

Opportunities and Challenges of Islamic Education in the Era of Artificial Intelligence : A Literature Review

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Abstract

Background:

Artificial Intelligence (AI) is driving significant transformation in education, including Islamic Education, which emphasizes character building and spiritual values. The integration of AI offers innovative opportunities while simultaneously raising ethical and pedagogical challenges.

Purpose:

This study aims to systematically examine the opportunities and challenges of Islamic Education in the era of Artificial Intelligence.

Methodology:

This study employs a *Systematic Literature Review* (SLR) using the PRISMA model. Data were collected from Google Scholar through the *Publish or Perish* application. Out of 100 identified articles, 11 were thematically analyzed.

Finding:

The findings indicate that AI has the potential to enhance the quality and efficiency of Islamic Religious Education and Qur'anic learning through personalized content, adaptive learning, academic skill development, and management innovation. However, major challenges include academic ethical violations, technological dependency, data privacy issues, distortion of Islamic values, and shifts in the role of educators.

Limitation:

This study is limited to a literature-based review and does not include empirical field data.

Originality:

This article provides a systematic synthesis highlighting the importance of integrating AI with Islamic values as a foundation for developing Islamic Education in the digital era.

Keyword:

Islamic Education; Artificial Intelligence; Opportunities; Challenges; Academic Ethics

INTRODUCTION

The rapid development of digital technology, especially Artificial Intelligence (AI), has brought significant changes to various aspects of human life, including the field of education. AI not only influences methods of learning and teaching but also transforms education management systems, learning assessment, as well as interactions between educators and learners. In the era of the Industrial Revolution 4.0 and Society 5.0, the use of AI in education is viewed as an inevitability

to increase the effectiveness, efficiency, and personalization of learning. However, this transformation also gives rise to ethical, social, and pedagogical challenges that need to be examined critically.

In the context of Islamic Education, the presence of AI brings more complex dynamics. Islamic education is not only oriented toward the transfer of knowledge but also toward the formation of character, moral values, and learners' spirituality. Therefore, the integration of AI in Islamic Education must consider harmony between technological progress and Islamic values, such as manners, morality, moral responsibility, and academic honesty. If not managed wisely, the use of AI has the potential to shift the role of educators, weaken educational relationships, and even cause a value crisis in the process of Islamic education.

Various studies show that AI has significant potential to support learning innovation, such as adaptive learning, intelligent tutoring systems, automated assessment, and broader and faster access to learning resources (Holmes et al., 2019). On the other hand, several studies also highlight serious challenges in the use of AI in education, including issues of plagiarism, technological dependency, declining critical thinking skills, as well as ethical and data privacy concerns (Luckin et al., 2016; Zawacki-Richter et al., 2019). In Islamic Education studies, a number of scholars emphasize the importance of an integrative approach between technology and Islamic values so that digital innovation does not contradict the holistic objectives of Islamic education (Rahman, 2022; Suryana, 2023). However, studies that specifically discuss the opportunities and challenges of Islamic Education in the AI era remain fragmented and have not yet been systematically mapped.

Based on the preliminary studies mentioned above, there is a research gap in the form of a lack of comprehensive literature that examines the opportunities and challenges of Islamic Education in the era of Artificial Intelligence from an integrative perspective between technology and Islamic values. Some studies tend to discuss AI in education in a general sense, while Islamic Education research mostly focuses on normative aspects without in-depth analysis of current technological developments. Therefore, this research becomes urgent to provide a comprehensive conceptual mapping of how AI can serve as both a strategic opportunity and a real challenge for Islamic Education in the digital era.

Based on the background described above, this study aims to analyze and synthesize various scientific literature related to the opportunities and challenges of Islamic Education in the era of Artificial Intelligence. Through a literature review approach, this research is expected to provide deep conceptual understanding and serve as a reference for educators, Islamic education institution managers, and researchers in responding wisely to AI developments while remaining grounded in Islamic values. Therefore, this study is entitled **“Opportunities and Challenges of Islamic Education in the Era of Artificial Intelligence: A Literature Review.”**

Method

This study employs a Systematic Literature Review (SLR) approach, which aims to identify, evaluate, and systematically synthesize various research findings relevant to the topic of opportunities and challenges of Islamic education in the era of artificial intelligence. The SLR method was selected because it is capable of providing a comprehensive and structured overview of existing scientific studies, while minimizing bias in the literature search and analysis process.

The SLR process was conducted through several systematic stages, including literature identification, selection, analysis, and thematic synthesis. At the identification stage, researchers searched for scientific articles using the Google Scholar database with the assistance of the Publish or Perish software. The search was carried out using the keywords *Islamic Education, Opportunities, Challenges, and Artificial Intelligence*. From this initial search process, a total of 100 potential articles relevant to the focus of the study were identified.

The literature selection stage was conducted by applying strict inclusion and exclusion criteria. The inclusion criteria for this study consisted of: (1) articles published in scientific journals within the period 2018–2025, (2) articles indexed in Google Scholar, and (3) articles that substantively discuss Islamic Education and its relevance to Artificial Intelligence, from both opportunity and challenge perspectives. Meanwhile, the exclusion criteria included: (1) articles available only in the form of abstracts or short summaries, (2) publications not originating from scientific journals, (3) articles not relevant to the topic of opportunities and challenges of Islamic Education in the AI era, and (4) non-academic publications such as opinion pieces, popular articles, or non-scientific reports.

Data analysis in this study was conducted by referring to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) model. The PRISMA framework was used to ensure transparency and traceability in the literature selection process, starting from the stages of identification, screening, and eligibility, to the final determination of analyzed articles. Articles that met all inclusion criteria were then analyzed in depth to identify the main themes related to the opportunities and challenges of Islamic education in the era of artificial intelligence. The results of this analysis were subsequently synthesized thematically to produce a comprehensive and systematic conceptual understanding in accordance with the objectives of the study.

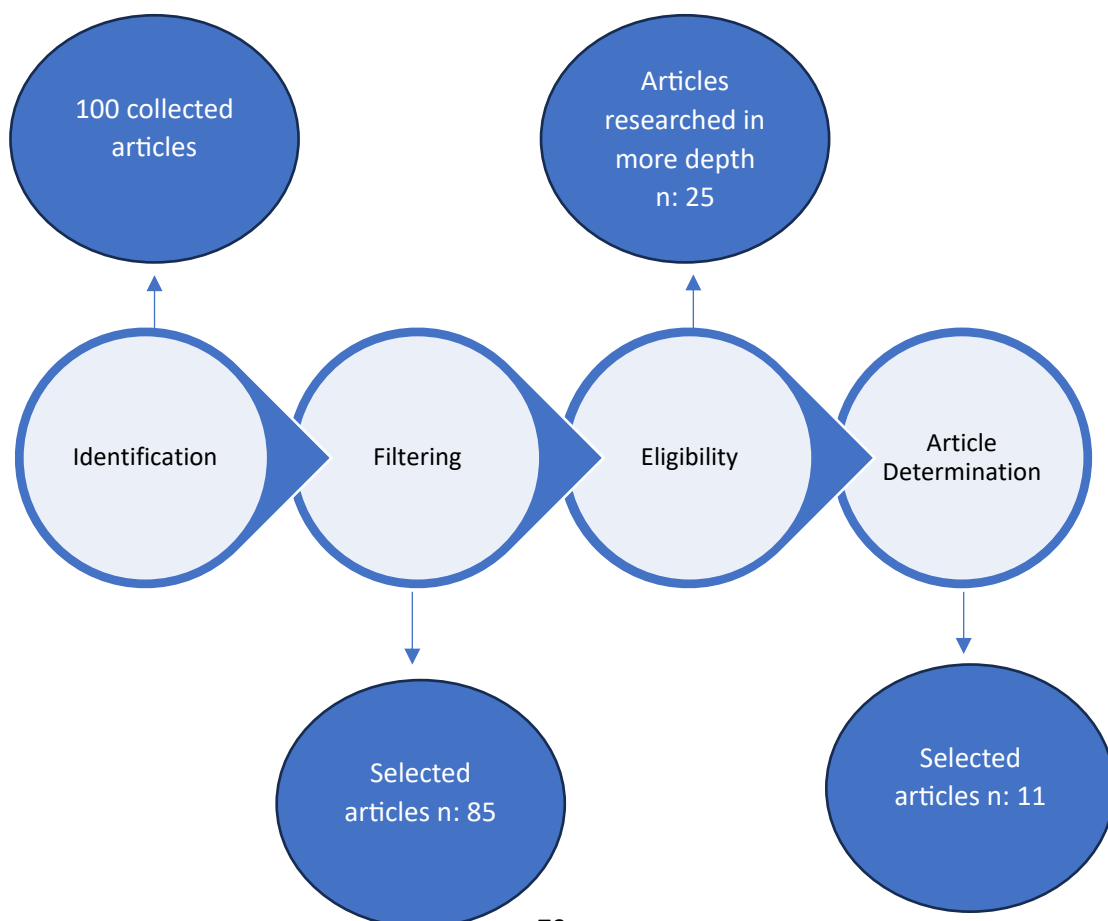


Figure 1. PRISMA Flow Test

Results and Discussion

Result

Based on the results of the analysis of the 11 selected articles, it was found that the use of Artificial Intelligence in Islamic Education can be classified into several main focus areas, namely Islamic Religious Education (PAI) learning, Al-Qur'an learning, academic skill development, and innovation in Islamic education management. These findings are further explained in the following table:

Table 1. Research Results

No.	Focus Findings	Opportunity	Challenge	Source
1	The role of AI in Islamic Education learning	Increase quality learning with personal & adaptive content (machine learning, chatbot, AR).	Dependence technology, problems data privacy.	M Huda, I Suwahyu Peran Artificial Intelligence (Ai) Dalam Pembelajaran Pendidikan Agama Islam 2024
2	AI trends & perceptions in Islamic education; potential violation academic	AI as tool saver time & assignment effective academics.	Risk of academic misconduct (plagiarism, cheating), doubt to AI accuracy & effectiveness .	N Ali, dkk. ArtificialIntelligence (AI)dalam pendidikan Islam: trends, persepsi, dan potensi pelanggaran akademik di kalangan mahasiswa 2023
3	Contribution of AI in Qur'an studies	Increase access information, analysis text in-depth, personal learning, education interactive, preservation script ancient.	Challenge accuracy interpretation, sensitivity religious issues ethics.	M Mauluddin Kontribusi Artificial Intelligence (AI) pada Studi Al Quran di Era Digital; Peluang dan Tantangan 2024
4	Impact negative & distortion AI in Islamic education	-	Distortion understanding religious values, loss creativity students, changes role of teachers, risks distortion	F Hakim, dkk. Artificial Intellegence (AI) dan Dampaknya Dalam Distorsi Pendidikan Islam

			interpretation religious texts.	2024
5	Utilization of AI for learning the Qur'an	Increase efficiency & effectiveness learning the Qur'an.	Dependence excessive can hinder development intelligence human; implications ethical & practical.	A Sukmawati Pemanfaatan Artificial Intelligence Untuk Meningkatkan Efisiensi Pembelajaran Al Quran 2024
6	Benefits & challenges use of AI in Islamic Education learning	Increase quality teaching & learning in institutions Islamic education.	Risk ethics, data security, potential replacement role of teacher; required use wise & collaborative multidisciplinary.	M Muchlis Penggunaan Artificial Intelligence (AI) dalam Pembelajaran Pendidikan Agama Islam: Manfaat dan Tantangan 2025
7	AI as tool help skills write Islamic Education students	Give bait come back automatic , analysis need individual learning , development skills data- based .	Challenge skills writing in an era of disruption, change paradigm learning .	S Sulaeman, dkk. Peran Artificial Intelligences Sebagai Alat Bantu Dalam Meningkatkan Keterampilan Menulis Mahasiswa PAI Di Era Disruptif 2024
8	Opportunities & challenges Islamic education in the industrial era 4.0 for Islamic Education students	Facilitating development potential self & competence, opening field Work new, speed up development institution Islamic education.	Potential individualism high, competition speed, need IT skills, resistance understanding double.	M Kosim Peluang dan Tantangan Pendidikan Islam Era Industri 4.0: Strategi Mahasiswa PAI menjadi Pendidik Sejati 2020
9	The role of AI in innovation management Islamic education	Automation of administrative processes, improvement quality learning through personalization, development of	Need preparation IT infrastructure, human resources, and approach collaborative multidisciplinary.	A Sodik Peran kecerdasan buatan (Artificial Intelligence) dalam mendorong inovasi manajemen

		adaptive education models.		pendidikan Islam di era revolusi industri 4.0. 2024
10	Islamic Education based on AI technology	Make it easier delivery material, improve quality learning active & innovative, measuring understanding students, speed up understanding of Islamic Education.	-	F Sarinda, dkk. Pendidikan agama Islam berbasis teknologi (AI) artificial intelligence 2023
11	Implementation of AI in Islamic Education learning in universities tall	Experience Study more personal, improvement quality material, simulation learning.	Issue ethics & sensitivity religious, availability source power, apathy & resistance to technology, guarantee quality content .	I Suhartini, R Rahman The use of artificial intelligence in islamic religious education at higher education institutions: An analysis of opportunities and challenges 2023

Source : Processed data (2025)

From the perspective of opportunities, the majority of studies indicate that Artificial Intelligence plays a positive role in improving the quality of Islamic Education learning through more personalized and adaptive content, such as the use of machine learning, chatbots, and augmented reality. AI has also been shown to enhance the efficiency of Qur'anic learning by providing faster, more interactive, and learner-centered access to educational resources. In addition, AI contributes to the development of students' academic skills in Islamic Education, particularly in writing abilities, through automated feedback and data-driven learning analysis. From a managerial perspective, AI opens opportunities for innovation in Islamic education management through administrative automation and data-based decision-making.

However, the findings also reveal several significant challenges. These challenges include excessive dependence on technology, the risk of academic ethics violations such as plagiarism and academic dishonesty, issues related to data privacy and security, as well as the potential distortion of Islamic value understanding due to the uncontrolled use of AI. Several studies also highlight concerns regarding the shifting role of teachers, along with a decline in creativity and critical thinking skills among learners.

Discussion

The findings of this study indicate that Artificial Intelligence holds a strategic position as a supporting tool for the transformation of Islamic Education in the digital era. The opportunities offered by AI align with the demands for improving learning quality, effectiveness, and the

relevance of Islamic education amid rapid societal changes. The utilization of AI in Islamic Religious Education (PAI) and Qur'anic learning—such as adaptive learning systems, learner needs analysis, and interactive content provision—has the potential to address challenges related to time constraints, limited learning resources, and differences in learners' abilities. These findings are consistent with the research of Holmes et al. (2019), which confirms that AI can enhance learning personalization and quality while expanding equitable access to education.

However, these opportunities cannot be separated from serious ethical and pedagogical challenges. Islamic education, which emphasizes moral formation and spiritual values, requires caution in integrating AI technologies. Excessive reliance on AI may erode the role of educators as *murabbi* and moral role models, as well as weaken the internalization of Islamic values in the educational process. The risk of academic ethics violations, such as plagiarism and academic dishonesty, also becomes a major concern, as highlighted by Ali et al. (2023) and Luckin et al. (2016). Therefore, AI in Islamic Education must be positioned as a learning support tool rather than a replacement for human roles, while consistently upholding ethical principles, moral responsibility, and academic integrity.

Furthermore, the findings of this study reinforce previous research emphasizing the importance of an integrative approach in the utilization of AI technology within Islamic Education. Rahman (2022) and Suryana (2023) argue that the success of technology integration in Islamic education is largely determined by the ability of educational institutions to harmonize digital innovation with Islamic values. AI should not be implemented merely in a neutral or technical manner; instead, it must be contextualized within the objectives of Islamic education, which are oriented toward the development of intellect, morality, and learners' spirituality. This confirms that the value dimension is a key distinguishing factor between Islamic Education and general education in responding to AI developments.

In addition, this study extends previous findings by confirming that the challenges of AI implementation in Islamic Education are not only individual but also structural and institutional in nature. Zawacki-Richter et al. (2019) demonstrate that successful AI implementation in education requires infrastructure readiness, human resource competence, and clear policy frameworks. Within the context of Islamic Education, these challenges become more complex, as they must be accompanied by strong ethical and religious guidelines. Therefore, the integration of AI in Islamic Education necessitates a collaborative approach involving technology, pedagogy, and Islamic values. Without a clear value-based framework and supportive policies, the use of AI may potentially distort the core objectives of Islamic Education itself.

Conclusion

Based on the results of the Systematic Literature Review, it can be concluded that Artificial Intelligence presents both opportunities and challenges for Islamic Education in the digital era. AI has the potential to improve learning quality, enhance the efficiency of Qur'anic education, support academic skill development, and foster innovation in Islamic education management. However, at the same time, AI also poses challenges in the form of risks to academic ethics, technological dependency, distortion of religious value understanding, and shifts in the role of educators.

Therefore, the utilization of AI in Islamic Education must be designed in a wise, ethical, and value-based manner. Islamic education is required not only to adapt to technological developments but also to safeguard the core objectives of education, which are oriented toward the formation of character, morality, and learners' spirituality. This study recommends the development of clear

policies, ethical guidelines, and further empirical research related to the implementation of AI within the context of Islamic Education.

Bibliography

- Aziz, A., Sholehah, C. A., & Rachman, P. (2023). Dinamika transformasi pendidikan agama islam: Sinergitas artificial intelligence dalam peningkatan pemahaman keagamaan. *BAHTSUNA: Jurnal Penelitian Pendidikan Islam*, 5(2), 122-127.
- Hakim, F., Fadlillah, A., & Rofiq, M. N. (2024). Artificial Intellegence (AI) dan Dampaknya Dalam Distorsi Pendidikan Islam. *Urmatul Wutsqo: Jurnal Studi Kependidikan Dan Keislaman*, 13(1), 129-144.
- Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial Intelligence in Education: Promises and Implications for Teaching and Learning*. Boston: Center for Curriculum Redesign.
- Huda, M., & Suwahyu, I. (2024). Peran Artificial Intelligence (Ai) Dalam Pembelajaran Pendidikan Agama Islam. *REFERENSI ISLAMIKA: Jurnal Studi Islam*, 2(2), 53-61.
- Kosim, M. (2020). Peluang dan Tantangan Pendidikan Islam Era Industri 4.0: Strategi Mahasiswa PAI menjadi Pendidik Sejati. *Murabby: Jurnal Pendidikan Islam*, 2(2), 125-135.
- Kudriani, N. ., Murdana, F. ., & Muriati, L. . (2023). Transformasi Digital dalam Pendidikan: Tantangan dan Peluang Penerapan Kecerdasan Buatan dalam Proses Pembelajaran. *Jurnal Literasi Digital*, 3(3), 129–139. <https://doi.org/10.54065/jld.3.3.2023.596>
- Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). *Intelligence Unleashed: An Argument for AI in Education*. London: Pearson Education.
- Mauluddin, M. (2024). Kontribusi Artificial Intelligence (AI) pada Studi Al Quran di Era Digital; Peluang dan Tantangan. *Madinah: Jurnal Studi Islam*, 11(1), 99-113.
- Muchlis, M. (2025). Penggunaan Artificial Intelligence (AI) dalam Pembelajaran Pendidikan Agama Islam: Manfaat dan Tantangan. *Kreatif: Jurnal Pemikiran Pendidikan Agama Islam*, 23(1), 100-109.
- Rahman, A. (2022). Pendidikan Islam di era digital: Tantangan dan peluang integrasi teknologi. *Jurnal Pendidikan Islam*, 11(2), 123–138.
- S, W., Suhartini, I., & Rahman, R. (2023). The use of artificial intelligence in islamic religious education at higher education institutions: An analysis of opportunities and challenges. *Jurnal Kawakib*, 4(2), 146-154. <https://doi.org/10.24036/kwkib.v4i2.175>
- Sarinda, F., Martina, M., Noviani, D., & Hilmin, H. (2023). Pendidikan agama Islam berbasis teknologi (AI) artificial intelligence. *Jurnal Kajian Penelitian Pendidikan Dan Kebudayaan*, 1(4), 103-111.
- Sodik, A. (2024). Peran kecerdasan buatan (Artificial Intelligence) dalam mendorong inovasi manajemen pendidikan Islam di era revolusi industri 4.0. *An Naba*, 7(1), 9-18.
- Suhartini, I., & Rahman, R. (2023). The use of artificial intelligence in islamic religious education at higher education institutions: An analysis of opportunities and challenges. *Jurnal Kawakib*, 4(2), 146-154.

- Sukmawati, A. (2024). Pemanfaatan Artificial Intelligence Untuk Meningkatkan Efisiensi Pembelajaran Al Quran. *Dinamika Penelitian: Media Komunikasi Penelitian Sosial Keagamaan*, 24(01), 53-72.
- Sulaeman, S., Anggraini, R., Paramansyah, A., Fata, T. H., & Judijanto, L. (2024). Peran Artificial Intelligences Sebagai Alat Bantu Dalam Meningkatkan Keterampilan Menulis Mahasiswa Pendidikan Agama Islam Di Era Disruptif. *Innovative: Journal Of Social Science Research*, 4(1), 5206-5216.
- Suryana, D. (2023). Etika pemanfaatan kecerdasan buatan dalam pendidikan Islam. *Tarbawi: Jurnal Pendidikan Islam*, 8(1), 45–60.
- Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education. *International Journal of Educational Technology in Higher Education*, 16(39), 1–27.