

The Role of Muhammadiyah in the Development of Digital Literacy in Islamic Religious Education: A Library Research Study

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ABSTRACT

This study aims to analyze Muhammadiyah's role in developing digital literacy in Islamic Religious Education in the digital era. The development of information technology has brought significant changes to the learning process, requiring Islamic education to adapt to technological developments without abandoning Islamic values. This study employed a qualitative approach with library research. Data were obtained through various scientific journal articles, books, and documents related to Muhammadiyah, digital literacy, and Islamic Religious Education. Data collection was conducted through documentation studies, while data analysis utilized content analysis with the stages of data reduction, data presentation, and conclusion drawing. The results indicate that Muhammadiyah plays a significant role in developing digital literacy through the integration of digital media into Islamic Religious Education learning, strengthening digital da'wah (preaching), developing Islamic digital ethics, improving teacher competency, and strengthening technology-based organizational governance. The use of digital technology helps improve learning effectiveness, critical thinking skills, and students' religious character. Furthermore, Muhammadiyah actively utilizes social media and digital platforms as a means of disseminating moderate Islamic values and religious education that is adaptive to current developments. Despite persistent obstacles such as limited infrastructure and limited digital literacy skills among some human resources, the development of digital literacy continues to have a positive impact on the transformation of Islamic Religious Education in the digital era. This research implies that strengthening digital literacy based on Islamic values needs to be continuously developed to create Islamic education that is innovative, moderate, and relevant to the needs of modern society.

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1. INTRODUCTION

The development of information and communication technology has brought great changes in various aspects of life, including in the world of Islamic education. Digitization of education is one of the important needs to answer the challenges of 21st century learning that demand flexibility, creativity, and critical thinking skills of students (Suswita, 2025). In the context of Islamic Religious Education (PAI), the use of digital technology not only functions as a learning medium, but also as a means of strengthening Islamic values in the midst of global information flows. The presence of digital media allows the learning process to be more interactive, effective, and accessible to students. Therefore, digital transformation in Islamic education is a strategic step to maintain the relevance of religious learning with the times (Yahya, 2023).

Digital literacy is the main competency that students must have in the modern era. Digital literacy is not only related to the ability to operate technological devices, but also the ability to understand, evaluate, and utilize information critically and responsibly (Lesmana, 2025). In Islamic education, digital literacy skills are needed so that students are able to filter various religious information circulating through the internet and social media. Low digital literacy skills can lead to the emergence of non-moderate religious understanding, the spread of hoaxes, and the abuse of digital media. Therefore, strengthening digital literacy in Islamic Religious Education is an urgent need to form a generation of Muslims who are intelligent and wise in utilizing technology (Missouri, Zuhriyah, & Jamilah, 2024).

The development of digital media has also changed the pattern of social interaction and the way the younger generation acquires religious knowledge. Platforms such as YouTube, Instagram, TikTok, and various learning applications are the main source for the younger generation in accessing Islamic information (Nasution, Yuyung, Putri, & Fauzi, 2025). This condition provides great opportunities for the development of da'wah and digital-based Islamic education, but at the same time presents challenges in the form of rampant unverified information. Islamic religious education is required to be able to build students' critical thinking skills so that they are not easily influenced by negative content or extreme religious understanding. Thus, the integration of digital literacy in PAI learning is an important strategy in building a moderate and tolerant understanding of Islam (Rahmat & Utomo, 2025).

Muhammadiyah as one of the largest Islamic organizations in Indonesia has an important role in the development of modern Islamic education. Since its inception, Muhammadiyah has been known as a *tajdid* movement that seeks to integrate Islamic teachings with the development of science and technology. In facing the digital era, Muhammadiyah continues to innovate through the development of education, da'wah, and social movements based on digital technology. Muhammadiyah's adaptation to technological developments shows the organization's commitment to maintaining the existence of progressive Islam in the midst of dynamic social changes. In addition, Muhammadiyah is also active in using digital media to spread moderate, tolerant, and inclusive Islamic values to the wider community (Raska et al., 2023).

Muhammadiyah's digital transformation can be seen from various organizational activities that have begun to be integrated with information technology. Muhammadiyah utilizes digital platforms as a means of da'wah, education, and strengthening the ideology of progressive Islam. The use of digital technology allows the spread of Muhammadiyah values to be wider and more effective, especially among the younger generation. In addition, digital transformation also strengthens community participation in various social and humanitarian activities of Muhammadiyah. The integration of technology in the Muhammadiyah movement shows that digitalization is not only understood as a technical change, but also as an ideological strategy in facing the challenges of modern times (Realisti, Almasahni, & Mustofa, 2025). In the field of education, Muhammadiyah has an extensive network of schools and colleges in Indonesia. Muhammadiyah educational institutions are one of the main forces in the development of digital literacy based on Islamic values. Various Muhammadiyah schools have begun to implement digital technology-based learning to improve the quality of education and competitiveness of students. The implementation of digitalization of learning is directed not only at improving technological skills, but also at the formation of religious character and digital ethics of students. Thus, Muhammadiyah has made

a major contribution to creating an Islamic education system that is adaptive to the development of modern technology (Sa'adah & Mufidah, 2025).

The development of digital literacy in Islamic Religious Education also requires the role of teachers as learning facilitators. Teachers no longer only function as material presenters, but also as guides in the wise and responsible use of digital media. Teachers have a responsibility to build a healthy digital literacy culture in the school environment (Siregar, 2025). The use of learning technology can increase the effectiveness of learning if it is balanced with the ability of teachers to manage digital media creatively and educationally. Therefore, improving teacher competence in the field of digital literacy is an important factor in the successful implementation of technology-based learning (Al Hawa et al., 2024).

The application of Islamic Religious Education learning based on digital literacy has been proven to be able to increase the motivation and involvement of students in the learning process. The use of learning videos, educational applications, and online platforms makes learning more engaging and interactive for students (Rahmani, 2025). In addition, digital-based learning helps students understand religious material more contextually according to the times. However, the implementation of digital learning also still faces various obstacles such as limited internet access, technological devices, and the readiness of human resources. Therefore, a planned learning strategy is needed so that the use of digital literacy in PAI can run optimally (Siregar, Andriyana, & Humairoh, 2024).

The development of digital technology also brings new challenges in the form of declining ethics in the use of social media. The spread of hoaxes, hate speech, cyberbullying, and disinformation are serious problems facing today's digital society (Fadillah & Purba, 2025). Muhammadiyah views that strengthening digital literacy must be balanced with the cultivation of Islamic ethical values so that the use of technology remains oriented towards benefit. The concept of monotheistic ethics in the philosophy of education of Muhammadiyah is an important foundation in building digital civilization. Values such as tabayyun, responsibility, and noble morals must be an integral part of the development of digital literacy in the Islamic education environment (Herdiana, Hakim, & Sari, 2025). In addition to playing a role in strengthening digital ethics, Muhammadiyah also develops digital literacy in organizational management and institutional administration. The use of digital applications such as Sicara, NotulenMu, and SimasMuh shows Muhammadiyah's efforts to build technology-based organizational governance. The strengthening of digital literacy is able to increase the effectiveness of administration, transparency, and accountability of the Muhammadiyah organization at various levels. The technical assistance provided to Muhammadiyah administrators and cadres shows that the development of digital literacy must be carried out in a sustainable manner in order to have a maximum impact on the quality of the organization (Harahap et al., 2026).

Muhammadiyah also has an autonomous women's organization, namely Aisyiyah, which is active in the development of digital-based religious education. Aisyiyah seeks to develop various religion-based digital literacy programs to improve people's religious understanding. Programs such as the tahfiz house movement and religious digital education are a form of adaptation of Muhammadiyah women's organizations to the development of digital technology. Despite facing various obstacles such as the low technological ability of some members and limited resources, Aisyiyah still shows a significant contribution to the development of digital-based religious education that is inclusive and adaptive to the changing times (Adyani & Layyinnati, 2025).

Based on these various descriptions, it can be understood that Muhammadiyah has a strategic role in the development of digital literacy in Islamic Religious Education. Muhammadiyah not only utilizes technology as a medium of learning and da'wah, but also makes it a means of strengthening moderate Islamic values, digital ethics, and character formation of the younger generation. Through a network of educational institutions, the digital da'wah movement, the strengthening of technology-based organizational governance, and the development of Islamic digital ethics, Muhammadiyah has shown a real contribution in building Islamic education that is relevant to the development of the digital era. Therefore, this research is important to analyze in depth the role of Muhammadiyah in the development of digital literacy in Islamic Religious Education through a library research approach.

2. METHODS

This research uses a qualitative approach with the type of library research or literature study. The qualitative approach was chosen because this research aims to understand and analyze in depth the role of Muhammadiyah in the development of digital literacy in Islamic Religious Education based on various relevant literature sources. According to Sugiyono (2022), qualitative research is a research method used to understand social phenomena in depth by placing researchers as the main instrument in the process of data collection and analysis. Meanwhile, literature studies are research methods that utilize various written sources such as books, scientific journals, articles, documents, and previous research results as the main source of research data (Zed, 2018). By using this approach, researchers can gain a comprehensive understanding of the concepts, strategies, and implementation of digital literacy in Islamic Religious Education developed by Muhammadiyah. The data sources in this study consist of primary data and secondary data. Primary data was obtained from scientific journal articles that discuss Muhammadiyah, digital literacy, Islamic education transformation, and digital-based Islamic Religious Education. The articles were selected based on the relevance of the research theme and published in accredited scientific journals. The secondary data was obtained from various research methodology books, Islamic education books, official documents of Muhammadiyah, and other supporting references related to digital literacy and Islamic education. According to Moleong (2021), data sources in qualitative research can be in the form of documents, archives, books, or various other written sources that are able to support the research analysis process in depth and systematically.

The data collection technique in this study was carried out through a documentation study. The researcher collects various literature relevant to the research theme, then identifies, classifies, and selects sources that are related to the research focus. The literature used includes national journal articles, scientific books, previous research results, and official documents of Muhammadiyah related to the development of digital literacy and Islamic Religious Education. According to Nazir (2017), the documentation technique is a data collection technique that is carried out by examining written documents to obtain data related to the research object. In this study, the documentation technique was used to obtain in-depth information about Muhammadiyah's strategy in developing digital literacy in Islamic Religious Education. The data analysis technique in this study uses content analysis. The analysis is carried out through several stages, namely data reduction, data presentation, and drawing conclusions. At the data reduction stage, the researcher selects and focuses on data that is relevant to the research theme. Furthermore, the data is presented systematically in the form of a descriptive description so that it is easy to understand and analyze. The last stage is the drawing of conclusions based on the results of interpretation of various literature sources that have been analyzed. According to Miles, Huberman, and Saldaña (2014), qualitative data analysis is carried out interactively and continues continuously until the data reaches a saturation point. By using content analysis techniques, this research is expected to be able to produce a deep understanding of the role of Muhammadiyah in the development of digital literacy in Islamic Religious Education in the digital era.

3. FINDINGS AND DISCUSSION

Finding

Table 1. Research Findings

Yes	Focus of Findings	Research Findings
1	Digitization of PAI learning	Muhammadiyah has integrated digital media and platforms in Islamic Religious Education learning such as LMS, learning videos, educational applications, and online learning
2	Muhammadiyah's digital da'wah	Muhammadiyah utilizes social media, websites, YouTube, and other digital platforms as a medium for moderate Islamic da'wah
3	Strengthening digital literacy	Digital literacy is developed to improve the ability of students and the community to understand and filter religious information
4	Strengthening Islamic digital ethics	Muhammadiyah instills the values of tabayyun, responsibility, politeness, and social media ethics in the use of digital technology
5	The role of PAI teachers	Teachers act as facilitators of digital learning and supervisors of the use of digital media in an educational manner
6	Digital-based organizational governance	Muhammadiyah uses digital applications such as Sicara, NotulenMu, and SimasMuh in the management of organizational administration
7	The role of the autonomous organization of Muhammadiyah	Aisiyah develops digital-based religious education programs and Islamic digital literacy movements
8	Formation of religious character	Digital-based PAI learning helps to form religious, creative, and responsible character in students
9	Strengthening moderate Islam	The use of digital media is used as a means of spreading moderate Islamic values and tolerance
10	Obstacles to digital literacy implementation	Obstacles are still found in the form of limited infrastructure, internet access, technological capabilities, and human resources

Based on the results of the literature study that has been conducted, it was found that Muhammadiyah has a considerable role in the development of digital literacy in Islamic Religious Education in the digital era. This role can be seen through various educational, da'wah, and organizational development activities that utilize digital technology as the main medium in the dissemination of Islamic information and learning. Muhammadiyah utilizes technological developments as a means to expand access to Islamic education as well as strengthen the spread of progressive Islamic values in the midst of modern society. The results of the study show that Muhammadiyah educational institutions have begun to integrate digital literacy in the learning of Islamic Religious Education through the use of various media and digital platforms. The use of Learning Management System (LMS), learning videos, educational applications, and online learning media helps the learning process become more interactive and easy for students to understand. Digital-based learning also makes students more active in participating in learning and facilitates access to religious materials in various learning situations.

The findings of the study also show that Muhammadiyah actively uses digital media as a means of moderate Islamic da'wah. Digital da'wah is carried out through social media, official websites,

YouTube channels, and various other digital platforms. The content conveyed generally contains the values of tolerance, religious moderation, social media ethics, and progressive Islamic teachings. The use of digital media is able to expand the reach of Muhammadiyah's da'wah to the public, especially the younger generation who actively use social media in their daily lives. In addition, this study found that Muhammadiyah also instilled Islamic digital ethics in the use of digital media. Strengthening digital ethics is carried out through the cultivation of tabayyun values, responsibility, honesty, and politeness in social media. Digital ethics education is seen as important to build a healthy and civilized digital culture in an Islamic education environment. Students are directed to not only be able to use technology, but also to be able to use digital media wisely and responsibly.

The results of the next study show that Islamic Religious Education teachers have an important role in the development of digital literacy. Teachers function as facilitators who guide students in the use of digital media in an educational manner. In the learning process, teachers use various digital media such as educational videos, learning applications, and online platforms to increase the effectiveness of Islamic Religious Education learning. Teachers also help students understand how to filter religious information obtained through the internet so that they are not easily influenced by invalid information. Muhammadiyah is also found to have developed organizational governance based on digital technology. The use of digital applications such as Sicara, NotulenMu, and SimasMuh helps the management of organizational administration to be more effective, orderly, and transparent. In addition, Muhammadiyah conducts training and assistance to organizational administrators to improve digital literacy skills in the operation of technology-based administrative systems. These efforts show that strengthening digital literacy is not only applied in the field of education, but also in the management of the organization as a whole.

This research also found that Muhammadiyah autonomous organizations, such as Aisyiyah, have contributed to the development of digital-based religious education. Aisyiyah develops digital-based religious education programs through Islamic digital literacy activities, community development, and technology-based tahfiz house movements. The program aims to improve religious understanding as well as people's digital literacy skills, especially women and the younger generation. The implementation of digital-based Islamic Religious Education learning was also found to have an effect on the formation of students' religious character. The use of digital media in learning helps students understand Islamic values in a more interesting and easy-to-understand way. In addition to improving digital literacy skills, technology-based learning also helps to form religious, tolerant, creative, and responsible attitudes in the use of digital media. However, the results of the study show that the implementation of digital literacy in Islamic Religious Education still faces several obstacles. These obstacles include limited technological infrastructure, uneven internet access, limited digital learning devices, and low digital literacy skills among some teachers and students. In addition, the limitation of human resources in the management of digital media is also a challenge in optimizing the development of digital literacy in Islamic Religious Education within Muhammadiyah.

Discussion

The development of digital technology has brought great changes in the world of Islamic education, including in the learning of Islamic Religious Education. Muhammadiyah has shown a good enough adaptability in dealing with these changes by starting to use technology as part of the educational process. The use of digital media in learning makes the learning process more flexible and in accordance with the needs of the current generation who are very close to technology. The presence of technology is no longer seen as a mere complement, but has become an important part in supporting the effectiveness of learning. This condition shows that Islamic education continues to move with the times without abandoning the basic values of Islam. This is in line with the study of Juliani et al. (2025) which explains that the transformation of the digital literacy-based PAI curriculum is able to create learning that is more relevant, interactive, and in accordance with the needs of students in the modern era.

The development of digital literacy in Islamic Religious Education also shows a change in perspective on the learning process. Religious education no longer only emphasizes mastery of the material, but also on the ability of students to understand and filter information critically. This ability is important because students live in the midst of a very fast and difficult to limit flow of digital information. In situations like this, digital literacy helps students not to easily receive information without a verification process first. In addition, digital literacy skills also help students to be wiser in using social media and other digital platforms. This condition is supported by research by Setiawan et al. (2023) which states that digital literacy competencies have a positive impact on the quality of learning and character formation of students in the Islamic education environment.

The use of digital media in PAI learning also makes the learning process more interesting and not monotonous. The use of learning videos, audio-visual media, educational applications, and online learning platforms is able to increase student involvement in the learning process. This situation shows that the digital-based learning approach is closer to the characteristics of the younger generation who are used to obtaining information through digital media. Religious learning that was previously considered boring began to change to be more interactive and communicative. In addition to helping improve student understanding, digital media also provides space for students to learn independently through various learning resources available online. This is in accordance with the research of Nur Halizah Palem et al. (2025) who explained that the use of technology is able to increase student motivation and interactivity in Islamic Religious Education learning.

Strengthening digital literacy in indirect learning also helps improve students' critical thinking skills. The ability to think critically is an important need in the digital era because students are faced with various information that is not necessarily correct and in accordance with Islamic values. Through digital literacy-based learning, students are directed to be more selective in receiving information, especially religious information circulating on social media. They are not only taught to receive information, but also to understand how to evaluate and verify the content of the information. Habits like this help students to be more careful in using digital media. Research by Panjaitan et al. (2024) also shows that digital literacy has a relationship with the development of students' critical thinking skills in the learning process.

On the other hand, the development of digital literacy in Islamic Religious Education does not only focus on the technical ability of using technology. Muhammadiyah also pays great attention to strengthening Islamic digital ethics in the use of social media and other digital platforms. Values such as tabayyun, responsibility, politeness, and honesty are important parts of building a healthy digital culture. This approach suggests that the use of technology must remain within the corridor of religious and moral values. The presence of technology should not make students lose their ethics in interacting in the digital space. Therefore, strengthening digital ethics is one of the important parts of digital-based PAI learning. This is in line with the research of Yulastri et al. (2025) which explains that the integration of Islamic digital literacy is able to increase students' ethical awareness in the use of social media.

The strengthening of Islamic digital ethics shows that religious education has an important function in preventing the negative impact of digital media. In the midst of the rampant hoaxes, hate speech, and content that is not in accordance with religious values, Islamic Religious Education is present as a moral fortress for students. Islamic digital literacy helps students understand that activities in digital media still require moral and spiritual responsibility. Thus, digital media is not only understood as a means of communication, but also as a space for the formation of religious character and identity. This approach makes religious learning more relevant to the daily lives of students. This is supported by research by Ni'mah and Bashori (2025) which explains that digital literacy is able to strengthen students' religious understanding more holistically in the digital era.

The success of digital literacy development in Islamic Religious Education is also inseparable from the role of teachers as learning facilitators. Teachers are no longer only the presenters of the material, but also the guides in the use of technology in an educational and responsible manner. Teachers' ability to utilize digital media greatly determines the quality of learning that takes place in the classroom.

Teachers who have good digital literacy competencies tend to find it easier to create creative learning that suits the needs of students. In addition, teachers also have a responsibility to help students understand how to use digital media in a healthy and productive way. The importance of strengthening teacher competence is also seen in the research of Muhajir et al. (2023) which shows that digital literacy training is able to improve the ability of Muhammadiyah teachers to utilize technology as a learning medium.

The digital transformation carried out by Muhammadiyah is not only seen in the learning process, but also in the management of educational organizations. The use of various digital applications in organizational administration and communication shows that Muhammadiyah is trying to build a more modern and adaptive education system. The use of technology helps the management of the organization to be more effective, transparent, and accessible. In addition, strengthening social media management also helps Muhammadiyah educational institutions build better communication with the community. The presence of social media is not only used as a means of information, but also as a medium to build public trust in Islamic educational institutions. This is in accordance with the research of Rahmanto et al. (2025) who explained that strengthening digital literacy and social media management can improve the quality of Muhammadiyah school communication management in the digital era.

The use of digital media also shows how Muhammadiyah is able to develop Islamic da'wah that is closer to the younger generation. Da'wah is no longer only carried out through conventional methods, but also through social media, websites, and various other digital platforms. This approach makes Islamic messages more accessible to the wider community, especially the younger generation who are active in the digital world. In addition to expanding the reach of da'wah, digital media also helps Muhammadiyah spread moderate, tolerant, and progressive Islamic values. The use of technology in da'wah shows that digital developments can be used as a means of spreading positive values in society. This is in line with the research of Palguna et al. (2025) which explains that Muhammadiyah continues to innovate in education and da'wah in order to produce a superior generation that is able to face global challenges.

The development of digital literacy in Islamic education also shows the importance of family involvement in shaping the digital culture of students. Digital literacy education is not only the responsibility of schools, but also requires parental support in the family environment. Parental assistance in the use of technology helps children understand how to use digital media more safely and productively from an early age. In addition, the integration of Islamic Religious Education in the development of digital literacy helps children understand that the use of technology must still be based on religious values. Family involvement is important because the family environment is the first place to form children's character. This condition is supported by research by Hasanah (2024) who explains that the integration of Islamic Religious Education in the development of early childhood digital literacy helps build the ability to use technology that is still based on Islamic values.

Although the development of digital literacy in Islamic Religious Education shows many positive impacts, there are still some challenges in its implementation. Limited technological infrastructure, uneven internet access, and digital skills of some teachers and students are obstacles that are still often found. In addition, not all educational institutions have adequate facilities to support digital-based learning optimally. The difference in the ability to use technology also causes the digital adaptation process to run unevenly in each school. These challenges show that digital transformation in Islamic education still requires support for facilities, training, and mentoring on an ongoing basis so that its implementation can run more optimally.

Overall, the development of digital literacy in Islamic Religious Education shows that Muhammadiyah has an important role in building Islamic education that is adaptive to the times. The use of technology is not only directed to improve the quality of learning, but also to strengthen religious character, digital ethics, and the spread of moderate Islamic values in the midst of a digital society. The integration between technology and Islamic values shows that Islamic education is still able to develop

without losing its basic identity. With this approach, Muhammadiyah shows that technological developments can be used as a means of building a generation of Muslims who are religious, critical, and able to face the challenges of the digital era wisely.

4. CONCLUSION

Muhammadiyah's role in the development of digital literacy in Islamic Religious Education shows a significant contribution in supporting the transformation of Islamic education in the digital era. The results of the study show that Muhammadiyah is able to utilize digital technology as a means of learning, da'wah, strengthening religious character, and developing more modern and adaptive governance of educational organizations. The use of digital media in Islamic Religious Education learning helps to increase learning effectiveness, student involvement, critical thinking skills, and more contextual religious understanding in accordance with the times. In addition, the integration of Islamic digital literacy also plays an important role in shaping social media ethics through the cultivation of tabayyun values, responsibility, politeness, and wise use of technology. Muhammadiyah also shows good adaptability through the development of digital da'wah, strengthening the competence of teachers, and the use of technology-based administrative systems in the management of educational institutions. However, the implementation of digital literacy in Islamic Religious Education still faces several obstacles, such as limited technological infrastructure, uneven internet access, and digital literacy skills of some teachers and students that still need to be improved. However, the development of digital literacy still has a positive impact in creating Islamic education that is more relevant, innovative, and responsive to the needs of the digital society. Practically, this research implies that Muhammadiyah educational institutions need to continue to strengthen digital literacy training, develop Islamic digital ethics, and provide adequate technological facilities so that the implementation of digital-based learning can run optimally and sustainably. In addition, further research is recommended to examine the development of digital literacy in Islamic Religious Education with a broader approach, such as the influence of digital culture, the effectiveness of technology-based learning media, the readiness of human resources, and the strengthening of students' religious character in the era of digital transformation so that it can provide a more comprehensive picture of the development of Islamic education based on digital literacy.

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