation was carried out by comparing data obtained through classroom observations, interviews, and documentation. For example, students' ability to provide logical arguments observed during classroom activities was compared with their explanations during interviews and relevant learning documentation. The comparison of these different sources and techniques helped the researcher examine the consistency of the findings and reduce the possibility of relying on a single source of information.

Third, member checking was conducted by presenting interview summaries and relevant interpretations to selected research participants, particularly teachers and students, to confirm whether the information accurately represented their experiences and statements. Participants were given opportunities to clarify, correct, or provide additional information when necessary. Fourth, an audit trail was maintained by systematically documenting the research process, including observation notes, interview transcripts, documentation records, coding decisions, category development, and the interpretation of findings. This documentation provided a clear record of how the research data were collected, processed, and interpreted. Fifth, peer debriefing was conducted

through discussions with academic colleagues or research supervisors regarding the research procedures, coding categories, interpretation of findings, and conclusions. These discussions were intended to identify possible researcher bias and strengthen the credibility of the analytical process.

The data analysis technique followed the interactive model proposed, which consists of data collection, data condensation, data display, and conclusion drawing and verification. First, data collection involved gathering field notes, interview transcripts, photographs, and relevant learning documents throughout the research process. Second, data condensation involved selecting, simplifying, and organizing relevant information while excluding data that were not directly related to the research objectives. The researcher focused on information concerning the implementation of Wordwall, the supporting and inhibiting factors, and the emergence of students' critical thinking indicators. Third, data display involved organizing the condensed data into descriptive narratives, matrices, and tables to facilitate the identification of patterns and relationships among the findings. Fourth, conclusion drawing and verification involved identifying significant patterns, interpreting relationships among the data, and formulating conclusions in accordance with the research questions. The conclusions were subsequently examined by comparing evidence from observations, interviews, and documentation.

To maintain consistency in the coding process, the researcher developed a coding framework based on the critical thinking indicators proposed by Facione (1990), consisting of interpretation, analysis, evaluation, inference, explanation, and self-regulation. The same coding framework was applied systematically to the observation notes, interview transcripts, and relevant documentation. The coding process involved identifying meaningful statements and student behaviors, assigning initial codes, grouping related codes into categories, and developing themes relevant to the research objectives. The researcher also reviewed the coded data repeatedly to ensure that similar statements and behaviors were categorized consistently. Any unclear or overlapping codes were reexamined and refined based on their meaning and relevance to the established indicators. Furthermore, discussions with academic colleagues or the research supervisor were used to review coding decisions and interpretations, thereby strengthening the consistency and transparency of the analysis.

Through these methodological procedures, this research seeks to provide a comprehensive understanding of the factors influencing the use of Wordwall as a learning medium to support students' critical thinking skills in Aqidah Akhlak education at Al-Fattah Islamic Boarding School in Sungai Binjai.

RESULT AND DISCUSSION

The results of the study indicate that Wordwall functions not only as a game medium but also as a pedagogical medium in learning Aqidah Akhlak. Wordwall is used in quizzes, discussions, and evaluations so that students are more actively involved in the learning process. These activities encourage students to analyze questions, provide reasons, evaluate answers, and connect the concept of Aqidah Akhlak to everyday life. This finding is in line with Lubis and Astuti (2024), who explained that the effectiveness of using digital media in learning is influenced by the support of teachers, students, and the learning environment.

1. The Implementation of Wordwall in Aqidah Akhlak Learning

The findings indicate that Wordwall was used as an interactive learning medium in teaching Aqidah Akhlak at Al-Fattah Islamic Boarding School in Sungai Binjai. Teachers utilized Wordwall for quizzes, learning exercises, discussions, and evaluations. These activities provided students with opportunities to interact directly with learning materials rather than relying solely on conventional

lectures. Based on classroom observations and interviews, Wordwall appeared to support students' engagement with learning activities and create opportunities for them to demonstrate critical thinking behaviors. These behaviors included analyzing questions, evaluating possible answers, providing logical reasons, and relating moral concepts to everyday situations.

The findings also indicate that Wordwall was not merely perceived as an entertainment medium but was utilized as a pedagogical instrument to facilitate students' engagement with Aqidah Akhlak materials. Students had opportunities to connect abstract religious concepts with real-life situations and express their understanding through classroom discussions. Their willingness to explain and evaluate answers reflected observable critical thinking behaviors during the learning process. However, these findings describe students demonstrated behaviors and learning experiences rather than statistically measured improvements in critical thinking abilities.

This finding is consistent with Lubis and Astuti (2024), who emphasize that the success of digital learning media is influenced by students' internal factors, teacher support, and the learning environment. Similarly, Hidayat et al. (2025) reported that gamification-based Wordwall activities were associated with students' interest in Islamic Religious Education learning at SDIT Mutiara Hati, Tebo, including intrinsic motivation and mental readiness, supported by teacher involvement and a conducive learning environment.

2. Supporting and Inhibiting Factors in the Implementation of Wordwall

Despite its potential to facilitate interactive learning, the implementation of Wordwall encountered several obstacles that influenced the learning process. First, limited internet access and unstable network connections sometimes interrupted digital learning activities. Second, students' digital literacy levels varied. Some students experienced difficulties operating digital devices and required additional guidance from teachers. This condition is consistent with Purnomo (2025), who highlights challenges related to digital literacy among students in Islamic boarding school environments. Third, classroom management presented another challenge because students' enthusiasm during game-based activities sometimes made it difficult to maintain classroom order. Teachers therefore needed to establish clear instructions and organize learning activities to ensure that students remained focused on the learning objectives. Fourth, the limited availability of digital devices required students to use the devices alternately, which affected the organization and duration of learning activities.

These findings are supported by Syamsidar et al. (2025), who discuss the integration of Wordwall with the Two Stay Two Stray learning model in Islamic Religious Education. The findings suggest that the implementation of interactive digital media requires appropriate instructional strategies and classroom organization.

These obstacles demonstrate that the implementation of Wordwall depends not only on the availability of digital media but also on institutional infrastructure, students' technological readiness, and teachers' classroom management strategies. Therefore, the opportunities provided by Wordwall to support critical thinking activities need to be considered alongside the technical and pedagogical conditions of the Islamic boarding school.

3. Wordwall and Students' Critical Thinking Behaviors

To examine students' critical thinking more systematically, the findings were interpreted using the six indicators proposed by Facione (1990), namely interpretation, analysis, evaluation, inference, explanation, and self-regulation. These indicators provided a framework for identifying observable behaviors during Wordwall-based Aqidah Akhlak learning activities. The findings are presented as qualitative descriptions of students' participation, responses, and reasoning rather than as measurements of changes in their overall critical thinking abilities.

First, interpretation was reflected in students' efforts to understand questions and identify the meanings of Aqidah Akhlak concepts presented in Wordwall activities. Students were required to understand the content of questions before selecting or discussing possible answers. Second, analysis was reflected in students' ability to examine questions and relate religious concepts to examples of moral behavior in everyday life. Third, evaluation was observed when students considered the appropriateness of answers and assessed particular attitudes or actions based on Islamic moral values. Fourth, inference was reflected in students' efforts to draw conclusions from questions and moral situations presented during learning activities.

Fifth, explanation appeared when students expressed opinions and provided reasons to support their answers during classroom discussions. Sixth, self-regulation was associated with students' opportunities to reconsider their answers, reflect on their understanding, and recognize mistakes after receiving feedback from teachers or Wordwall activities. These observations indicate that Wordwall provided opportunities for students to engage in activities associated with critical thinking. Nevertheless, the extent to which each indicator was demonstrated varied among students. Some students were able to explain their answers and participate actively in discussions, while others still required teacher guidance to formulate arguments and evaluate information. Therefore, the findings suggest that Wordwall supports the practice of critical thinking behaviors, rather than demonstrating a quantitatively verified improvement in students' critical thinking abilities.

This finding is consistent with the study by Muzaini, M. C. et al. (2023), which discusses the use of Wordwall in blended learning to support critical thinking among elementary madrasah students. The findings also relate to Ramadhan H. and Arsyad J. (2025), who emphasize the importance of critical thinking in Islamic education. Furthermore, the research by Heinich et al. (2002) provides a basis for understanding the role of learning media in facilitating students' active engagement with learning materials.

4. Teacher and Student Responses to Wordwall-Based Learning

From the teacher's perspective, Wordwall was considered a flexible and communicative learning medium that facilitated the presentation of abstract Aqidah Akhlak concepts. Its interactive features provided alternative ways to organize classroom activities and evaluations. This finding is consistent with Lubis and Astuti (2024), who discuss the use of Wordwall as an interactive learning medium. From the students' perspective, most participants expressed positive responses to the use of Wordwall. They described the learning activities as more enjoyable, interactive, and challenging than conventional classroom activities. These responses represent students' perceptions of the learning experience and indicate that Wordwall was positively received by many participants. However, positive perceptions and increased enthusiasm should not automatically be interpreted as evidence of improved critical thinking abilities.

Although many students participated actively, some remained passive because of limited digital literacy and difficulties understanding particular questions. This finding is consistent with Lestari (2021a) and Aliatunisa and Faridi (2024), who discuss the importance of interactive learning environments and student involvement in educational activities. The differences in students' responses also suggest that familiarity with digital technology may influence their participation in Wordwall-based learning. Students who were more familiar with digital devices tended to adapt more easily to the activities, whereas those with limited digital experience required additional assistance. This indicates that teachers' guidance remains important in ensuring that all students have opportunities to participate in learning activities and express their reasoning.

5. Social Interaction and Collaborative Learning

Furthermore, classroom observations and documentation indicated that Wordwall activities provided opportunities for greater social interaction among students. Digital quizzes and gamebased activities encouraged students to collaborate, discuss possible answers, and provide feedback to their peers. Some students who had previously participated less actively began expressing their opinions during group discussions, although several still required additional guidance.

These findings suggest that Wordwall can facilitate a more participatory classroom environment in which students have opportunities to communicate their understanding, consider different perspectives, and provide explanations. Such interactions are relevant to critical thinking development because students can practice analyzing information and justifying their opinions through discussion. However, the presence of collaboration and active participation should be understood as supportive learning conditions rather than direct evidence of increased critical thinking competence.

This finding is consistent with Jazil et al. (2025), who discuss the integration of Problem-Based Learning and multimedia strategies to encourage students' critical involvement in Islamic education. Similarly, Rahmawati et al. (2025) emphasize the potential of gamification-based educational technology to facilitate communication and collaboration in Islamic boarding school environments. The findings are also related to Kurniawan and Sari (2024), who highlight the contribution of interactive digital media to students' emotional engagement in religious learning. Furthermore, Campbell and Tsuria (2021) discuss the relationship between digital media and the internalization of religious values.

6. Theoretical and Educational Implications

The findings of this study can be interpreted through the perspective of constructivist learning theory, which emphasizes the active involvement of students in constructing knowledge through learning experiences and interactions (Heinich et al., 2002). In this context, Wordwall provides an interactive learning environment in which students can respond to questions, receive feedback, discuss possible answers, and relate learning materials to their experiences. These activities create opportunities for students to develop reasoning and reflection during Aqidah Akhlak learning. Furthermore, the findings are relevant to Facione's (1990) framework of critical thinking, particularly the cognitive skills of interpretation, analysis, evaluation, inference, explanation, and self-regulation. The observed student activities indicate that Wordwall can provide opportunities to practice several of these skills through interactive questions and classroom discussions. Nevertheless, the development of these abilities also depends on the teacher's ability to design questions that require reasoning rather than simple memorization.

From an educational perspective, Wordwall can be considered an alternative digital learning medium that supports the transformation of conventional learning into more interactive and participatory activities. Teachers can use the platform to present questions related to religious concepts, moral situations, and everyday experiences. However, its implementation requires adequate infrastructure, teacher preparation, classroom management, and students' digital literacy. Previous research by Adzibah et al. (2025) also emphasizes the role of Wordwall in encouraging the transformation of Islamic Religious Education teachers from conventional instructional approaches toward more participatory, game-based learning. Similarly, Majdah et al. (2026) highlight the importance of digital literacy in the transformation of Islamic education in Indonesia.

Overall, the findings demonstrate that Wordwall supports students' engagement in critical thinking activities during Aqidah Akhlak learning. Its contribution is reflected in opportunities for

students to interpret religious concepts, analyze questions, evaluate moral situations, draw conclusions, explain their answers, and reflect on their understanding. However, because this study employed a descriptive qualitative approach without pre-test and post-test measurements, it does not establish the extent of quantitative improvement in students' critical thinking abilities. Instead, it provides an understanding of how Wordwall facilitates critical thinking behaviors and how teachers and students perceive its implementation in the Islamic boarding school context.

Table 1. Summary of Findings Based on Data Sources and Analysis Themes

Theme Analysis	Main Findings	Data Source	Triangulation
Wordwall Implementation	Wordwall is used in quizzes, discussions, and evaluations to make learning more interactive.	Observation, teacher interviews, documentation	Observation results are supported by teacher statements and learning documentation.
Student Engagement	Students showed enthusiasm and active involvement in answering questions and participating in discussions.	Impact On Learnin Observation, interviews with 11 students, documentationg	Observation results were compared with student experiences and documentation of learning activities
Critical Thinking Skills	Students were able to analyze questions, provide reasons, evaluate answers, and connect the material to everyday life.	Observation, teacher interviews, student interviews, documentation	Critical thinking indicators were compared with teacher statements, student experiences, and learning documentation
Interaction and Collaboration	Students discuss, exchange opinions, and work together to solve questions	Observation, student interviews, documentation	Observed interactions are compared with student experiences and documentation of learning activities.
Technical Constraints	Internet connection, limited digital devices, and differences in digital literacy skills are obstacles in the use of Wordwall	Observation, teacher interviews, student interviews	Constraints found through observation are compared with teacher and student experiences. |
Classroom Management	High student enthusiasm sometimes makes classroom management more challenging so flexible classroom management strategies are needed.	Observation, teacher interviews, student interviews	Observed classroom conditions are compared with teacher statements and student experiences.

CONCLUSION

Wordwall can serve as an interactive and relevant digital learning medium to support students' engagement and critical thinking behaviors in Aqidah Akhlak learning at Al-Fattah Islamic Boarding School in Sungai Binjai. Its contribution is reflected in students' opportunities to analyze questions, evaluate information, provide logical explanations, draw conclusions, and relate moral concepts to everyday situations. The findings also indicate that teacher guidance, institutional infrastructure, and students' digital literacy are important factors influencing the implementation of Wordwall. Rather than establishing a measurable improvement in critical thinking abilities, this study provides qualitative evidence that Wordwall facilitates learning activities associated with critical thinking and creates opportunities for students to practice these skills in the context of Islamic religious education.

This study concludes that Wordwall supports the learning process of Aqidah Akhlak by providing interactive activities that encourage students to participate in discussions, analyze questions, evaluate information, provide logical explanations, and relate Islamic moral concepts to real-life situations. Rather than demonstrating a measurable improvement in critical thinking skills, the findings indicate that Wordwall facilitates opportunities for students to practice critical thinking behaviors during learning activities. It also helps teachers present abstract concepts in a more engaging and accessible manner.

The implementation of Wordwall is supported by its ease of access, interactive features, and various evaluation formats. However, its utilization faces several challenges, particularly limited internet connectivity, insufficient digital devices, and varying levels of students' digital literacy. These factors influence the smooth implementation of technologybased learning in the Islamic boarding school. Practically, teachers are encouraged to design Wordwall activities that emphasize reasoning, analysis, evaluation, and reflection rather than focusing solely on quizzes and memorization. Meanwhile, pesantren administrators need to provide adequate technological infrastructure, facilitate digital literacy training for teachers and students, and establish institutional support for sustainable technology integration. These efforts can help ensure that Wordwall is used not merely as an entertainment medium but as a pedagogical tool that supports interactive and contextual Islamic education.

DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

As the author, I use Grammarly to help improve the grammar, language quality, and overall readability of the text. After using the tool, I carefully review and edit the content as necessary, and I take full responsibility for the content of this publication.

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing – review and editing.
Author 2: Conceptualization; Data curation; Investigation.
Author 3: Data curation; Investigation and grammatical evaluation.

DECLARATIONOF COMPETING INTEREST

The authors state that they have no competing financial interests or personal relationships that could be perceived to have influenced the work reported in this paper.

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