

Islam and Artificial Intelligence (AI): Ethical Considerations and the Potential Impact on Islamic Societies

Islam dan Kecerdasan Buatan (AI): Pertimbangan Etis dan Dampak Potensialnya terhadap Masyarakat Islam

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ABSTRACT

This research discusses the challenges and opportunities faced by the Muslim community in applying artificial intelligence (AI) in the field of education, especially in the context of teaching Islamic values. Using a systematic literature review approach, this research identifies various barriers related to technological infrastructure, accessibility, and ethical considerations that arise from the use of AI. On the other hand, this research also highlights the potential of AI to improve the effectiveness of teaching and learning, and provides examples of successful implementation in various countries. The research results show that collaboration between stakeholders, including educational institutions, ulama, and government, is very important to overcome existing challenges. Policy recommendations and strategies for AI integration in line with Islamic values are also presented. It is hoped that this research can make a significant contribution in understanding the application of AI in Islamic education and pave the way for further research in this area.

Keywords: Artificial Intelligence, Islamic Education, Challenges, Opportunities, Ethics, Islamic Values, Systematic Literature Review, Stakeholder Collaboration.

ABSTRAK

Penelitian ini membahas tantangan dan peluang yang dihadapi oleh komunitas Muslim dalam penerapan kecerdasan buatan (AI) dalam bidang pendidikan, khususnya dalam konteks pengajaran nilai-nilai Islam. Dengan menggunakan pendekatan *systematic literature review*, penelitian ini mengidentifikasi berbagai hambatan yang berkaitan dengan infrastruktur teknologi, aksesibilitas, dan pertimbangan etis yang muncul dari penggunaan AI. Di sisi lain, penelitian ini juga menyoroti potensi AI untuk meningkatkan efektivitas pengajaran dan pembelajaran, serta menyediakan contoh implementasi sukses di berbagai negara. Hasil penelitian menunjukkan bahwa kolaborasi antara pemangku kepentingan, termasuk lembaga pendidikan, ulama, dan pemerintah, sangat penting untuk mengatasi tantangan yang ada. Rekomendasi kebijakan dan strategi untuk integrasi AI yang sejalan dengan nilai-nilai Islam juga disajikan. Diharapkan penelitian ini dapat memberikan kontribusi yang berarti dalam memahami penerapan AI dalam pendidikan Islam dan membuka jalan bagi penelitian lebih lanjut di bidang ini.

Kata Kunci: Kecerdasan Buatan, Pendidikan Islam, Tantangan, Peluang, Etika, Nilai-nilai Islam, Sistematis Literature Review, Kolaborasi Pemangku Kepentingan.

1. Introduction

The development of artificial intelligence (AI) is one of the most transformative phenomena of the 21st century, having a significant impact on various sectors such as the economy, health and education. AI's capacity to process large amounts of data with high speed and accuracy has resulted in innovative solutions that increase efficiency in these areas. In the educational context, AI technology is starting to be integrated to personalize learning experiences, potentially revolutionizing traditional teaching methods as well as changing the role of educators through AI-driven systems, such as virtual teachers or "teacher bots" (Popenici & Kerr, 2017). However, the rapid advancement of AI also raises a

number of ethical concerns that need to be addressed, especially in contexts where cultural and religious values, such as those found in Muslim societies, play an important role.

The ethical implications of AI applications are especially relevant in Muslim communities, where the integration of Islamic values in technology development is essential. Research shows that although AI can effectively disseminate information regarding Islamic teachings, its higher cognitive capabilities can pose challenges that conflict with Islamic principles (Nawi et al., 2021). Therefore, an ethical framework is needed that addresses issues such as privacy, autonomy, and justice to ensure that AI technology is in line with Islamic values (Prathomwong & Singsuriya, 2022). Additionally, the global AI ethical guidance landscape often emphasizes the protection of individual rights, which may not fully encompass collective ethical considerations that are important in Islamic contexts (Jobin & Ienca, 2019). Thus, a deep understanding of how AI can be harmonized with Islamic teachings is vital for responsible implementation.

Education functions as a fundamental pillar in instilling ethical values and shaping individual character, especially amidst technological advances such as AI. Educational institutions have a duty to prepare students not only academically, but also ethically, and encourage critical thinking about the implications of technology for society (Holmes et al., 2021). The integration of AI in educational settings can facilitate personalized learning, but also requires a robust ethical framework to address potential bias and privacy concerns (Baskara, 2023). Furthermore, Islamic education must adapt to the challenges posed by globalization and technological disruption, so that Islamic values remain relevant and intact (Hudia, 2023). By providing future generations with knowledge and an ethical foundation, educational institutions can become agents of change that guide students through the complexities of a technology-driven world. In conclusion, the intersection between AI developments and Islamic values presents both opportunities and challenges. As AI continues to advance, it is critical for Muslim communities to engage in discussions regarding its ethical implications and develop frameworks that integrate their values into technological advances. This approach not only protects religious principles, but also encourages responsible and inclusive AI applications, benefiting society as a whole.

This research aims to provide a comprehensive understanding of the challenges and opportunities faced by the Muslim community in applying artificial intelligence (AI) in the field of education. With the development of AI technology, educational institutions in Muslim communities are faced with various obstacles, both in terms of infrastructure, accessibility, and conformity with Islamic values. Therefore, it is important to identify and analyze these challenges in depth, in order to provide a clear picture of how AI can be effectively integrated in the context of Islamic education. Apart from that, this research also aims to develop relevant recommendations for the integration of AI in accordance with Islamic values. In order to achieve this goal, an analysis of existing literature will be carried out, as well as a mapping of best practices that have been implemented in various educational institutions in Muslim countries. It is hoped that these recommendations will serve as a guide for educators, policy makers and other stakeholders in formulating strategies that not only exploit the potential of AI, but also ensure that its implementation is in line with Islamic ethical principles. Thus, this research not only contributes to the development of knowledge in the fields of education and technology, but also to efforts to ensure that technological innovation serves as a tool that strengthens moral and social values in Muslim societies.

The research questions focused on in this study are: What are the challenges and opportunities faced by the Muslim community in applying artificial intelligence (AI) in the field of education, especially in the context of teaching Islamic values? This question was formulated to explore in depth various aspects related to the application of AI in the Islamic education environment. In this context, the challenges in question include various technical, social and cultural obstacles that Islamic educational institutions may face in adopting AI technology. These include, but are not limited to, inadequate infrastructure issues, gaps in technology access between various levels of society, as well as potential conflicts between AI applications and Islamic ethical principles. On the other hand, this research also wants to identify opportunities that can be utilized by the Muslim community to improve the process of learning and teaching Islamic values through AI technology. These opportunities include AI's ability to personalize learning experiences, increase educational accessibility, and provide innovative tools to teach religious concepts in ways that are more engaging and relevant to younger generations. By answering this question, research is expected to make a significant contribution to the development of effective and ethical strategies in the application of AI in the field of education, as well as supporting the teaching of Islamic values that are relevant to the needs and challenges of the modern era.

2. Method

2.1 Research Design

This research uses a systematic literature review approach, which aims to identify, evaluate, and summarize all relevant research related to the challenges and opportunities of applying artificial intelligence (AI) in Islamic education. This approach was chosen because it allows researchers to obtain a comprehensive overview of existing literature, as well as identify patterns that have emerged in previous research.

Inclusion criteria used in selecting articles included:

- Articles published in peer-reviewed journals and have relevance to AI and Islamic education.
- Studies that address specific challenges or opportunities related to AI integration in educational contexts.
- Research published within the last five years to ensure relevance and novelty of data.

Meanwhile, exclusion criteria include:

- Articles that are not directly related to education or do not discuss the ethical aspects of AI.
- Studies that use non-empirical methodology or are descriptive in nature without in-depth analysis.
- Publication in a language other than English or Indonesian which may prevent full understanding of the content.

2.2 Data Collection Process

Data sources used in this research include various academic databases, such as Google Scholar, JSTOR, Scopus, and ProQuest. In addition, related journals that focus on educational technology, Islamic ethics, and AI are also taken into account, as well as proceedings from relevant international conferences. The search technique was carried out using predetermined keywords, such as "AI in Islamic education," "AI ethics," "Islamic education challenges," and "AI opportunities." Each article found is then filtered based on predetermined inclusion and exclusion criteria. This process aims to ensure that only the most relevant and high-quality articles are included in the literature review.

2.3 Data Analysis

Data analysis was carried out using the thematic analysis method, which aims to identify and categorize the challenges and opportunities faced by the Muslim community in implementing AI in education. In this process, data obtained from selected articles will be analyzed to find key themes that recur and reflect different views and experiences regarding AI integration. To ensure the reliability and credibility of the data, validation procedures will be implemented. This includes data triangulation, where information from different sources and types of studies is compared and confirmed. In addition, an internal peer review will be carried out involving fellow researchers to obtain constructive input and criticism. These steps aim to improve the quality of research and ensure that the results obtained truly reflect existing challenges and opportunities.

3. Results

3.1 Challenges in Implementing AI in Islamic Education

The integration of artificial intelligence (AI) into Islamic education presents various challenges that need to be overcome so that the potential of this technology can be utilized effectively. One of the main challenges is the technological barriers that many educational institutions in Muslim-majority countries face. These barriers include inadequate technological infrastructure, limited internet access, and outdated hardware, which significantly hinder the adoption of AI in educational settings. In rural areas, this problem is further exacerbated by more limited access to technology as well as training for educators on the use of sophisticated technological tools (Hakim, 2023; Eden, 2024). Insufficient strong technological support can result in ineffective implementation of AI, which ultimately affects the quality of education provided to students. Furthermore, accessibility is also a critical concern. There are marked disparities in technology access among various socioeconomic groups, which particularly impacts students from low-income backgrounds. These students may not have the necessary devices to fully interact with AI-based educational tools, thereby perpetuating inequities in learning opportunities (AlAli, 2024). This digital divide can widen existing educational gaps, resulting in unequal learning outcomes and further marginalizing disadvantaged groups in the education system (Hakim, 2023; Hakim, 2024).

These accessibility challenges highlight the need for focused interventions to ensure that all students can benefit from AI technologies, regardless of their socioeconomic status.

Ethical considerations also play an important role in discussions regarding AI in Islamic education. AI integration must be in line with the moral and ethical values upheld in Islamic teachings. Concerns have emerged regarding the transparency and fairness of algorithms used in educational applications, which can introduce bias in assessment and decision-making processes (Holmes et al., 2021; Nguyen et al., 2022). Such biases can undermine students' trust in the education system and the values it promotes, making it critical to develop AI systems that are not only technically effective but also ethical and in accordance with Islamic principles (Khoirunisa, 2023). Establishing an ethical framework for AI in education is crucial for navigating these challenges and ensuring that the application of AI technologies respects the cultural and religious context of Islamic education (Eden, 2024; Akgün & Greenhow, 2021). In conclusion, challenges in integrating AI into Islamic education include technological barriers, accessibility issues, and ethical considerations. Overcoming these challenges is critical to the successful implementation of AI technologies in a manner that is fair, effective, and consistent with Islamic values. A collaborative approach involving educators, technologists, and policymakers is needed to create an inclusive educational environment, one that harnesses the transformative potential of AI while maintaining high ethical standards (AlAli, 2024; Holmes et al., 2021).

3.2 Opportunities Presented by AI

Artificial intelligence (AI) offers transformative opportunities to improve the effectiveness of teaching and learning in Islamic education. One of the most significant advantages of AI is its ability to personalize the learning experience. By leveraging sophisticated algorithms, AI can analyze students' individual needs, learning styles, and progress, thereby facilitating an adaptive and personalized teaching approach. This personalized learning is very important in Islamic education, where the transmission of religious values must be adapted to the various understandings of students from diverse backgrounds (Firnando, 2024; Hakim, 2023). The integration of AI into educational frameworks enables the creation of customized learning modules to meet the unique needs of each student, thereby increasing their engagement and understanding (Li & Wong, 2023; Ezeoguine, 2024). Furthermore, AI also serves as a powerful tool to increase student engagement through interactive technologies such as chatbots and virtual assistants. These tools give students immediate access to learning materials, allowing them to ask questions and receive feedback in real-time, which fosters a more interactive and accessible learning environment (George, 2023; Ezeoguine, 2024; Thong, 2023). AI's ability to facilitate instant communication and support not only enhances the learning experience but also empowers students who may feel hesitant to participate in a traditional classroom setting (Nguyen, 2024). This interactive dimension of AI is essential for creating a dynamic educational atmosphere that encourages active participation and collaboration among students (Zulkifli et al., 2022).

Successful implementation of AI in Islamic education can be observed in various countries. For example, in Malaysia, universities are starting to utilize AI-based learning systems that help students understand complex concepts in religious studies. This system not only provides a personalized learning experience but also creates a platform for collaborative discussions among students (Firnando, 2024; Hakim, 2023). Likewise, in Indonesia, educational institutions have adopted AI technology for Arabic language teaching, using applications that offer fast and accurate feedback on language skills, thereby enabling students to improve their abilities more effectively (Firnando, 2024; Abbas et al., 2023). This kind of implementation shows how AI can enrich the educational landscape in an Islamic context by providing educational experiences tailored to students' needs.

Moreover, the role of AI goes beyond classroom teaching; it also includes distribution of educational materials through digital platforms. Many institutions are leveraging AI to develop relevant and engaging content that students can access at any time and from anywhere. This capability not only expands access to education but also encourages inclusivity and equality in the learning environment (George, 2023; Firnando, 2024; Tang, 2024). By utilizing AI technology, educational institutions can create a learning atmosphere that is more effective and in accordance with Islamic principles, which ultimately enriches students' educational experiences and facilitates meaningful teaching practices (Hakim, 2023; Hernawati, 2024). In conclusion, the integration of AI in Islamic education offers promising opportunities to improve teaching and learning. By personalizing educational experiences, encouraging student engagement, and expanding access to learning resources, AI can significantly improve the effectiveness of Islamic education. As educational institutions continue to explore and apply AI

technologies, they will likely create more adaptive, inclusive, and enriching learning environments that suit the needs of diverse students.

3.3 Case Comparison

The implementation of artificial intelligence (AI) in Islamic education presents both challenges and opportunities, especially in rich cultural contexts such as Malaysia and Indonesia. This comparative analysis highlights how local social and cultural dynamics shape the integration of AI technologies in educational frameworks.

3.3.1. Case 1: Malaysia

In Malaysia, the government has proactively collaborated with higher education institutions to develop AI-based learning platforms that integrate Islamic values along with academic knowledge. This approach has led to the implementation of adaptive learning systems designed specifically for the Islamic curriculum, thereby enhancing the educational experience for students (-, 2023). However, significant challenges remain, especially related to technological infrastructure disparities between urban and rural areas. While urban institutions have adopted advanced technology, rural schools often face the problem of inadequate internet access and limited technological resources (Saputra, 2022). The Malaysian government has recognized this challenge and initiated programs to improve connectivity and provide training for educators, which offers a unique opportunity to bridge this digital divide (Asror, 2023).

3.3.2. Case 2: Indonesia

In contrast, Indonesia, which has the world's largest Muslim population, faces different challenges in adopting AI in Islamic education. Many educational institutions still rely on traditional teaching methods, which hinders the integration of modern technologies such as AI (Nugraha et al., 2019). Although there is growing interest in AI applications for Arabic and Al-Qur'an learning, issues related to accessibility and digital skills of educators remain obstacles (Thoha, 2023). Additionally, cultural skepticism towards AI as a potential threat to traditional educational practices complicates its acceptance within some communities (Hasanah & SZ, 2023). However, there are opportunities to build a better understanding of the benefits of AI through targeted awareness campaigns and training programs, which could facilitate greater acceptance of the technology in educational contexts (Hastasari et al., 2022).

3.3.3. Discussion: Cultural and Social Context

The contrasting experiences between Malaysia and Indonesia illustrate the profound impact of cultural and social context on the implementation of AI in Islamic education. In Malaysia, a combination of government support and infrastructure advances have accelerated technology adoption, while Indonesia still faces issues of acceptance and educator training needs ("The Transformative Impact of Artificial Intelligence on Educational Financial Management," 2023). Despite these differences, both countries have opportunities to leverage AI to enhance educational experiences and strengthen Islamic values. This comparative analysis emphasizes the importance of adapting AI solutions to local contexts, ensuring that integration strategies are ethical and effective in promoting educational progress (Owoc et al., 2021). In conclusion, the integration of AI in Islamic education in Malaysia and Indonesia reveals a complex interaction between challenges and opportunities shaped by cultural and social factors. By understanding these dynamics, stakeholders can develop more effective strategies to harness the potential of AI to enrich Islamic education.

4. Discussions

4.1 Ethical Implications of AI Applications

The integration of artificial intelligence (AI) in education, particularly in the context of teaching Islamic values, raises significant ethical implications that need to be carefully considered. AI's potential to increase educational effectiveness is hampered by challenges such as unequal access to technology and the risk of reinforcing bias through algorithmic decision making. As highlighted by Klímová et al., ethical issues surrounding AI in education require a focus on transparency, fairness, and accountability to ensure that the technology is in line with the moral and social values upheld by Muslim communities (Klímová et al., 2023). This alignment is very important, because the algorithms used in educational applications must be designed to avoid perpetuation of stereotypes or discrimination, thereby

maintaining the integrity of Islamic teachings (Ferrara, 2023). Ethical considerations in AI design are multifaceted. For example, the principle of algorithm vigilance, which involves monitoring and understanding the effects of algorithms, is critical to preventing negative outcomes in educational settings (Klímová et al., 2023). Additionally, collaboration between educators and technology developers is vital to creating an equitable learning environment. This collaboration can help ensure that AI systems are designed to provide all students, regardless of their socio-economic background, equal opportunities to learn and develop (Holmes et al., 2021). The ethical framework proposed by Holmes et al. emphasizes the need for flexibility to adapt to socio-cultural norms and evolving educational systems, which is very relevant in the context of Islamic education (Holmes et al., 2021).

Accountability is another critical ethical concern in the use of AI in education. Educators and institutions must be prepared to explain how AI-driven decisions affect students, ensuring that these decisions are consistent with Islamic ethical principles such as justice and goodness (Baskara, 2023). This accountability is important not only to maintain trust in educational institutions, but also to create an environment where students feel valued and respected (Nguyen et al., 2022). The establishment of ethics committees within educational institutions can provide oversight and guidance on the ethical use of AI, ensuring that such applications are both effective and in line with Islamic values (Yu & Yu, 2023).

To reduce the ethical risks associated with AI in education, several recommendations can be made. First, training programs for educators and technology developers on ethical issues related to AI are essential to raise awareness and encourage responsible design and implementation practices (Zhang et al., 2022). Second, the development of clear guidelines or frameworks for AI applications in Islamic education can help ensure that ethical principles are integrated into the technology from the start (Tuomi, 2023). These guidelines should include basic principles that must be adhered to by all stakeholders, thereby promoting a responsible approach to AI that supports the teaching of Islamic values with integrity (Adigüzel et al., 2023). In conclusion, the challenges and opportunities presented by AI in the context of Islamic education must be navigated within a comprehensive ethical framework. By addressing the ethical implications of AI implementation, Muslim communities can harness the potential of this technology to enhance the teaching of Islamic values while maintaining the underlying moral and social integrity of their society. Careful consideration of ethical principles in the design and implementation of AI will be key to achieving this balance.

4.2 Strategies for Facing Challenges

The integration of artificial intelligence (AI) in education, particularly among Muslim communities, presents a unique set of challenges and opportunities. To effectively address this challenge, a comprehensive action plan involving various stakeholders is needed. These plans should focus on strengthening technology infrastructure, developing responsive curricula, engaging scholars and educators for ethical guidance, increasing community awareness, and promoting ongoing research and evaluation.

4.2.1. Strengthening Technology Infrastructure

The first step in implementing AI in education is to improve the technology infrastructure across educational institutions. This involves collaboration between educational institutions, government agencies, and the private sector to ensure equitable access to technology, especially in underserved urban and rural areas. Stable internet access and the necessary hardware are essential to support an AI-based learning environment (Hakim, 2023). Additionally, training programs for educators should be prioritized to equip them with the skills necessary to effectively utilize AI technology in their teaching practices (Chen et al., 2020; Alshehri, 2023). Such training can help educators not only understand AI tools but also integrate them into their pedagogical approaches, thereby improving the overall educational experience (Baskara, 2023).

4.2.2. Developing a Responsive Curriculum

In line with infrastructure improvements, educational institutions must develop curricula that are responsive to advances in AI technology. This curriculum should include ethical considerations and the application of technology in an Islamic context. By integrating lessons on the ethical use of AI and its compatibility with Islamic values, students can learn to navigate the complexities of technology while remaining true to their moral principles (Hakim, 2023). The curriculum must also emphasize critical

thinking and problem solving skills, preparing students to interact with AI technology wisely and responsibly (Baskara, 2023; Iqbal, 2022).

4.2.3. The Role of Scholars and Educators in Guidance

Scholars and educators play an important role in providing ethical guidance on the application of AI in education. Their expertise is critical in interpreting how AI technologies can be aligned with Islamic values and in addressing the ethical challenges that may arise from their use (Holmes et al., 2021). By developing policies and guidelines governing the use of AI in educational settings, scholars can help ensure that the technology improves the quality of education without compromising moral values (Alshehri, 2023). This collaborative approach can create an environment where AI is considered a tool to enrich educational experiences, rather than a replacement for traditional teaching methods (Kim et al., 2022).

4.2.4. Building a Community of Awareness and Discussion

Creating a community of awareness and discussion among students, parents, and society at large is critical to the successful integration of AI in education. Educational campaigns explaining the benefits and risks associated with AI can empower stakeholders to make informed decisions about its use (Hudia, 2023). In addition, establishing discussion forums that bring together technologists, educators and scholars can facilitate the exchange of knowledge and exploration of innovative applications of AI in Islamic education (Hakim, 2023). This kind of community engagement is critical to building a culture of collaboration and continuous learning.

4.2.5. Continuous Research and Evaluation

Finally, ongoing research and evaluation is critical to understanding the impact of AI on education in Muslim communities. Educational institutions must implement systems for data collection and analysis to assess how AI technology affects student learning and the strengthening of Islamic values (Chen et al., 2020). This evidence-based approach will enable communities to adapt their strategies and take advantage of the opportunities offered by AI, ensuring that educational practices remain relevant and effective in a rapidly changing technological landscape (Hakim, 2023; Chen et al., 2020).

By implementing these strategies, the Muslim community can better navigate the challenges presented by AI in education. Through collaboration between educational institutions, scholars, and communities, the integration of AI in the teaching of Islamic values can result in better learning experiences and a stronger commitment to ethical and moral principles in society.

4.3 Policy Recommendations

The integration of artificial intelligence (AI) in education must be carried out by considering fundamental Islamic values. Therefore, it is important to develop policy recommendations that support the ethical and responsible application of this technology. The following policy proposals can serve as guidelines for the Muslim community in optimizing the use of AI in the education sector.

1. Development of an Ethical Policy Framework for AI

Governments and educational institutions need to formulate a clear ethical policy framework for the use of AI in education. This framework should include basic principles that emphasize fairness, transparency and accountability. This policy should also ensure that AI is used to support the teaching of Islamic values and does not lead to discriminatory or biased practices. With a clear framework, all parties involved can understand and follow the established guidelines.

2. Training and Continuing Education Program

The next policy recommendation is the development of ongoing training and education programs for educators regarding the use of AI in the context of Islamic education. These programs should include training on how to use technology ethically and effectively, as well as how to apply Islamic values in AI-based teaching. By increasing the capacity of educators, the quality of education will be better and more relevant to student needs.

3. Funding and Investment in Educational Technology

Governments and the private sector are expected to increase funding and investment in AI-based educational technology. This includes financial support for the development of technological infrastructure in educational institutions, especially in disadvantaged areas. This investment must be directed at creating equal access for all students, so that no one is left behind in this digital era.

4. Collaboration between Stakeholders

The importance of collaboration between stakeholders in education cannot be ignored. AI integration policies must involve cooperation between government, educational institutions, ulama and society. Through this collaboration, all parties can share knowledge and resources, and support each other in implementing AI in accordance with Islamic values. Dialogue and discussion forums involving all stakeholders will be very useful for exploring existing challenges and opportunities.

5. Continuous Research and Innovation

Policies to support research and innovation in the use of AI in Islamic education must be strengthened. Educational institutions and universities need to collaborate with research institutions to explore innovative and ethical applications of AI. Research focusing on the influence of AI on teaching Islamic values will help understand the effectiveness of the methods applied and provide insights for future improvements.

By implementing these policy recommendations, the Muslim community can integrate AI in education effectively and in line with Islamic values. Collaborative efforts between all stakeholders will be key to creating a better learning environment, one that not only improves students' academic abilities, but also strengthens their commitment to the ethical and moral principles that are the foundation of Muslim society.

5. Conclusion

5.1 Summary of Findings

In this research, various challenges and opportunities faced by the Muslim community have been identified in the application of artificial intelligence (AI) in the field of education, especially in the context of teaching Islamic values. Key challenges include limited technological infrastructure, uneven accessibility, and complex ethical considerations. These obstacles require the community to actively seek solutions that can overcome these problems, so that the use of AI can run effectively and in accordance with Islamic values.

On the other hand, the opportunities offered by AI in improving the effectiveness of teaching and learning are also very promising. The implementation of AI can provide a more interactive and personalized teaching method, as well as assist in developing a curriculum that is more relevant to student needs. Successful examples from various countries show that AI integration can produce positive results, provided it is carried out with a thoughtful and ethical approach. This research also emphasizes the importance of collaboration between stakeholders in education, including educational institutions, ulama, government and society. With strong synergy, existing challenges can be overcome, and opportunities can be exploited optimally.

The hope for further research in this area is very important. More in-depth studies are needed to explore the long-term impact of implementing AI in Islamic education, as well as to develop more specific guidelines regarding best practices in the use of this technology. Further research could also help to better understand how AI can contribute to the teaching of moral and ethical values that are at the core of education in an Islamic context. In doing so, this research seeks to make a meaningful contribution to the understanding of how AI can be integrated ethically and effectively in Islamic education, as well as providing direction for next steps in research and practice.

5.2 Recommendations for Further Research

This research opens up various possibilities for further exploration of the relationship between artificial intelligence (AI) and Islam, especially in the educational context. Here are some areas that need to be explored more deeply in future research:

1. Long Term Impact of AI in Islamic Education

It is important to conduct longitudinal research that evaluates the long-term impact of implementing AI in Islamic education. This research can cover aspects such as changes in the understanding of Islamic values among students, the influence on learning outcomes, and society's adaptation to new technology. With comprehensive data, researchers can provide clearer insights into the effectiveness and sustainability of AI use in education.

2. Ethical and Moral Assessment

Delving deeper into the ethical and moral issues that arise from the application of AI in educational settings is essential. Interdisciplinary research involving Islamic ethicists, educators, and theologians can help in formulating clear ethical guidelines. This study could focus on how Islamic values

can be integrated into the design and use of AI, as well as how to educate students to become responsible technology users.

3. AI Implementation Case Study

Developing more comprehensive case studies regarding the implementation of AI in various Islamic educational institutions around the world could provide valuable insights. This research can address factors that influence the success or failure of AI integration in local contexts, as well as best practices that can be adopted by other educational institutions.

4. Collaboration between scientific disciplines

Interdisciplinary research is critical to understanding complex phenomena related to AI and Islam. Therefore, involving various disciplines—such as information technology, education, theology, and ethics—in future research will enrich existing perspectives. This collaboration will allow researchers to explore deeper connections between technology, Islamic values, and their impact on society.

5. Innovation in AI-Based Learning

Finally, research on innovations in AI-based learning methods that are in line with Islamic values needs to be expanded. This may include developing educational tools and applications specifically designed to teach Islamic principles in an interactive and engaging way. Research in this area can help create more effective and relevant solutions to the challenges faced in Islamic education today.

By exploring these areas, future research can make a greater contribution to understanding and optimizing the application of AI in Islamic education. It is hoped that the results of this research will not only be useful for academics, but also for policy makers, educators and the Muslim community as a whole.

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