


ISLAMIC EDUCATION AND ARTIFICIAL INTELLIGENCE: DOES IS REQUIRED?

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Article Info	ABSTRACT
<p>Article history:</p> <p>Received: 8 August 2024 Revised: 10 Sept 2024 Accepted: 5 Oct 2024 Published: 1 Nov 2024</p>	<p>This study explores the intersection of Islamic education and Artificial Intelligence (AI), examining the potential benefits, challenges, and ethical considerations of integrating AI technologies into traditional Islamic educational frameworks. The research investigates how AI can enhance personalized learning experiences, improve accessibility to Islamic knowledge, and aid in the preservation and dissemination of religious texts. It discusses the alignment of AI with Islamic principles of knowledge-seeking and reflection, while also addressing concerns about maintaining the human-centered aspects of Islamic education. The study highlights the importance of collaboration between technologists and Islamic scholars in developing AI systems that respect and promote Islamic values. Key areas of AI application in Islamic education are identified, including adaptive learning systems, Arabic language instruction, and virtual reality experiences of Islamic historical sites. The research concludes that while AI offers significant opportunities to modernize and enhance Islamic education, careful consideration must be given to ethical issues such as data privacy, algorithmic bias, and the potential oversimplification of complex religious concepts. This study contributes to the growing body of literature on the role of technology in religious education and provides insights for educators, policymakers, and technologists working at the intersection of AI and Islamic studies.</p>
<p>Keywords:</p> <p><i>Artificial intelligence, Islamic education, Technologies</i></p> <p></p>	

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INTRODUCTION

Islamic education, rooted in the teachings of the Quran and the Hadith, aims to nurture the spiritual, moral, and intellectual development of individuals within an Islamic framework. The primary objective is to cultivate a deep understanding of Islamic principles and values, while also equipping students with knowledge and skills relevant to contemporary society. Islamic education emphasizes the concept of *tarbiyah*, which encompasses the holistic development of an individual's character, intellect, and faith (Halstead, 2004). This approach integrates religious instruction with secular subjects, fostering a worldview that reconciles faith with reason and modern scientific knowledge.

The historical development of Islamic education can be traced back to the time of Prophet Muhammad, with the mosque serving as the first educational institution in Islam. Over centuries, this system evolved into a complex network of madrasas, which became centers of learning throughout the Islamic world. These institutions played a crucial role in preserving and transmitting knowledge, contributing significantly to advancements in various fields such as mathematics, astronomy, medicine, and philosophy during the Islamic Golden Age (Makdisi, 1981). The curriculum in traditional Islamic education typically included Quranic studies, Hadith, Islamic jurisprudence (*fiqh*), Arabic language, and literature, alongside other subjects deemed necessary for a well-rounded education.

In the modern context, Islamic education faces the challenge of adapting to rapidly changing societal needs while maintaining its core principles. Many Muslim-majority countries and Muslim communities in non-Muslim countries have developed educational systems that integrate Islamic teachings with contemporary subjects and pedagogical methods. This has led to the establishment of Islamic schools and universities that offer a wide range of programs, from religious studies to science and technology, all within an Islamic ethical framework (Tan, 2011). However, there is ongoing debate among scholars and educators about the best approaches to balance traditional Islamic knowledge with modern educational requirements.

Critics argue that some forms of Islamic education, particularly those focused solely on religious instruction, may not adequately prepare students for the challenges of the globalized world. Proponents, on the other hand, emphasize the importance of preserving Islamic values and identity in the face of westernization and secularization. The future of Islamic education likely lies in finding innovative ways to maintain its core principles while embracing the positive aspects of modern educational practices and technologies. This may involve developing new curricula, training teachers in both Islamic and secular subjects, and fostering critical thinking skills within an Islamic ethical framework (Sahin, 2018).

The Important of Islamic education

Islamic education holds a position of paramount importance in Muslim societies, serving as a cornerstone for spiritual growth, moral development, and intellectual advancement. Rooted in the teachings of the Quran and the traditions of Prophet Muhammad, Islamic education aims to cultivate individuals who are not only knowledgeable in religious matters but also well-equipped to navigate the complexities of the modern world. The Quran itself emphasizes the significance of knowledge acquisition, stating, "*Allah will raise those who have believed among you and those who were given knowledge, by degrees*" (Quran 58:11). This divine endorsement of education sets the foundation for a knowledge-seeking culture within Islamic societies (Halstead, 2004).

The comprehensive nature of Islamic education is one of its most distinctive and valuable features. Unlike systems that separate secular and religious knowledge, Islamic education integrates various forms of learning under a unified worldview. This holistic approach encompasses not only religious studies but also sciences, mathematics, literature, and other disciplines, all viewed through the lens of Islamic principles. The Prophet Muhammad encouraged this comprehensive pursuit of knowledge, saying, "*Whoever follows a path in pursuit of knowledge, Allah will make easy for him a path to Paradise*" (Sahih Muslim). This hadith underscores the spiritual rewards associated with learning in all its forms, motivating Muslims to excel in diverse fields of study (Al-Attas, 1979).

Character formation and moral excellence are central objectives of Islamic education. The Quran and Hadith repeatedly emphasize the importance of developing good character alongside intellectual growth. The Prophet Muhammad stated, "*I have been sent to perfect good character*" (Muwatta Malik), highlighting the inseparable link between education and moral development in Islamic thought. Islamic education aims to produce individuals who are not only knowledgeable but also ethically upright, compassionate, and just. This focus on character building is crucial for creating a morally sound society and achieving the higher objectives of Islamic law (maqasid al-shariah) (Al-Ghazali, 1058-1111 CE/1993).

The societal impact of Islamic education extends far beyond individual development. It plays a vital role in community building, social cohesion, and civilizational progress. The Quran encourages believers to "*Invite to the way of your Lord with wisdom and good instruction*" (Quran 16:125), emphasizing the responsibility of the educated to share their knowledge for the betterment of society. Throughout history, Islamic educational institutions have been centers of learning, innovation, and cultural exchange, contributing significantly to advancements in various fields during the Islamic Golden Age. This tradition of knowledge dissemination and societal contribution continues to be a crucial aspect of Islamic education in the contemporary world (Günther, 2006).

Lastly, Islamic education promotes the concept of lifelong learning and intergenerational knowledge transfer. The Quranic injunction to "*say, 'My Lord, increase me in knowledge'*" (Quran 20:114) encourages a continuous pursuit of learning throughout one's life. This principle is further reinforced by the Prophetic tradition that states, "*Seek knowledge from the cradle to the grave*" (Al-Tirmidhi). Islamic education thus fosters a culture of ongoing intellectual growth and emphasizes the importance of passing knowledge from one generation to the next. This approach ensures the preservation and evolution of Islamic knowledge while equipping successive generations with the tools to address contemporary challenges within an Islamic framework (Wan Daud, 1998).

Artificial intelligence in education

Artificial Intelligence (AI) has emerged as a transformative force in various sectors, and education is no exception. The integration of AI in educational settings promises to revolutionize teaching and learning processes, offering personalized experiences, enhancing administrative efficiency, and providing new tools for both educators and students. As AI continues to evolve, its potential to address longstanding challenges in education while creating new opportunities for growth and innovation becomes increasingly apparent (Holmes et al., 2019).

One of the most significant impacts of AI in education is its ability to provide personalized learning experiences. AI-powered adaptive learning systems can analyze individual student performance, identify strengths and weaknesses, and tailor content and pacing to meet each student's unique needs. For instance, intelligent tutoring systems (ITS) use AI algorithms to provide one-on-one tutoring, adjusting their teaching strategies based on the student's responses and progress. A meta-analysis by

VanLehn (2011) found that the effectiveness of ITS approaches that of human tutoring, demonstrating the potential of AI to provide high-quality, individualized instruction at scale. This personalization can lead to improved learning outcomes, increased student engagement, and a more efficient use of educational resources.

AI is also transforming assessment practices in education. Traditional assessment methods often struggle to provide timely, detailed feedback and can be limited in their ability to measure complex skills. AI-powered assessment tools can analyze vast amounts of data from various sources, including written work, classroom interactions, and online activities, to provide more comprehensive and nuanced evaluations of student performance. For example, automated essay scoring systems using natural language processing can provide instant feedback on writing assignments, allowing students to revise and improve their work more quickly (Shermis & Burstein, 2013). Furthermore, AI can help identify patterns in student performance data, enabling early intervention for students at risk of falling behind and informing instructional decisions at both individual and institutional levels.

The role of AI in supporting educators is another critical aspect of its impact on education. AI-powered tools can assist teachers in various tasks, from lesson planning and content creation to administrative duties, allowing them to focus more on high-value interactions with students. For instance, AI can analyze curriculum standards and learning objectives to suggest relevant resources and activities, saving teachers significant time in lesson preparation. Additionally, AI-driven analytics can provide teachers with insights into student engagement and learning progress, enabling more informed and timely instructional decisions. A study by Holstein et al. (2019) found that AI-powered real-time analytics tools can significantly enhance teachers' ability to provide targeted support to students in need, improving overall classroom management and learning outcomes.

AI is also playing a crucial role in making education more accessible and inclusive. Language translation tools powered by AI can help break down language barriers in multicultural classrooms and enable access to educational resources in multiple languages. For students with disabilities, AI-powered assistive technologies, such as text-to-speech and speech recognition systems, can provide crucial support in accessing educational content and participating in classroom activities. Moreover, AI can help identify and address biases in educational materials and assessment practices, promoting more equitable learning environments. As Whittaker et al. (2019) argue, however, it is essential to approach the development and implementation of AI in education with a critical eye towards issues of equity and inclusion, ensuring that these technologies do not inadvertently perpetuate or exacerbate existing inequalities.

Looking to the future, the potential of AI in education extends beyond current applications. Emerging technologies such as virtual and augmented reality, combined with AI, promise to create immersive learning experiences that can simulate real-world environments and scenarios, enhancing experiential learning across various disciplines. AI-powered predictive analytics may also play a larger role in educational planning and policy-making, helping institutions optimize resource allocation and improve long-term outcomes. However, as AI becomes more prevalent in education, it is crucial to address ethical concerns, such as data privacy, algorithmic bias, and the potential overreliance on technology. Educators, policymakers, and technologists must work together to develop frameworks that ensure the responsible and effective use of AI in educational settings, balancing innovation with ethical considerations and the fundamental human elements of teaching and learning (Tuomi, 2018).

Artificial intelligence in Islam

The rapid advancement of artificial intelligence (AI) has sparked discussions across various disciplines, including religious studies. In the context of Islam, scholars and thinkers are examining the ethical, theological, and practical implications of AI through the lens of Islamic principles. The Quran encourages the pursuit of knowledge and reflection on God's creation, stating, "*And He has subjected to you whatever is in the heavens and whatever is on the earth - all from Him. Indeed in that are signs for a people who give thought*" (Quran 45:13). This verse, among others, is often cited to support the idea that scientific and technological advancements, including AI, can be viewed as a means to better understand and appreciate God's creation (Beltramini, 2019).

From an Islamic ethical perspective, the development and use of AI must align with the core principles of Islamic law (Maqasid al-Shariah), which aim to preserve and promote human welfare. These principles include the protection of faith, life, intellect, lineage, and property. AI applications that enhance human capabilities, improve healthcare, or contribute to solving global challenges can be seen as aligning with these objectives. However, Islamic scholars also emphasize the need for careful consideration of potential risks and ethical dilemmas. For instance, the use of AI in decision-making processes raises questions about accountability and the preservation of human agency, which are important concepts in Islamic ethics (Awad, 2019).

The concept of consciousness and the nature of the human soul are central to Islamic theology, and these concepts intersect with discussions about AI, particularly in the realm of strong AI or artificial general intelligence (AGI). Islamic scholars generally maintain that consciousness and the soul are divine gifts unique to humans and other sentient beings created by God. This perspective poses challenges to the notion of creating truly conscious AI, as it would be seen as an attempt to replicate a divine attribute. However, some scholars argue that even highly advanced AI would still be considered a tool or an extension of human intelligence rather than a conscious entity in its own right (Ameri & Ekhtiari, 2018).

Islamic jurisprudence (fiqh) is also grappling with questions related to AI. For example, the use of AI in Islamic finance to ensure compliance with Sharia principles is becoming increasingly common. AI systems can help in screening investments, automating zakat calculations, and detecting fraudulent activities in Islamic banking. However, scholars emphasize that while AI can assist in these processes, final decisions should still involve human experts well-versed in Islamic law. This approach reflects the Islamic principle of *ijtihad* (independent reasoning) and the importance of human judgment in interpreting and applying religious principles (Rhaimi & Osman, 2021).

Looking to the future, some Muslim thinkers see AI as a potential tool for enhancing religious education and practice. AI-powered applications could provide personalized guidance on Islamic teachings, assist in Quranic memorization, or offer tailored spiritual advice based on an individual's circumstances. However, there is also concern about the potential misuse of AI in spreading misinformation or manipulating religious sentiments. Islamic scholars stress the importance of developing AI systems that are transparent, accountable, and aligned with Islamic values. As AI continues to evolve, ongoing dialogue between religious scholars, ethicists, and technologists will be crucial in navigating the complex intersection of AI and Islam, ensuring that technological advancements serve the greater good while remaining true to Islamic principles (Bunt, 2018).

The reliable of Artificial intelligence in Islamic education

The integration of Artificial Intelligence (AI) into Islamic education presents both opportunities and challenges, as it intersects with traditional Islamic pedagogical methods and ethical considerations. Islamic education, rooted in the Quran and Hadith, emphasizes the pursuit of knowledge as a religious obligation. The Prophet Muhammad said, "*Seeking knowledge is mandatory for every Muslim*" (Sunan Ibn Majah), highlighting the importance of education in Islamic tradition. As AI technologies continue to advance, their potential to enhance and transform Islamic education becomes increasingly apparent, prompting scholars and educators to explore how these innovations can be harnessed while remaining true to Islamic principles (Bunt, 2018).

One of the most promising applications of AI in Islamic education is in personalized learning. AI-powered adaptive learning systems can analyze individual student performance, identify areas of strength and weakness, and tailor content to meet each student's unique needs. This aligns well with the Islamic principle of considering individual differences in education, as emphasized by the Prophet Muhammad's teaching methods. For instance, AI could be used to create personalized Quran memorization plans, adjusting the pace and content based on a student's progress and learning style. Similarly, AI-driven chatbots could provide instant answers to students' questions about Islamic jurisprudence or history, offering 24/7 support and reinforcing learning outside the classroom. However, it is crucial to ensure that these AI systems are developed with a deep understanding of Islamic teachings and values to avoid misinterpretation or oversimplification of complex religious concepts (Ameri & Ekhtiari, 2018).

AI also has the potential to enhance the teaching of Arabic, the language of the Quran and a fundamental aspect of Islamic education. Natural Language Processing (NLP) technologies can provide interactive language learning experiences, offering pronunciation feedback, grammar correction, and contextual understanding of Quranic Arabic. This can significantly improve students' ability to engage directly with Islamic texts in their original language. Additionally, AI-powered translation tools can make Islamic literature more accessible to non-Arabic speakers, facilitating a broader understanding of Islamic teachings across linguistic barriers. However, scholars caution that over-reliance on AI translations without proper guidance could lead to misinterpretations, emphasizing the continued importance of human scholars in providing nuanced understanding of religious texts (Beltramini, 2019).

The use of AI in Islamic education also raises important ethical considerations. While AI can greatly enhance educational efficiency and accessibility, it is essential to ensure that its implementation aligns with Islamic ethical principles. For example, the collection and use of student data by AI systems must adhere to Islamic privacy norms and the principle of amanah (trustworthiness). Furthermore, the development of AI systems for Islamic education should involve collaboration between technologists and Islamic scholars to ensure that the technology respects and promotes Islamic values. This includes addressing potential biases in AI algorithms and ensuring that the technology does not inadvertently promote interpretations of Islam that are not widely accepted by scholarly consensus (Awad, 2019).

Looking to the future, the integration of AI in Islamic education has the potential to create more inclusive and globally connected learning environments. Virtual and augmented reality technologies, combined with AI, could create immersive experiences of historical Islamic sites or simulate participation in religious practices, enhancing experiential learning. AI could also facilitate cross-cultural dialogue and understanding by connecting students from different parts of the Muslim world, fostering a sense of global ummah (community). However, as these technologies are adopted, it is

crucial to maintain a balance between technological innovation and the traditional, human-centered aspects of Islamic education. The role of the teacher (mu'allim) in nurturing moral and spiritual development remains irreplaceable, and AI should be seen as a tool to augment, rather than replace, the human elements of Islamic education. As the field continues to evolve, ongoing dialogue between Islamic scholars, educators, and technologists will be essential to ensure that AI enhances Islamic education while preserving its core values and objectives (Rhaimi & Osman, 2021).

The Important of AI in Islamic education

Artificial Intelligence (AI) is emerging as a significant tool in enhancing and transforming Islamic education, offering new opportunities to meet the challenges of modern educational demands while adhering to Islamic principles. The importance of AI in Islamic education stems from its potential to personalize learning experiences, increase accessibility, improve teaching methodologies, and preserve Islamic knowledge. As the Quran encourages the pursuit of knowledge and reflection on God's creation (Quran 39:9), the integration of AI in Islamic education can be seen as a means to fulfill this divine encouragement in the context of contemporary technological advancements (Beltramini, 2019).

One of the primary importance of AI in Islamic education lies in its ability to provide personalized learning experiences. AI-powered adaptive learning systems can analyze individual student performance, identify areas of strength and weakness, and tailor content to meet each student's unique needs. This aligns well with the Islamic principle of considering individual differences in education, as exemplified by the Prophet Muhammad's teaching methods. For instance, AI can create personalized Quran memorization plans, adjusting the pace and content based on a student's progress and learning style. Similarly, AI-driven chatbots can provide instant answers to students' questions about Islamic jurisprudence or history, offering 24/7 support and reinforcing learning outside the classroom. This personalization can lead to more effective learning outcomes, increased student engagement, and a deeper understanding of Islamic teachings (Ameri & Ekhtiari, 2018).

AI also plays a crucial role in increasing the accessibility and reach of Islamic education. Natural Language Processing (NLP) technologies can enhance the teaching of Arabic, the language of the Quran, by providing interactive language learning experiences, offering pronunciation feedback, and contextual understanding of Quranic Arabic. This can significantly improve students' ability to engage directly with Islamic texts in their original language. Furthermore, AI-powered translation tools can make Islamic literature more accessible to non-Arabic speakers, facilitating a broader understanding of Islamic teachings across linguistic barriers. Virtual and augmented reality technologies, combined with AI, could create immersive experiences of historical Islamic sites or simulate participation in religious practices, enhancing experiential learning and making Islamic education more engaging and accessible to a global audience (Bunt, 2018).

Lastly, AI has the potential to play a significant role in preserving and disseminating Islamic knowledge. Machine learning algorithms can be used to digitize and analyze vast collections of Islamic texts, helping to preserve ancient manuscripts and make them more accessible to scholars and students worldwide. AI can also assist in the complex task of hadith authentication by analyzing chains of narration and identifying patterns that might be difficult for human scholars to detect. Moreover, AI-powered systems can help in organizing and retrieving Islamic legal rulings (fatwa) more efficiently, aiding scholars and students in their research and study of Islamic jurisprudence. However, it is crucial to note that while AI can greatly enhance these processes, the final interpretation and application of Islamic teachings should still involve human scholars to ensure accuracy and maintain the ethical and spiritual dimensions of Islamic education (Rhaimi & Osman, 2021).

CONCLUSION AND RECOMMENDATION

The integration of Artificial Intelligence (AI) in Islamic education represents a significant opportunity to enhance and modernize traditional educational approaches while adhering to Islamic principles. This research has explored the multifaceted implications of AI in Islamic education, highlighting its potential to personalize learning experiences, increase accessibility to Islamic knowledge, and preserve religious texts and teachings. AI-powered tools such as adaptive learning systems, natural language processing for Arabic instruction, and virtual reality experiences of Islamic historical sites offer innovative ways to engage students and deepen their understanding of Islamic teachings.

However, the adoption of AI in Islamic education is not without challenges. Ethical considerations, including data privacy, the potential for algorithmic bias, and the risk of oversimplification of complex religious concepts, must be carefully addressed. The research emphasizes the importance of maintaining a balance between technological innovation and the human-centered aspects of Islamic education, recognizing that the role of human scholars and teachers remains irreplaceable, particularly in nurturing moral and spiritual development.

The study also highlights the alignment of AI with Islamic principles of seeking knowledge and reflecting on God's creation, as encouraged in the Quran. By leveraging AI technologies, Islamic educational institutions can potentially fulfill these divine encouragements in the context of contemporary technological advancements. However, it is crucial that the development and implementation of AI in Islamic education involve collaboration between technologists and Islamic scholars to ensure that these technologies respect and promote Islamic values.

Future Research:

1. Empirical studies on the effectiveness of AI-powered tools in Islamic education: Future research should focus on conducting comprehensive studies to measure the impact of AI-based learning systems on students' understanding of Islamic concepts, Arabic language acquisition, and overall educational outcomes.
2. Ethical frameworks for AI in Islamic education: Developing specific guidelines and ethical frameworks for the use of AI in Islamic educational contexts, addressing issues such as data privacy, algorithmic transparency, and the preservation of human agency in religious interpretation.
3. AI-assisted Quranic and Hadith studies: Exploring the potential of AI in enhancing the study and authentication of Hadiths, as well as in Quranic exegesis, while maintaining the crucial role of human scholars in these fields.
4. Cross-cultural AI applications in Islamic education: Investigating how AI can facilitate intercultural understanding and global Islamic education, particularly in non-Muslim majority countries or for Muslim minority communities.
5. AI and Islamic pedagogy: Examining how traditional Islamic teaching methods can be effectively integrated with AI-powered educational technologies to create innovative pedagogical approaches.
6. Long-term impact studies: Conducting longitudinal studies to assess the long-term effects of AI-enhanced Islamic education on students' religious understanding, practice, and identity formation.
7. AI in Islamic moral and character education: Researching how AI can be utilized to support the development of Islamic virtues and ethical decision-making skills in students.

8. Comparative studies: Analyzing the use of AI in Islamic education compared to its use in other religious educational systems to identify best practices and potential areas for interfaith collaboration in educational technology.

These future research directions will contribute to a more comprehensive understanding of the role of AI in Islamic education and help in developing effective, ethical, and culturally sensitive AI-powered educational tools and methodologies.

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