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INTERNALIZING DIGITAL TECHNOLOGY IN ISLAMIC EDUCATION

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Abstract

This study analyzes the integration of digital technology into Islamic education to address moral challenges in the digital era. Employing a literature review with content analysis, this research evaluates primary and secondary sources, including academic journals, government reports, and authoritative references. The findings reveal that digital technology, such as augmented reality (AR) and artificial intelligence (AI), offers transformative opportunities for Islamic education by enhancing learning engagement, accessibility, and interactivity. However, the integration of these tools poses risks, including diminished moral values, reduced religious literacy, and dependency on technology, which require strategic interventions. This study emphasizes the importance of aligning technological advancements with Islamic principles to uphold spiritual and ethical integrity while fostering innovation in teaching and learning methods. Recommendations include the development of technology-based curricula that harmonize religious and scientific knowledge, training programs for educators to effectively utilize digital tools, and policies to mitigate negative impacts on student character and behavior. Furthermore, the application of AR in Islamic studies and AI-based personalized learning provides immersive and meaningful educational experiences, fostering intellectual and moral growth. This research contributes insights into leveraging digital tools to adapt Islamic education to the demands of the digital age while maintaining its foundational values. Future studies are encouraged to explore the long-term impacts of technology integration across various educational levels to ensure sustainable and effective Islamic education reform.

Keywords Digital Technology, Islamic Education, AR, AI, Curriculum Integration.

INTRODUCTION

The digital age has transformed communication and education, including Islamic education, through the integration of digital platforms such as social networking and online learning. However, these changes also bring challenges, such as an increase in unethical speech and misinformation, requiring a balance between technological advancement and Islamic ethical values (Krasnova et al., p. 115, 2022). Religious character education should not be confined to strengthening personal values. It should additionally pave the way for comprehending and addressing global challenges through an inclusive religious perspective (Siswantara & Supriyadi, 2024).

Since 2019, the government under Minister Muhajir Effendi has launched a school digitization program to encourage technology-based education across the country in response to the transformation of the Industrial Age 4.0 (Tim Komunikasi Pemerintah Kemenkominfo dan Kementerian Pendidikan dan Kebudayaan, 2019). However, Islamic education still grapples with challenges such as limited infrastructure and cultural resistance, particularly in conservative regions like Madura, where pesantren prioritize preserving traditional values to shield students from the perceived threats of modernization and globalization (Mas'udi, 2023: p. 150). Educators face the need to adapt teaching methods to accommodate digital-native learners who are more engaged with technological tools than traditional approaches (Putri, 2018). Moreover, the COVID-19 pandemic has accelerated the digitalization of education, compelling Islamic institutions to embrace technological advancements to remain relevant (Decuypere et al., 2021).

Although many studies have examined the challenges of Islamic education in the digital era, such as the impact of technology on character education (Putri, (2018, 44)) and the opportunities of online pesantren (Kardi et al., 2023), there is still a gap in understanding the process of internalizing digital technology in the Islamic curriculum. Previous studies tend to focus on the impact of technology in general without in-depth discussion on how Islamic values can be integrated into the use of technology. In addition, this research is important to address the concern that digitalization can bring Western cultural influences that are not in line with Islamic values and weaken local culture and traditional learning methods, as has happened in some pesantren in Indonesia (Yuliati A. S et al., 2024).

This research examines the internalization of digital technology in Islamic education to face moral challenges in the digital era. Children are now more integrated with gadgets and online media, reducing activities that support solidarity and creativity (Putri, p. 44, 2018). Recent studies

highlight the importance of integrating digital technology into Islamic education to enhance educational effectiveness and uphold Islamic values. For example, research by Rachman et al. (Ikhwan et al., 2023).

The main objective of this study is to analyze the process of internalizing digital technology in Islamic education by identifying ways to integrate technology with Islamic values. Integrating general and religious sciences aims to develop individuals with intelligence, strong morals, and spirituality (Vivi Desfita et al., 2024). (Syahputra & Rini, 2021) emphasize that the integration of digital technology into Islamic education is pivotal for cultivating individuals who are both intellectually proficient and morally grounded.

Through this research, it is hoped that Islamic education can be at the forefront of facing the challenges of the digital era while maintaining the integrity of Islamic values. The results of this research are expected to be a reference for developing a technology-based curriculum that is in line with religious values while overcoming the negative impact of technology on student morals. Therefore, Islamic education can provide concrete solutions to overcome the global challenges of the digital era.

METHOD

This research uses a literature study approach with a content analysis research type. This method was chosen to explore and analyze the integration of digital technology in Islamic education from various relevant academic sources. Primary data sources in this research are journal articles that discuss digital technology in Islamic education, and official government reports related to digital education, and authoritative reference books. Secondary data includes supporting articles, previous research results, and popular publications related to the issue of digitalization in Islamic education. This data was obtained from various platforms such as Google Scholar, SINTA-indexed journal databases, and official government websites.

The data was collected through literature searches using keywords such as “Islamic education in the digital era,” “integration of technology and Islamic values,” and “digitalization of Islamic education” on scientific search engines such as Publish or Perish (POP) and Google Scholar. In addition, researchers also utilized access to digital libraries and academic platforms. Data were analyzed using the content analysis method, which involved identifying key themes, patterns of inter-conceptual relationships, and the relevance of the data to the research objectives. The data were

systematically analyzed to evaluate the extent to which Islamic values are integrated into the use of digital technology in Islamic education.

FINDINGS AND DISCUSSION

Findings

The rapid adoption of technology in education requires educational institutions to effectively integrate elements and utilize technological advances to drive innovation and enhance competitiveness in this area (Hidayat et al., 2022). Collaboration among educators, administrators, and policymakers is essential to implement strategies that enhance learning outcomes and institutional effectiveness through technology. Theodorio (2024) pointed out that in recent years, technology has proven to be instrumental in fostering meaningful engagement and collaboration between educators and students, enabling the exchange of ideas and resources for effective learning.

The Concept of Internalising Digital Technology in Islamic Education

Digitalization simplifies administration and education and expands student knowledge but requires appropriate staff skills and the potential for reduced socialization and psychological damage for victims and perpetrators (Hidayat et al., p. 357, 2022). Digital media influences thoughts and perceptions. The Internet promotes Islamic education in Indonesia. Platforms such as Facebook, Instagram, and YouTube have made Islamic teachings more accessible, but learning the Quran and Hadith requires deeper engagement. (Pabbajah et al., p. 126, 2021). Teachers rely on technology to improve their teaching methods but face challenges due to inadequate infrastructure and support. In addition, they are concerned that students are underprepared to use technology for higher-order thinking (Nur Azaliah Mar 2024).

Augmented Reality in Learning the History of Islamic Civilisation: Internalisation Through Virtual Experience

Raja-Yusof et al. (2013) highlighted the importance of digitization of Islamic culture and artifacts go a long way in the preservation of Islamic history and heritage via utilizing intelligence technologies and image recognition algorithms to protect, store, retrieve, and share rare and valuable Islamic documents, manuscripts, texts, and handwritten compositions (Alsulami, 2024). Augmented reality (AR) has created a new creative method so that learning becomes more interesting, interactive, dynamic, contextual, and easier to understand and interpret. AR has two-way information transfer, provides dynamic content, and can give tasks to learners; also, there are

some AR outputs that can be enjoyed by the users, such as video, audio, animation, and 3D objects. The application of AR in the education field gives strong motivation to students in learning subjects, especially for weak students (Yuliharti et al., 2019).

Therefore, Islamic educational institutions have made some changes in the application of digital technology-based learning (cyber system) in the teaching and learning process. Islamic educational institutions have made some changes in the application of digital technology-based learning in the teaching and learning process. The same thing was also stated by Kharismatunisa (2023: 533), that these innovations provide strong evidence that the use of innovative and creative digital learning media can significantly improve the quality of Islamic religious education in today's digital era. This is not only true in religious education, but all learning is also generally applicable in every learning process.

Recently, the presence of affordable smartphones, consistent cellular networks, and an abundance of social media have made people increasingly dependent on technology. Technologies and innovations in the digital era consist of the Cloud, Social Medias, artificial intelligence and robotics, autonomous vehicles, Big Data, the Internet of Things (IoT), Blockchain, 3D printing, material science, nanotechnology, energy storage, and quantum computing. These disruptive innovations and technologies are also fully influencing social, cultural, and political transformations around the world (Noonpakdee et al., 2020).

The findings above can be presented in the form of a table for easier understanding as follows:

Table 1. Contribution of Digital Technology in Islamic Education and Culture

No.	Aspects	Explanation
1.	Digitization of Islamic Culture and Artifacts	Digitization preserves Islamic heritage through AI and image recognition algorithms.
2.	Augmented Reality (AR)	AR makes learning more interesting, interactive, and easy to understand with outputs such as video and animation.
3.	Digital-based Learning Innovation	Digital technology improves the quality of Islamic education through creative and innovative media.
4.	Dependence on Digital Technology	The presence of modern technology increases dependence on Cloud, AI, IoT, and social media.

The table 1 above illustrates the development of digitalization and technology in Islamic education and its impact on cultural preservation, learning innovation, and social transformation.

1. Digitisation of Islamic Culture and Artifacts: Digitisation of valuable documents and artifacts using advanced technology plays an important role in protecting Islamic heritage. This process not only facilitates access to classical knowledge but also helps preserve it for future generations.
2. Augmented Reality (AR): AR technology provides a new dimension to learning by creating immersive and interactive learning experiences. The use of AR strengthens students' learning motivation, especially those who have weaknesses in following traditional learning methods.
3. Digital Learning Innovation: The adoption of digital technology by Islamic education institutions has been proven to improve the quality of learning, particularly in integrating religious values with modern approaches. This reflects the importance of innovation for the relevance of education in the digital era.
4. Dependence on Digital Technology: Technological advancement has become an integral part of modern life. While bringing significant benefits, this reliance also requires attention to the social and cultural impacts that may arise.

Among the forms of internalization of digital technology products in Islamic education is the provision of learning experiences of the history of Islamic civilization using augmented reality so that learning becomes more real. Thus, the moral message of the learning process can foster positive character in children. This is the core purpose of learning the History of Islamic Civilisation. Selain itu, pemanfaatan AR menciptakan pengalaman belajar yang lebih menarik, interaktif, dan kontekstual, seperti pada pembelajaran sejarah peradaban Islam atau fiqih.

Digitization of Classical Books as a Means of Internalising Islamic Scholarly Traditions

Technology integration eases access to digital learning resources such as the Quran, hadith, and tafsir, supporting students and teachers in acquiring Islamic knowledge quickly. With educational applications such as online platforms, interactive quizzes, and simulations, learning becomes more engaging, efficient, and meaningful, in line with modern technological advancements and Islamic principles (Sholeh, p. 85, 2023). Examples of the presentation of the interpretation of the Quran can be seen in the form of applications such as Al-Bahit Al-Qur'ani and the website https://tafsirweb.com. Among them, it presents the interpretation of the Quran and its teachings. In addition, accounts such as *@Quranreview* present tafsir in the form of visuals, images, or videos, such

as through live streaming (Nurdin, p. 147, 2023).

The rise of Quranic learning apps has enhanced Quran understanding, particularly for Arabic-speaking adults. These apps, with features like real-time feedback, also benefit younger children in learning Quranic content and Arabic alphabets. In Indonesia, the Jawi-AR app uses augmented reality to aid Jawi script mastery, foster independent learning, and preserve Islamic cultural identity (Nurul Husna Mat Isa et al., 2023).

Many Tafsir books are formatted into applications, PDFs, and other media, and many social media accounts create Quranic content in various forms. According to Muhammad Alkoun and Fadli Luqman, social media is one way to bring the Quran closer to people in their daily lives (Nurdin, p. 144, 2023). Hadith search applications are also available, not only Qur'anic commentary search applications. One example of literary research by Romdhon (2022: 210-214) utilized this application to search for thematic interpretations.

Digital technology has produced multifunctional products, including the iSantri app for Islamic education. Serving as both a digital library and social media platform, iSantri enables access to collections and facilitates interaction. It supports institutions by improving user satisfaction and ensuring efficient access to teaching materials (Afwil Jazil et al., p. 23, 2022). The role of digital technology in Islamic education is shown in the table below:

Table 2. The Role of Digital Platforms in Supporting Islamic Education Learning and Literacy

No.	Digital Platform	Function	Result
1.	Jawi-AR	Jawi script learning	Helping students understand the Jawi script while preserving Islamic cultural identity
2.	Al-Bahith al-Qurani & Al-Bahith Hadith	Direct access to classical interpretations	Enabling flexible exploration of Qur'anic and Hadith interpretations through digital devices
3.	Google Books	Access classic Islamic books	Reaching out to users in different countries for sources of classical Islamic literature
4.	Al-Maktabah Al-Syamilah	Digital library	Accelerate access to classic texts
5.	Santri	Digitization of classic books	Improving classical book literacy among young santris/students

Digital platforms have transformed Islamic education by making knowledge more accessible and engaging for the tech-savvy generation. Jawi-AR uses augmented reality to teach Jawi script while preserving Islamic traditions. Google Books provides access to classic Islamic texts around the

world, filling a gap in the available literature. Al-Bahith al-Qurani and Al-Bahith al-Hadithi provide flexible access to scholarly works, while iSantri and Al-Maktabah Al-Syamilah digitize the Kitab Kuning and make it accessible anytime and anywhere. These innovations help align education with Islamic principles and meet the challenges of the digital age while preserving traditional values.

Integrating Technology in Pesantren

Pesantren is the oldest Islamic educational institution in Indonesia that has existed since the arrival of Islam and developed along with the progress of education. There are two views on the origin of pesantren. Some say that pesantren originated from the Islamic tradition, while others consider it a uniquely Indonesian education system (Romadhoni & Basri, 2022). Pesantren, the original educational institution in Indonesia, has a long tradition of producing professionals and fostering strong community ties based on integrity, independence, and brotherhood (Cahyono et al., 2024).

They serve not only as education centers but also as community centers that promote self-education, personality development, and social change (Kardi et al., 2023). Pesantren adheres to traditional methods such as classical books and face-to-face teaching to instill spiritual values and mold the character of santri. These values have influenced other educational institutions, though concerns remain about their adaptability to contemporary educational frameworks (Wijaya et al., p. 142, 2024).

The introduction of technology into pesantren provides an opportunity to modernize the peasantry while maintaining traditional values. By using blended learning models and tools such as interactive applications, e-books, and online platforms, pesantren creates a dynamic and personalized learning environment that appeals to the tech-savvy younger generation while adhering to Islamic principles (Rifah et al., 2024). Kardi et al. (2023) highlight how cyberspace has influenced pesantren, leading to the emergence of virtual pesantren to meet community needs for religious understanding. Educational technology supports lifelong learning by enabling flexible, anytime-anywhere access to education. This approach enhances engagement and personalizes learning by allowing students to choose their own study times.

Despite the challenges in adapting, Pesantren has capitalized on the digital innovations accelerated by the pandemic. Maintaining the status quo requires adjusting schedules and improving human resources (Wijaya et al., p. 144, 2024). The flexibility offered by educational technology is transformative, especially when adapting to different learning environments and

schedules. It supports inclusion by bridging the gap in access to quality education in different socio-economic and geographic contexts. Additionally, this principle promotes autonomous learning and encourages students to explore their preferred ways and times to learn, which is consistent with the principles of lifelong learning (Kardi et al., 2023).

Pratiwi Agustini (2023) emphasizes that after implementing digitalization policies, the next crucial step is to provide training. The government must collaborate with school managers to make digital technology-based learning a reality. Simply supplying devices to schools is not enough; workshops, seminars, and other initiatives should be organized by both the public and private sectors to ensure the success of the school digitalization program.

Table 3. The Role of Digital Technology in Internalizing Islamic Education in Pesantren

Traditional Role	Modernization with Technology	Impact of Technology	Challenges	Recommendations
Focuses on kitab kuning, face-to-face teaching, character building, and community development (Cahyono et al., 2024); (Kardi et al., 2023)	Blended learning, interactive apps, and online platforms create dynamic and personalized learning environments (Rifah et al., 2024); (Kardi et al., 2023)	Supports lifelong learning, increases engagement, and bridges gaps in socio-economic and geographic access (Wijaya et al., 2024).	Adapting schedules, improving human resources, and maintaining traditional values while modernizing (Wijaya et al., 2024)	Training programs, government collaboration, and public-private initiatives are essential for successful digitalization (Pratiwi Agustini, 2023)

This table shows that pesantren, as centers of Islamic education, integrate digital technology to modernize their systems while maintaining traditional values. The integration of tools such as blended learning platforms and interactive applications is consistent with the internalization of digital technology in Islamic education, which encourages inclusivity, flexibility, and lifelong learning. These advancements will enable pesantren to remain relevant in the digital age and face current challenges while encouraging spiritual and character development based on Islamic principles.

Utilization of AI in Islamic Education Development

According to Cotton et al. (2023), AI is a branch of computer science that is concerned with the empowerment of information and communication technology via the design and development of advanced tools and machines inherently capable of performing tasks and solving problems that

typically require predefined levels and subsets of human intelligence (Alsulami, 2024). AI technologies can be integrated with virtual and augmented reality tools to create immersive learning experiences. This can help students visualize complex concepts, explore virtual environments, and engage in interactive simulations, enhancing their understanding and retention of knowledge (Lynn Aaron, 2024). As such, AI is also an exciting new learning medium in Islamic education.

AI-based applications can adjust the difficulty level of the material to the user's ability, ensuring the learning process is more effective. Researchers are using artificial intelligence (AI) to develop Quran-based applications that support Islamic religious learning. The technology uses Natural Language Proses (NLP) to understand the Quranic text, perform contextual analysis, and display information relevant to the individual. This makes Islamic materials, such as interpretations and meanings of verses, more accessible and makes learning more interactive and tailored to the user's needs. AI in Islamic education opens up opportunities for personalization, accessibility, and efficiency in learning, making it better suited to the digital age without neglecting religious values (Bashir et al., 2023).

While AI and digital tools facilitate learning, they cannot replicate the social bonds, traditions, and values fostered through direct interactions between santri, kyai, and their community (Kardi et al., 2023). The implementation of AI in Islamic education in the transformative era is essential to increase the effectiveness and accessibility of religious learning. With personalization capabilities, AI allows educational materials to be tailored to students' spiritual needs and interests while expanding the global reach of religious knowledge. However, its application must remain in line with Islamic ethical values so that this technology is not only innovative but also maintains spiritual and moral principles. Thus, AI has become an inclusive, efficient, and relevant transformation tool to face the challenges of the digital era (Rifah et al., 2024).

Another impact is that large campuses have long been worried about losing applicants affected by the storm of technological progress. Artificial intelligence is now widely used and regulated in Indonesia, and large companies such as Baidu, Facebook, and Google prioritize its development. As AI transforms work in sectors such as law, consulting, and customer service, Indonesia faces the challenge of treating AI as a threat or an opportunity. To navigate these changes, governments must advance digital technology through appropriate policies (Ellyzabet Sukmawati et al., 2022).

Table 4. Use of AI in Islamic Education Development

No	Aspect	Details
1.	AI in Learning Tools	AI combined with virtual and augmented reality creates immersive learning experiences, enhancing understanding and retention.
2.	Ethical Considerations	AI must align with Islamic ethical values, preserving spiritual and moral principles while advancing educational innovation.
3.	Challenges and Limitations	AI cannot replicate social bonds and traditions fostered through direct interaction within Islamic educational contexts.
4.	Policy Implications	Governments must implement policies to regulate AI use and harness it as an opportunity rather than a threat.

The table Use of AI in Islamic Education Development shows how AI can support Islamic education development through innovative technologies such as personalized learning and virtual learning tools. However, its application needs to consider Islamic ethical values, societal challenges, and appropriate policies. With a smart approach, AI can be an effective tool to improve the quality of Islamic education without neglecting its spiritual and traditional aspects.

Character Strengthening with Digital Technology Media in Islamic Education

Educational goals include the development of noble character, positive personality traits, constructive interpersonal relationships, and the ability to deal effectively with life. These goals are meant to inspire students to pursue their goals with vigor. Each child is motivated in his or her own way to achieve his or her personal goals (Cahyono et al., p. 180, 2024). AI can be used in education to influence students' morals and character, improve their mental acuity, and give them new insights (Rifah et al., 2024).

Islamic education must adapt to technological advancements while filtering secular influences to maintain its integrity. It should focus on character development, ensuring students excel academically and uphold moral values. This approach aims to produce individuals who integrate scientific knowledge with virtuous behavior, contributing to morality-driven technological excellence (Diana et al., 2024). The purpose of Islamic education is not only to prepare students for the future with temporary skills but also to improve morals (*tahdzib*), both individual morals and community morals. Good morals are the implementation of adab in a person. This is the essence of adab, according to Ibn Qoyim al-Jauziyah (A. H. al K. W. S. Muslim, 2018).

The facts in the field show that students' perceptions are not too big to consider religion as a shaper of personality character. One of the reasons a person chooses to be religious is because of the personality that is formed because of religion. The results of a survey of 50 students in West Java showed that 36% stated that their personality was formed because of religion (Siswantara & Supriyadi, 2024). This will need to be discussed further.

Table 5. Positive and Negative Aspects of Using Digital Technology in Islamic Education

Positive Aspects	Negative Aspects
Quick access to religious resources	Decreased in-depth religious literacy
Engaging learning	Potential technology dependency
Pedagogical innovation	Student character and moral challenges

Digitalization can lower moral and social values due to reduced socialization, increased dependence on digital devices, and potential negative behaviors such as cyberbullying (Hidayat et al., 2022). Digital media facilitates the dissemination of religious knowledge but risks reducing deep religious literacy due to the limitations of critical analysis (Pabbajah et al., 2021).

Discussion

As mentioned in the introduction, Krasnova considers Islamic education to be a field that has been transformed by digital technology. The downside is that AI has the potential to limit human capacity, especially in areas such as customer service and consulting (Ellyzabet Sukmawati et al., p. 15, 2022). Ellyzabet further suggested that the government needs to regulate AI with balanced policies to reduce its risks and maximize its potential as an innovative educational tool. It also needs to be addressed that there is no specific regulation on deep learning in Indonesia.

Technological advances have encouraged the use of digital media in disseminating religious knowledge, creating new religious values, and allowing the younger generation to access theology through the internet more easily (Pabbajah et al., p. 125, 2021). While some aspects of human life may remain unaffected by digital technology, most activities have become easier and faster, with technology enabling quick access to information without concerns about time or space (Ellyzabet Sukmawati et al., 2022).

The issue of education in the digital era has garnered attention from academics and practitioners. Putri (2018) highlights that Children in the digital era spend more time with technology, gadgets, video games, and online media than traditional games that foster solidarity and creativity. On average, they watch TV for 3 hours on school days, 7.4 hours during holidays,

and play online games for 2.1 hours. Aprianto & Dafit (2022, p. 224) reported that their findings show that most online game users are teenagers, drawn to the competition and the opportunity to connect with friends online or at game centers. The challenge and variety of interactive games further fuel their interest in playing.

Digital technology that was once just a game but with augmented reality today becomes a more meaningful learning experience for students. This new way can break the ice of the classic learning process that tends to saturate. This learning can be done by using digital devices that depict the object being studied as really looking real. The use of technology, such as AR, in learning Islamic Civilisation History has enriched the learning process, responding wisely to digital advancements. With the rise of affordable smartphones, mobile networks, and social media, people have become more dependent on technology, while innovations like AI, robotics, IoT, and blockchain influence global social, cultural, and political transformations (Noonpakdee et al., 2020).

In addition, AR has been applied to learning in educational institutions. Afsas (2023) has proven the effectiveness of AR to significantly improve science education, validating its role as a valuable addition to the pedagogical landscape. In learning fiqh, AR can also be an interesting digital technology-based learning media. AR offers an innovative alternative. The *AR Prayer app* provides accessible, user-friendly learning for all ages and backgrounds, making it a valuable tool for improving prayer habits and increasing social impact (Yuliharti et al., 2019).

Referring to Hidayati and Anganthi's (2022) explanation, digitalization requires the adoption and integration of digital technology in various aspects of life, including education. This phenomenon has permeated almost all sectors, including formal and non-formal education environments. To date, many mosques and da'wah institutions have utilized digital media platforms as instruments for outreach and da'wah (Wijaya et al., p. 143, 2024). In this context, in 2023, researchers visited the Al-Jabbar Grand Mosque Museum in Bandung, which uses AR technology to offer interactive content, enhancing visitors' experience in learning about Islamic history and culture. This technology makes learning more vivid, engaging, and immersive compared to traditional methods. (Dewan Kemakmuran Masjid, n.d.). Thus, students can visit the museum on class outings for an interesting learning experience and to appreciate the historical events of Islamic civilization.

The findings highlight the significant impact of digital technology on Islamic education, with apps such as Al-Bahith al-Qurani providing easy access to Islamic literature and augmented reality

enhancing learning engagement. It shows how Islamic education can adapt to the digital age while still maintaining its scholarly and religious values. Research on digitalization in education continues. Hidayat et al. (2022) classify digitalization's impact, noting it simplifies administration and teaching but requires skilled staff and attention to negative effects, like reduced socialization. While technology can enhance knowledge, it may lower moral values and social behavior, including cyberbullying, which harms both perpetrators and victims.

Meanwhile, Pabbajah et al. (2021: p. 127-128) highlight three key implications of digitalizing Islamic education: reduced religious literacy due to reliance on the internet, shallow understanding from spontaneous searches, and a disconnect between students' interest in religion and their actual knowledge. To address this, digital learning platforms that use gamification and personalization can offer experiences aligned with Islamic principles, encouraging active student participation and helping them understand both academic material and Islamic values.

Among the positive impacts of digitization in learning, such as Hidayat's classification above, modern educational institutions are increasingly embracing paperless approaches, with the digitization of classical books (kitab kuning) playing a crucial role in preserving Islamic scholarly traditions. This transformation makes these key references, often used in Islamic boarding schools, accessible via digital devices, helping the younger generation, who are more familiar with technology, internalize classical Islamic values.

The digitization of kitab kuning ensures the continued relevance of Islamic teachings while integrating technology into learning. Platforms like iSantri and e-learning tools in Islamic boarding schools offer interactive learning experiences, blending traditional methods like *sorogan* and *bandongan* with digital advancements to strengthen scientific traditions and adapt to the challenges of digitalization. Furthermore, Cultural factors also contribute to resistance to digitalization, particularly in Muslim-majority countries. Mustafa (2021) found that some pesantrens in Indonesia resist technology, fearing it could introduce Western influences that conflict with Islamic values and weaken local culture while altering traditional learning methods (Yuliati A. S et al., 2024).

This phenomenon shows the growing use of digital technology in Islamic education, making it easier to access authentic Islamic scientific sources. However, Islamic education, represented by institutions like madrasas and pesantren, faces various challenges in adopting technology, particularly related to infrastructure, the skills of educators, and concerns about the negative impact of technology on Islamic values (Yuliati A. S et al., p. 41, 2024). However, the declining enthusiasm

for education among madrasah and pesantren highlights the need to adapt to global developments through the integration of digital technologies education (Elih Malihatun et al., 2023).

To maximize digital education, educators can blend online tools with traditional methods, offering resources like apps and e-books. Parents can support learning at home, while institutions should provide policies and access to affordable digital tools. Students should use adaptive learning tools to learn at their own pace and stay motivated.

Mubarak (2021), in a study (Kardi et al., 2023b), highlighted that Islamic education often overemphasizes moral and spiritual aspects while neglecting technological mastery, hindering its global competitiveness. The solution is to integrate both spiritual and technical aspects to enhance the relevance of Islamic education in shaping modern civilization.

This claim is inaccurate, as many educational institutions, including pesantren, have adopted technology-based learning models. Examples include Pesantren Mambaus Sholihin, Gontor with its doctoral program, Pesantren Bin Baz Jogjakarta, and Pesantren Hidayatunnajah Bekasi, all of which have established universities and integrated digital technology into their learning processes.

The argumentation of the above statement is an interesting principle in technical Islamic education, especially by traditional educational institutions, 'Preserving the good old system and implementing a new, better system' which in Arabic '*al-muhafazhatu ala al-qadimi al-shalih wa al-akhdzu bi al-jadidi all-ashlah'* (Muslim, 2017). Furthermore, Mutoin, Farikul Isbah Pabaja, et al. (2020) state that the integration of technology into Islamic education requires special attention to safeguard Islamic values. While technology can enrich the learning experience, dependency risks undermining critical thinking and reflection, which are at the core of Islamic teachings. Therefore, Islamic education in the digital era should consider spiritual and moral development as an integral part of Muslim character development.

Mansir (2020) argues that many educational institutions, teachers, and parents may show resistance to change, especially if they are used to traditional teaching methods. It is, therefore, necessary to organize seminars, workshops, and training sessions to explain the benefits of innovation and how change can improve educational outcomes (Mukarom et al., 2024). Islamic education can use digital technology to enhance character building through innovative learning, but challenges like declining religious literacy and tech dependency must be addressed. Balancing technology with Islamic values is essential to develop individuals with strong academic and moral foundations.

CONCLUSION

This research confirms the importance of internalizing digital technology in Islamic education to face moral challenges in the digital era. The integration of technologies such as augmented reality (AR) and artificial intelligence (AI) has created innovative, interactive, and relevant learning methods without losing Islamic values. This opens up opportunities for Islamic education to enhance the learning experience while maintaining its scientific and moral traditions. However, the research also highlights challenges such as the decline in deep religious literacy and technology dependency, which require strategic policies in technology-based curriculum development. To ensure the sustainability of educational reforms, further research is needed to explore the long-term impact of using technologies such as AI and AR on students' character formation and develop strategies for technology integration across different levels of education. With a balanced approach, Islamic education can remain relevant and lead moral and spiritual transformation in the midst of rapid technological development.

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