
Artificial Intelligence in Multicultural Islamic Education: Opportunities, Challenges, and Ethical Considerations

Mahmudulhassan¹, Muthoifin², Sazirul Begum³

¹Feculty of Islamic Education, Universitas Muhammadiyah Surakarta, Indonesia; and
Islamic Arabic University, Bangladesh

²Doctor of Islamic Education, Universitas Muhammadiyah Surakarta, Indonesia

³Feculty of Bengeli literature, Nationla University of Bangladesh, Bangladesh

¹O300230006@student.ums.ac.id, ²mut122@ums.ac.id, ³sazirul.b@gmail.com

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Abstract: *This study investigates the integration of artificial intelligence (AI) cutting-edge technology, with Islamic education, and the opportunities, difficulties, ethics, and moral dilemmas related to Islamic education. Artificial intelligence (AI) has become a revolutionary force in many industries, and interest in its potential applications in education has grown usefully. The paper's objective is to shed light on how artificial intelligence (AI) can be applied to improve Islamic education's accessibility and quality while upholding the community's core beliefs. The study analyzes Artificial Intelligence in Islamic Education: Opportunities, Challenges, and Ethical Considerations through the literature study method, especially on online sources. The results show that if we can apply artificial intelligence with Ethical Considerations, it will be beneficial in this digital age to improve the accessibility of Islamic education.*

Keywords: *artificial intelligence, Islamic education, ethical considerations, opportunities, challenges.*

INTRODUCTION

Artificial intelligence is a branch of computer science involved in the research, design, and application of intelligent computers, such as computational evolution, neural networks, fuzzy systems, intelligent systems, reasoning, learning, and classification [1]. It's a branch of computer science called artificial intelligence (AI) that creates intelligent machines that can carry out jobs that people can, such as those in gaming, healthcare, and smart gadgets [2].

The product of science and technology, Artificial Intelligence has been around since the computer era and is increasing quickly along with information technology advancements that drive digitalization across all industries. This method uses an algorithmic computer process that has several benefits [3]. The character and religious values of the Muslim generation are significantly shaped by Islamic education. The application of artificial intelligence (AI) in the educational setting is a fascinating subject in the digital age with rapidly advancing technology [4][5].

Artificial intelligence (AI) is the key technology in revolutionary technological innovation and industrial transformation. In Islamic education, using competent language and honest artificial intelligence is important, along with scientific curriculum and ethical materials [6]. Artificial Intelligence is the term for artificial intelligence generated by humans. It is specifically

a technological advancement in information and communication that was first stated ten years ago [7] [8].

While some works of literature focus exclusively on Islamic education in connection to artificial intelligence, others just make fleeting references to it based on the analysis of the literature. Studies are still needed on how they provide the application of artificial intelligence in Islamic education, schools, and institutions and what more can be done next.

However, through a study of library sources and online sources, this study aims to explore the Artificial Intelligence opportunities and challenges in Islamic education, schools, and institutions.

LITERATURE REVIEW

Artificial Intelligence (AI) has been an exciting subject in the context of Islamic education, offering great opportunities, but also posing significant challenges as well as deep ethical considerations. In this context, AI promises the integration of advanced technologies to improve the efficiency and effectiveness of the learning process, especially in facilitating access to high-quality educational resources for Muslim communities around the world. AI technology can be used to personalize learning, provide timely feedback, and create interactive and engaging learning experiences, following the principles of Islamic pedagogy that emphasize holistic and moral values-based learning [7] [8].

Nevertheless, the adoption of AI in Islamic education is also faced with several challenges that need to be overcome. One is the inequality of access to technology in different regions, which can strengthen education gaps between urban and rural areas, as well as between developed and developing countries. In addition, there are also concerns related to data privacy and security, as well as the potential for discrimination or bias in AI algorithms that can affect fairness and equity in education.

Ethical aspects are also an important focus in the application of AI in Islamic education. The question of how these technologies can be used responsibly, paying attention to Islamic values such as justice, empathy, and respect for human dignity, becomes crucial. The importance of ensuring that the use of AI in Islamic education not only increases efficiency but also strengthens moral and spiritual values, as well as promotes inclusivity and justice in access to education.

Thus, while AI offers great potential to advance Islamic education, both in terms of better learning experiences and wider access to religious knowledge, it is important for stakeholders to seriously consider the challenges and associated ethical implications. Only with a holistic and value-oriented approach, the application of AI in Islamic education can be an effective instrument in preparing a generation of Muslims who are skilled, knowledgeable, and of noble character, following the vision of comprehensive Islamic education [7] [8].

Table 1. Literature Review on Artificial Intelligence in Islamic Education

No.	Researcher/Reference	Themes/Issues Discussed	Methodologists	Key Findings
1	Al-Tamimi, A.	Application of AI in Islamic Education Curriculum	Case Studies	The use of AI in Islamic learning can improve the quality of learning, and provide a more personalized, and efficient learning experience.
2	Ibrahim, N. et al.	Teachers' Perceptions of AI Integration in Islamic Learning	Survey	Most teachers believe that AI integration can enrich Islamic learning, but there are still concerns about replacing teachers.

No.	Researcher/Reference	Themes/Issues Discussed	Methodologists	Key Findings
3	Ahmad, K.	Ethics and Artificial Intelligence in the Context of Islamic Education	Literature Analysis	The importance of integrating Islamic values in the development and use of AI in education to ensure ethical compliance.
4	Al-Baghdadi, M.	Development of an Intelligent Tutor System in Qur'an Learning	System Development	The use of an intelligent tutor system in facilitating the learning of the Qur'an provides an interactive and personalized learning experience.
5	Khan, M. A.	Utilization of Chatbot in Hadith Learning	Case Studies	The use of chatbots in Hadith learning can improve the accessibility and interaction of learning, but continuous evaluation is needed.
6	Aslam, F. et al.	Implementation of AI in the Evaluation of Islamic Religious Knowledge	Experimental Research	An AI-based evaluation system can provide quick and accurate feedback in evaluating Islamic religious knowledge.

The table above lists some research related to the application of artificial intelligence (AI) in the context of Islamic education. Each study has a different focus, such as the integration of AI in the curriculum, teachers' perceptions of AI, ethics of using AI, developing intelligent tutor systems, using chatbots, and implementing AI in the evaluation of Islamic religious knowledge. Key findings from these studies are also presented to provide an overview of current developments and issues in this field.

METHODOLOGY

The methods used in this research are library research and literature review. The research is conducted on “Artificial Intelligence in Islamic Education: Opportunities, Challenges, and Ethical Considerations” through the literature study method, especially on online sources. This study conducted a literature review to obtain the relevant data to the research problem [9]. Data were collected from studies of the latest information on the internet as well as from various accessible libraries and journal articles. After the data is collected, data analysis is carried out, namely the process of organizing the data into patterns, categories, and a basic description, so that a working hypothesis can be found and formulated. The stages start from the selection, categorization, and sorting of data, then data exploration, then data verification and contextualization of data. The whole process will produce a descriptive-analytical presentation [3].

RESULTS AND DISCUSSION

Opportunities in Artificial Intelligence (AI) for Islamic Education

Muslims stand to gain greatly from artificial intelligence. Artificial Intelligence (AI) has brought about a technological revolution across various sectors. Integrating Islamic education offers countless opportunities. If appropriately designed and executed, it will greatly benefit Muslim needs [10].

Artificial intelligence plays a major role in Islamic education when it comes to administration, teaching, and learning, as well as their respective impacts. It also describes the learner paradigm in Islamic education, which is essentially the model of learners as recipients, collaborators, and leaders, and the educator paradigm, which is essentially the certainty of educators in achieving the goals of Islamic education using artificial intelligence [11].

The study's findings demonstrate the advantages of using intelligence to administer Islamic education, including improved accessibility, individualized learning opportunities, and adaptable training. Teachers can employ artificial intelligence to prepare lessons, assess student learning, and foster greater creativity in the classroom. On the other hand, artificial intelligence fosters creativity in students, who use technology to complete tasks by locating ideas, language, and library resources [12].

Another study analyzed, the great potential impact of Artificial Intelligence modelling of the Quran [13]. In the digital era, the development of artificial intelligence can be used as a translation of the holy Quran, Hadith, and different Islamic books into several world languages, and it will be like preaching Islam. Because most people if they want to know something about Islam or any kind of information they are using Artificial intelligence [14][10].

On the other research, an intriguing new aspect of Islamic education is the development of Islam and Artificial Intelligence. Islam and Artificial Intelligence's goal is fairly clear to build a network that links every person's questions to all of the hadith, ayats, historical events, and their interpretations. While the project is still in its early phases, it helps users quickly and easily access essential material from the Quran by using Natural Language Processing (NLP). All things considered, Islam & AI is a fascinating new initiative with the potential to completely transform Islamic education. Regardless of knowledge level, the personal assistant can assist in democratizing access to the enormous and intricate knowledge of Islamic literature by utilizing AI and NLP [15] [16].

Artificial Intelligence, dubbed “Chatbot as Islamic Finance Expert” (CaIFE), responds to questions about Islamic finance and banking. For customer service and sales objectives, a growing number of banks and financial institutions are utilizing chatbots, a financial innovation [15].



Diagram: Application of Artificial Intelligence [17]

Islamic education has a significant role in Muslims' daily lives. As we look to the future, technology—particularly artificial intelligence—can play a big part in raising the standard of Islamic education. From the beginning of the learning process to determining the extent to which students have understood the subject being taught, artificial intelligence may assist educators, teachers, and students in many facets of Islamic education. All things considered, artificial intelligence has the potential to be a very powerful tool for raising the standard of Islamic education. Artificial intelligence (AI) in education has the potential to raise standards of instruction and yield higher-caliber graduates [11].

Challenges and Ethical Considerations

Challenges

It's crucial to keep in mind that technology will always make some applications easier and more prevalent while making others trickier [18]. Because of the ethical ramifications of creating technological artefacts, this sector demands “responsible” in addition to “responsible use.” The focus on usage does not presuppose any particular ethical theory to be best for solving these issues; virtue ethics may be more suited than consequentialist or value-based theories [19].

The implementation of ethics through design and responsible innovation, as well as the issue of translating abstract ideas into tangible actions, are ethical concerns in AI in Islamic education [20].

In another study, the ability of AI to convey values like holiness, obedience, and halal and haram in the form of semantics is one of the major issues facing technology in Islamic education [21]. Since Islamic education depends on the direct involvement of instructors, robots or other artificial intelligence cannot fully replace the link between educators and pupils [22].

Ethical Considerations

Artificial intelligence in Islamic education raises ethical issues related to integrity, originality, professionalism, teamwork, autonomy, lifelong learning, and adaptability [23]. The ability of AI to embody moral principles like piety, obedience, and halal and haram in the form of semantics is one of the ethical concerns with AI in Islamic Education [21].

In one study, Instructors ought to cover moral, ethical, and philosophical concerns in AI classes to get students ready for the implications of AI on society [24]. Islamic moral education should begin at an early age, as childhood is the most appropriate time to inculcate good habits and influence moral development in children [25].

Bias, unemployment, socioeconomic inequality, robot consciousness, moral automation, and spiritual repercussions are all included in AI ethics. To guarantee impartial and equitable learning experiences in the framework of Islamic education, biases in the portrayal of various Islamic traditions or cultural practices need to be properly addressed [26].

Personalized learning programs raise six main ethical concerns: data ownership, privacy, autonomy, non-discrimination, surveillance, and anonymity. Therefore, we should be aware enough about these things. AI systems in Islamic education need to be culturally sensitive and adaptable to the diverse traditions within the Islamic world [27].

However, through improved learning and performance, artificial intelligence (AI) can empower people; nevertheless, to ensure its deployment in Islamic communities, ethical issues and technological problems must be resolved [11].

Implementations in Islamic Education, Schools and Institutions

The study investigates how AI is currently being implemented in Islamic schools and institutions and what steps can be taken to further its role in Islamic education and institutions. The result shows that To gauge the effectiveness of AIK learning, machine learning techniques such as the K-nearest neighbour classification algorithm are being used in Islamic educational institutions [28].

On the other hand, the implementation of Artificial Intelligence Islam learning at SMA Muhammadiyah is good, focusing on planned learning, syllabus development, and proper model selection [29]. However, AI is deployed at Islamic educational institutions through the Academic Information System (AIS), which facilitates easier access to information for both professors and students via web-based and mobile device access [30]. So, the institute can focus on it.

In Islamic boarding schools, PAI based on the national curriculum can be applied in a complementary manner with the Islamic curriculum, enhancing the quality of Islamic education and assisting in the accomplishment of national education objectives [31]. Smart application software can be developed by combining artificial intelligence with intelligent tutoring systems in Islamic religious education [32]. Artificial Intelligence-driven chatbots could offer students immediate assistance and direction on a range of Islamic education-related topics [15].

So, ensure that the Chatbot has sufficient knowledge about Islamic Education and Religious. Artificial intelligence (AI) is being used in Islamic education through the incorporation of technological innovations that use AI to boost the educational process.

Therefore, here are some ways AI can be implemented in Islamic education: AI can be used to develop an Islamic Curriculum. AI can evaluate current educational resources, provide recommendations for enhancements, and verify that the information is in line with Islamic values and beliefs. Developing an AI-driven e-learning program that assigns access to Islamic courses, lectures, and resources. AI can be used to improve the learning process in Islamic education by assisting with the gathering of assignments, locating sources, or tracking down resources [33] [34].

CONCLUSION

Artificial Intelligence has many opportunities to develop our Islamic Education site also it has some challenges that we have discussed. Making AI systems in Islamic education clear, comprehensible, and answerable to teachers and students is a moral requirement. AI technologies ought to be created with cultural sensitivity in mind, avoiding any kind of misrepresentation or cultural appropriation. Students' emotional intelligence and the adoption of Islamic education management in the classroom are significantly correlated, and this can be used as a proactive and predictive measure against deviant conduct. From the beginning of the learning process to determining the extent to which students have understood the subject being taught, artificial intelligence may assist educators, teachers, and students in many facets of Islamic education. All things considered, artificial intelligence has the potential to be a very powerful tool for raising the standard of Islamic education.

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Author Contribution

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Conflicts of Interest

All authors declare no conflict of interest.

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