

Islamic Education in the Digital Age: Challenges and Adaptation Strategies

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Abstract

Islamic education in the digital age has undergone major changes with the introduction of technology into the teaching and learning process, but it has also given rise to problems such as unequal access to devices and the internet, low digital literacy among some educators, and the use of unverified online teaching materials. This study aims to explore these challenges and formulate adaptation strategies to maintain the relevance and quality of education using a descriptive-analytical library research method using a descriptive-analytical approach conducted systematically through literature searches in scientific databases (e.g., Google Scholar, DOAJ, ERIC, Garuda/SINTA) using keywords related to the digitization of Islamic education, followed by the selection of sources based on relevance, recency (mainly within the last 10 years), academic credibility (peer-reviewed journal articles, scientific books/book chapters, proceedings, theses/dissertations), as well as supporting policy documents and official institutional reports. This was followed by an evaluation of source quality (publisher reputation, clarity of methods, consistency of findings, traceability of references) and thematic content analysis to map issues of access, educator competence, value-based curriculum, and the collaboration ecosystem. The results of the study show that digitization opens up opportunities to improve accessibility and variety of teaching media, but requires the strengthening of an adaptive curriculum based on Islamic values, improving teachers' digital literacy competencies (platform selection, learning design, source verification, digital ethics), and collaboration between schools, parents, and the community so that digital learning does not run "alone"; Therefore, it is recommended that there be continuous training for educators, integration of religious values in technology-based learning, and equitable access to technology in all regions.

Keywords: *Islamic education, digitization, technology adaptation, value-based curriculum*



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INTRODUCTION

The development of digital technology has had a significant impact on various aspects of life, including education. This impact is not only limited to changes in how people access information, but also to the methods and platforms used in education. Islamic education, as an integral part of the education system in Indonesia, has not escaped the influence of this digital transformation. In Indonesia, various national reports and surveys consistently highlight regional disparities in internet connectivity and device availability,

which means the benefits of digital learning are not experienced equally across regions. At the school level, report that the implementation of mobile applications and e-learning platforms in Islamic Religious Education (IRE) at SMK Negeri 2 can improve learning effectiveness, illustrating both the promise of digitalization and the readiness challenges that accompany it. The digital era offers various opportunities to improve the quality and accessibility of Islamic education, but it also presents challenges that must be addressed wisely. The use of technology can open up space for Islamic education to be more inclusive and flexible, but the challenge of maintaining the authenticity of Islamic teachings and values must still be considered. In this context, it is important to understand the dynamics of the development of Islamic education in the digital era, the challenges faced, and the adaptation strategies that can be applied to maintain the relevance and quality of Islamic education in the future.

Research by (Suwahyu, 2024) reveals that Islamic education has undergone substantial changes due to advances in digital technology. These changes include modifications to the curriculum, teaching strategies, and the role of educators. Digitalization encourages cross-sector collaboration, innovative teaching strategies, and the incorporation of digital literacy in Islamic education. With technology, learning has become more interactive and accessible to more people, but concerns have also arisen regarding the quality of materials available online. In addition, issues such as unequal access to technology, low levels of digital literacy, and the spread of unreliable Islamic material continue to be significant obstacles. Therefore, it is important for Islamic educational institutions to have systems in place that ensure the quality of digital learning is in line with religious values.

In facing these challenges, human resource development, competency- and character-based curriculum innovation, and enhancing the role of educators, families, and communities are recommended adaptive solutions. The application of technology must be balanced with strengthening the spiritual and moral aspects of students in order to maintain balance. Technology can be used to enrich the learning process, but it should not replace the essence of Islamic values in learning. Therefore, it is important for all stakeholders to ensure that the use of technology does not only focus on digital advancement but also supports the strengthening of students' character and spirituality. With the right approach, Islamic education can continue to be of high quality, relevant, and help create a generation that is morally and intellectually mature in the digital age, while maintaining the values contained in Islamic teachings.

In addition, research by (Nijo et al., 2024) highlights the importance of adaptation strategies in Islamic Religious Education (IRE) learning at SMK Negeri 2. This study aims to explore the adaptation strategies applied in IRE learning in the era of technological disruption. The results of the study indicate that the application of appropriate adaptation strategies can increase the effectiveness of learning and the relevance of teaching materials to the times. The use of mobile applications and e-learning platforms for PAI learning can be one effective adaptation solution. By using technology, PAI learning can not only reach more students, but also increase student interest in the material being taught. This shows that with

the right use of technology; Islamic religious education can be more easily accepted by the younger generation who were born and raised in a digital environment.

Furthermore, research by (Rahayu et al., 2025) proposes strategies such as utilizing digital platforms for e-learning, developing curricula that balance modern technology and Islamic values, and improving teachers' digital literacy skills. The appropriate use of technology can enrich the learning experience and increase student engagement in the learning process. These strategies are expected to address the challenges faced by Islamic education in the digital age and ensure that Islamic education remains relevant and of high quality. This approach will enable Islamic education to develop in line with technological developments, without losing its essence as a profound, value-based, and character-building education. Therefore, updates to the curriculum and training for educators must be a top priority in efforts to improve the quality of Islamic education in the digital age.

In the context of Islamic education management, research by (Khasanah, 2024) shows that the main challenges include uneven digital infrastructure, low digital literacy, and cultural resistance to change. The inequality in access to and utilization of technology in various regions adds to the challenges of implementing digital-based Islamic education. In addition, cultural resistance to change in Islamic education is often an obstacle, especially in regions that tend to maintain traditional methods. However, there are significant opportunities in terms of management efficiency, expansion of access to education, and integration of Islamic values in the digitization process. With the support of the government and educational institutions, these challenges can be overcome and provide new opportunities for the development of better Islamic education. More intensive collaboration between relevant parties is needed to ensure that every aspect of Islamic education can adapt to technological developments without sacrificing spiritual and moral goals.

In addition, research by (Izzah et al., 2025) examines the challenges and strategies for improving teacher competence in Islamic education, particularly in balancing technological adaptation and spiritual values. This study found that the use of platforms such as interactive education based on Islamic values, as well as collaboration between schools, parents, and the community, are effective solutions in improving teacher competence. Strategies for developing teacher competencies in digital literacy are crucial to ensure that teachers not only master technology but are also able to integrate it effectively into the learning process based on Islamic values. With the right strategies, Islamic education will remain relevant and contribute to shaping a generation that is intelligent, moral, and adaptable to the developments of the times.

From these various studies, it can be concluded that Islamic education in the digital age faces complex challenges but also has great opportunities for development. The changes brought about by digitalization open up new possibilities in the educational process, but also require careful adaptation to ensure that Islamic values are preserved. It is important for all stakeholders to work together in formulating and implementing appropriate adaptation strategies to ensure that Islamic education remains high-quality and relevant amid developments in digital technology. The involvement of all parties, including teachers,

parents, and the community, is very important for the successful implementation of these adaptation strategies.

In order to face challenges and take advantage of opportunities in the digital age, a holistic and integrated approach is needed. This includes developing an adaptive curriculum, improving digital competencies for educators and students, and utilizing technology wisely to support the learning process. With this integrated approach, Islamic education can utilize technology to enrich the learning experience, while maintaining the essence of moral and spiritual values. Thus, Islamic education can continue to play a role in shaping a generation that is not only intellectually intelligent, but also strong in spiritual and moral values. In closing, it is important to continue research and development in the field of Islamic education in the digital era. This research will ensure that Islamic education is not only able to survive, but also thrive and contribute positively in facing the challenges of the times. The government and educational institutions must continue to update policies and learning methods to ensure that Islamic education remains relevant to the times. Thus, Islamic education can continue to be an important pillar in shaping the character and morals of the nation amid globalization and digitalization. Adapting to these changes is essential to create a future generation that is able to keep pace with technological developments without sacrificing the noble values of Islam.

METHODS

This study uses a qualitative approach with a descriptive-analytical type of library research. This method was chosen to explore and analyze in depth the phenomenon of Islamic education in the digital age through a review of various relevant scientific literature. The primary data sources in this study came from published scientific journal articles, particularly research discussing the transformation, challenges, and adaptation strategies of Islamic education in the digital age. Secondary data sources were obtained from books, research reports, and educational policy documents related to the digitization of Islamic education. Data collection techniques were carried out through systematic documentation and recording of important information contained in the literature. The researcher identified, classified, and categorized data based on the main themes, which included the impact of digitization, challenges faced, and adaptation strategies in Islamic education.

Data analysis in this study used content analysis with a descriptive-comparative approach to identify patterns, themes, and important findings from various sources of literature reviewed. The analysis process began with data reduction, namely sorting and simplifying raw data from various sources of literature to focus on information relevant to the research problem formulation. Next, the data is presented in the form of a systematic descriptive narrative to describe the condition of Islamic education in the digital era, the challenges faced, and the various adaptation strategies that have been implemented or recommended by previous researchers. The final stage is drawing conclusions and verification, where researchers synthesize findings from various literature to produce a comprehensive understanding of the dynamics of Islamic education in the digital age. To

ensure the validity and reliability of the research, source triangulation was carried out by comparing and confirming information from various different literature, as well as conducting member checking through discussions with Islamic education experts to validate the interpretations and conclusions generated from the data analysis.

FINDINGS AND DISCUSSION

The Impact of Digitalization on Islamic Education in Indonesia

Digitalization has brought about significant changes to the Islamic education system in Indonesia. One of the most striking impacts is the transformation in the delivery of teaching materials. Previously, Islamic education was generally conducted conventionally, through face-to-face interaction between teachers and students in the classroom. However, with advances in technology, Islamic education has now begun to shift to an online learning model, which allows teaching materials to be accessed through various digital platforms. As technology continues to develop, access to broader and faster information can be achieved, making learning more flexible and accessible to students in various regions of Indonesia, including those in remote areas. This is in line with the findings of (Agista, 2025) which states that the use of technology in education provides easy access to information for people across the country.

However, despite these conveniences, the digitization of Islamic education also presents a number of challenges. One of them is the uneven access to technology, especially in areas with limited infrastructure. In areas that still struggle with internet connectivity and adequate technological devices, digital-based learning poses a significant challenge. According to research by (Hamilaturroyya & Adibah, 2025) this inequality creates a gap between schools in big cities and schools in remote areas. This has caused Islamic education in these areas to lag behind, given that there are still many students who cannot access learning materials provided through digital platforms. This condition requires serious attention so that digitization does not widen the social gap in terms of education. In addition, the quality of materials available on digital platforms is also an issue that needs attention. Not all materials circulating in cyberspace can be guaranteed to be valid, especially those related to religious teachings. It is not uncommon for some Islamic educational materials to circulate that do not comply with the standards of true Islamic teachings or even contain misleading information. The abundance of unverified information risks confusing students in choosing the right source of material. Therefore, Islamic educational institutions need to verify the material circulating in the digital world and provide teaching materials that are in accordance with authentic Islamic principles.

(Khofifah, 2024) also found in their research that the digitization of Islamic education has an impact on teaching methods and interactions between teachers and students. Technology facilitates more flexible learning, where students can choose the time and place to study, adjusting to their own pace and style. Digital platforms such as e-learning and interactive learning applications make it easier for students to learn in a more interesting way that suits their interests. For example, the use of videos, interactive quizzes, and online

discussion forums allows students to be more involved in the learning process. This opens up opportunities to improve the quality of Islamic education in Indonesia, given that conventional learning methods are sometimes unable to attract the interest of the younger generation, who are increasingly accustomed to technology.

However, another challenge that arises is the readiness of educators to face these changes. Research by (Inayah et al., 2025) shows that many Islamic education teachers are not yet fully prepared to use technology in teaching. Most educators are still limited to the use of basic digital tools, and lack an understanding of the potential of technology to improve the quality of learning. One of the contributing factors is the lack of training or professional development programs that focus on digital literacy for teachers. Therefore, the development of digital competencies among educators is very important. Continuous training and digital skills development must be a priority so that teachers can make optimal use of technology in delivering Islamic education material to students. Research further indicates that technology changes teaching methods and teacher–student interaction by supporting multimedia learning (videos, interactive quizzes, discussion forums) that may be more appealing to digitally native students.

In addition, digitization also has a positive impact on Islamic education management. With technology, educational administrative processes such as student data management, assessment, and academic reporting become more efficient. The use of Learning Management Systems (LMS) allows teachers to monitor student progress in real-time, provide instant feedback, and assess assignments more systematically. Research by (Muslim, 2024) states that technology enables more structured and objective evaluation, which facilitates the monitoring of education quality. This increases transparency in the Islamic education system and helps educational institutions to make improvements more quickly if deficiencies are found in the learning process. However, the application of technology in Islamic education also requires changes to the curriculum. The current curriculum needs to be updated to be more relevant to the needs of the times and to be able to integrate technology with Islamic values. The development of a competency-based curriculum that not only prioritizes religious knowledge but also includes digital skills is very important. This shows that the Islamic education curriculum must keep up with the times and enable students to master digital competencies while still understanding Islamic teachings well.

One of the biggest challenges in the digitization of Islamic education is how to maintain a balance between the use of technology and the strengthening of spiritual and moral aspects. With the development of technology, there is concern that the religious values contained in Islamic teachings could be eroded. Therefore, Islamic education must continue to integrate spiritual values into every aspect of learning, both face-to-face and online. Islamic education teachers must play an active role in ensuring that technology is used to enrich learning, but does not replace the essence of Islamic values themselves. As a researcher, (Taufik, 2020) emphasizes the importance of educators in guiding students to not only focus on academic aspects but also on the formation of good character in accordance with religious teachings.

In addition, it is important for all stakeholders, including the government, educational institutions, and families, to work together to ensure that the use of technology in Islamic education does not only focus on digital advancement but also supports the strengthening of the character and morals of students. This needs to be done so that the young generation who are shaped by Islamic education in the digital era are not only intellectually intelligent but also have good morals, in accordance with religious teachings. Research by (Aulia & Yuliyanti, 2024) states that the integration of technology and character education is essential for students to adapt to the digital world without losing their moral and spiritual compass.

Overall, digitization has a significant impact on Islamic education, opening up opportunities and challenges that need to be addressed wisely. Although digitization offers ease of access to information and learning, issues of unequal access, unverified material quality, and educators' readiness to adapt to technology remain obstacles. Therefore, an appropriate strategy is needed to integrate technology with Islamic education so that this education remains relevant and of high quality. This includes efforts to develop competency-based curricula, digital training for educators, and strengthening the character and morals of students in accordance with Islamic teachings.

Adaptation Strategies in Islamic Education in the Digital Age

In facing the digital era, innovation in the Islamic Religious Education (PAI) curriculum is a very important strategic step to ensure the relevance and quality of learning. Research by (Neliwati, 2024) emphasizes that the PAI curriculum must be able to integrate Islamic values with information and communication technology (ICT) to meet the needs of the times. This approach aims to ensure that the curriculum not only teaches religious knowledge but also prepares students to face digital challenges without losing the essence of Islamic teachings. This innovation not only involves changes in teaching materials but also in the methods and media used to teach religious principles to students. In this way, Islamic education in the digital age can maintain its relevance and ease of access to information while remaining faithful to fundamental religious teachings. Therefore, Islamic educational institutions need to periodically update their curricula to keep pace with technological developments and the needs of the digital world.

Improving digital literacy competencies among Islamic Education (PAI) teachers is one of the main strategies for adapting Islamic education in the digital age. (Munawir et al., 2024) shows that PAI teachers demonstrate varying levels of technological proficiency, ranging from basic to advanced, which leads to creative use of technology in teaching. To ensure that these competencies develop properly, the Teacher Working Group (KKG) program plays an important role in providing technology-based training. With appropriate training, PAI teachers can utilize various digital platforms to enhance interaction with students and deliver material in a more engaging and relevant manner. This training program must also cover mastery of digital devices and applications that can improve the learning process, both online and offline, as well as enhance their understanding of using

social media as a learning tool. This highlights the importance of sustainability in digital literacy training for teachers to improve teaching effectiveness.

The integration of technology in PAI learning can improve accessibility and student engagement more effectively. Research by (Alfyn et al., 2025) states that the use of e-learning platforms, mobile applications, and social media in PAI learning provides great benefits in deepening students' understanding of religious values. By utilizing technology, students can more easily access teaching materials that were previously limited to traditional classrooms. However, this study also shows that the use of technology must be accompanied by caution, especially regarding the validity of information circulating in cyberspace and the negative influence of social media on students' morals. Therefore, careful supervision and selection of materials are needed to ensure that only information that is accurate and in accordance with Islamic teachings is accessible to students. Along with technological developments, there needs to be adjustments in teaching strategies so that they do not only rely on digital devices, but also align with the principles of Islamic teachings.

The above research emphasizes the importance of strengthening an Islamic values-based curriculum in the face of the digitization of education. To that end, the strategies that need to be implemented include the development of digital literacy that prioritizes Islamic ethics and morals, as well as the development of interactive digital learning media that is in accordance with Islamic teachings. The implementation of an Islamic values-based curriculum should not only focus on the content of the material, but also pay attention to the manner of delivery, which must be in accordance with religious morals and teachings. Collaboration between schools, parents, and the community is essential in optimizing the strengthening of this curriculum so that Islamic education remains relevant amid rapid digital developments. Through this approach, Islamic education can ensure that students not only understand religious teachings but also apply them in their daily lives in an increasingly dynamic digital era. It also proposes an innovative PAI curriculum model that integrates digital technology with local wisdom values. This model aims to improve the quality of PAI learning by utilizing technology that is relevant to the local context and culture of Indonesian society. With this approach, the curriculum can be adapted to the needs and challenges of each environment without compromising the Islamic values contained in the learning process. In addition, the technology used in learning must be able to support the strengthening of students' character, not only introducing them to religious knowledge, but also shaping them into individuals with integrity and good personality. The implementation of this model is expected to strengthen PAI teaching in a more effective and efficient manner, as well as relevant to the times.

(Sihotang & Ameylia, 2024) emphasize the importance of developing interactive digital learning media as a strategy to improve the quality of PAI learning in the digital age. This learning media includes mobile applications, learning videos, and interactive modules designed to meet the needs of students in the digital age. One of the advantages of interactive learning media is its ability to increase student motivation in learning and deepen their understanding of the subject matter. The development of this media must be tailored to

the characteristics of students, who increasingly prefer technology-based learning. In addition, engaging learning media can increase student involvement in the learning process, both individually and in groups. Thus, this interactive media is key to improving the quality of Islamic education in the digital age.

Continuing education for Islamic education teachers in the field of information and communication technology (ICT) is essential to improve their competence. (Lukman et al., 2024) dalam states that this training can help teachers integrate technology into learning and improve teaching effectiveness. Through continuous training, teachers will be better prepared to implement technology that supports the teaching and learning process. This training not only covers the use of digital devices, but also the development of digital content in line with Islamic teachings, as well as technology-based evaluation techniques. The application of technology in PAI learning must be balanced with a deep understanding of religious teachings so that technology is used as a tool to support teaching, not as a substitute for teaching itself. Close collaboration between schools, parents, and the community is essential to ensure the successful adaptation of Islamic education in the digital age. Synergy between these three parties can create a learning environment conducive to the development of students' digital literacy. This collaboration involves intensive communication, joint training, and collective monitoring of student development. With good cooperation, schools can provide training to parents on the importance of supervising the use of technology at home. In addition, the community can also play an active role in supporting Islamic religious education by providing facilities and resources that support the use of technology in learning. This will strengthen Islamic values in digital-based education.

Regular evaluation and curriculum development are very important strategies to ensure that the PAI curriculum remains relevant to technological developments and student needs. Curriculum evaluation is carried out through learning data analysis, interviews with teachers, and surveys of students. This evaluation serves to identify weaknesses and strengths in the existing curriculum so that more appropriate corrective measures can be taken. Based on the evaluation results, a new curriculum can be developed to address the challenges of the digital age, taking into account the appropriate integration of technology in teaching materials and methodologies. With this approach, Islamic education can continue to evolve and keep pace with rapid technological developments. The application of technology in learning assessment is essential to improve the efficiency and objectivity of evaluation in Islamic education. The use of learning management systems (LMS) and digital assessment applications allows teachers to conduct assessments more quickly and efficiently, providing real-time feedback to students. This system helps teachers to focus more on student development and identify areas that need more attention. In addition, technology-based assessment allows students to obtain more transparent and fair results. This not only increases student motivation to learn, but also optimizes the management of evaluation in PAI learning.

Table 1: The Impact of Digitalization on Islamic Education

Subheading	Findings	Description
Impact of Digitalization on Islamic Education	Changes in the Delivery of Learning Materials	Digitalization enables the online delivery of Islamic education materials, allowing for more flexible and accessible learning, even in remote areas.
The Impact of Digitalization on Islamic Education	Inequality in Access to Technology	There are disparities in access to technology in various regions, hindering the implementation of digital-based learning in areas with limited infrastructure.
The Impact of Digitalization on Islamic Education	Unverified Material Quality	Much of the material available online cannot be verified for accuracy and risks confusing students, especially when it comes to Islamic teachings.
The Impact of Digitalization on Islamic Education	Educators' Readiness to Adapt to Technology	Many Islamic education teachers are not yet fully prepared to utilize technology in teaching, resulting in low technology utilization in the classroom.
The Impact of Digitalization on Islamic Education	Use of Digital Platforms	The use of e-learning platforms and mobile applications is effective in deepening students' understanding of religious values, although supervision is needed regarding the accuracy of the material.

Table 2: Development of Teachers' Digital Literacy Competencies

Subtitle	Findings	Description
Development of Teachers' Digital Literacy Competencies	Teacher Training and Competency Development	Teachers need ongoing digital literacy training to optimize the use of technology in teaching and improve interaction with students.
Development of Teachers' Digital Literacy Competencies	The Role of Teacher Working Groups (KKG)	The Teacher Working Group (KKG) program plays a role in providing technology-based training to improve teachers' digital competencies.
Teacher Digital Literacy Competency Development	The Importance of Continuous Training	Continuing education for teachers in the use of technology is essential to prepare them to face the challenges of digital teaching.

Table 3: Integration of Technology in PAI Learning

Subtitle	Findings	Description
Integration of Technology in PAI Learning	Improved Accessibility and Student Engagement	Technology integration makes it easier for students to access teaching materials more flexibly, increasing their engagement in PAI learning.
Technology Integration in PAI Learning	Challenges in Using Technology	The use of technology must be accompanied by caution regarding the validity of information circulating in cyberspace and the negative influence of social media on students.

CONCLUSION

Islamic education in the digital age faces major challenges related to technology integration, which must remain in line with the religious values contained in Islamic teachings. Although digitization provides opportunities to improve accessibility and interactivity in learning, disparities in access to technology, the quality of unverified materials, and the readiness of educators to adapt to technology are significant obstacles. Therefore, it is important to implement adaptation strategies that involve the development of an Islamic values-based curriculum, digital literacy training for teachers, and increased collaboration between schools, parents, and the community. With a holistic and integrated approach, Islamic education can utilize technology to enrich the learning experience without sacrificing the essence of moral and spiritual values. The success of adapting Islamic education in the digital age depends heavily on the cooperation of all stakeholders and a commitment to continuously improve the quality of education so that it remains relevant to the times without losing the deep foundations of Islamic teachings.

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