

Integrating Islamic Ethics into AI Literacy Curriculum in Muhammadiyah Educational Institutions: A Conceptual Model

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Abstract

The development of artificial intelligence (AI) technology in education presents ethical challenges that require attention, especially in the context of Islamic education. This study aims to formulate a model of AI literacy curriculum that integrates Islamic ethics, based on the principles of maqāsid al-sharī'ah, tawhid, and akhlak. Using a descriptive-conceptual qualitative approach, this study shows that AI literacy in Muhammadiyah educational institutions should go beyond mere technical skills, but also include the development of moral character aligned with Islamic values. The proposed curriculum model aims to build critical awareness, digital etiquette, and social responsibility among students in using technology. The study also suggests gradual implementation at the primary and secondary education levels, with the hope of creating a generation that is not only skilled in technology but also moral and ethical. The findings of this study are expected to serve as a reference for developing an ethical technology-based education curriculum in Muhammadiyah institutions and Islamic education in general.

Keywords: Islamic_Ethics, AI_Literacy, Muhammadiyah_Education, Maqāsid_al-Sharī'ah, Curriculum

I. INTRODUCTION

The development of artificial intelligence (AI) has brought significant changes to the global educational landscape. According to a UNESCO report (2021), more than 60% of higher education institutions worldwide have adopted AI-based technologies in various aspects such as learning, assessment, and academic management.¹ In Indonesia, the adoption of AI in education is

¹ UNESCO. (2021). AI and education: Guidance for policy-makers. UNESCO Publishing. <https://unesdoc.unesco.org/ark:/48223/pf0000377071>

rapidly increasing, driven by the national digital transformation policy, which includes the use of AI for adaptive learning, automatic assessments, and virtual assistants.²

Although AI offers efficiency and innovation in the learning process, it also presents serious ethical challenges such as algorithmic bias, data privacy violations, reliance on technology, and diminishing moral dimensions in education³. Without a clear ethical framework, AI literacy risks developing technical skills without fostering character development and moral responsibility.⁴

In the context of Islamic education, this challenge becomes even more complex, as education is not only aimed at intellectual enlightenment but also at shaping moral character grounded in tawhid values. Several studies indicate that the integration of Islamic ethics into digital education is still partial and normative, not yet structured into a systematic AI literacy curriculum.^{5,6} In fact, Islamic ethical principles, such as *maqāsid al-sharī'ah*, have great potential to serve as an ethical framework for addressing the development of modern technology, including AI.⁷

Muhammadiyah educational institutions hold a strategic position in responding to this challenge. As one of the largest Islamic organizations managing thousands of schools and universities, Muhammadiyah has a tradition of *tajdid* (renewal) that is adaptive to the times.⁸ However, to date, there has been limited research that specifically addresses how Islamic ethics can be integrated into the AI literacy curriculum in Muhammadiyah educational institutions in a conceptual and systematic manner. Therefore, this study will formulate a curriculum model that bridges AI development with Islamic values and Muhammadiyah's educational character.

Based on the background that has been explained, this study has two main research questions. First, how can the concept of Islamic ethics be systematically integrated into the artificial intelligence (AI) literacy curriculum in Muhammadiyah educational institutions? The main emphasis in this integration is that it should not only prioritize technical skills but also the development of moral character that aligns with Islamic values. Second, what are the normative and pedagogical foundations that support the development of an AI literacy curriculum based on Islamic values and Muhammadiyah's educational character?

² United Nations. (2022). Transforming education summit: SDG 4 progress report.

<https://www.un.org/sites/un2.un.org/files/sdg4-2022-progress-report.pdf>

³ Zawacki-Richter, et al. (2023). Artificial intelligence in higher education: A systematic review. *International Journal of Educational Technology in Higher Education*, 20(1), 1–25. <https://doi.org/10.1186/s41239-023-00400-1>

⁴ Rahman, et al.. (2022). Islamic ethics and digital transformation in education. *Journal of Muslim Societies*, 14(1), 45–60.

⁵ Huda, M., et al.. (2023). Ethical challenges of artificial intelligence in Islamic education. *Heliyon*, 9(4), e14890. <https://doi.org/10.1016/j.heliyon.2023.e14890>

⁶ Rahman, F. et al.. (2022). Islamic ethics and digital transformation in education. *Journal of Muslim Societies*, 14(1), 45–60.

⁷ Auda, J. (2022). Reforming Islamic law: *Maqāsid al-Sharī'ah* in policy and legislation. Al-Maqasid Institute.

⁸ Burhani, A. N. (2021). Muhammadiyah's progressivism in responding to contemporary challenges. *Studia Islamika*, 28(3), 443–469. <https://doi.org/10.36712/sdi.v28i3.15217>

This aims to produce a generation that is not only skilled in the digital world but also ethical and of high quality.

The purpose of this research is to formulate the concept of integrating Islamic ethics into an AI literacy curriculum that is relevant and applicable for Muhammadiyah educational institutions, in order to create digital education based on moral values. In addition, this study aims to examine the normative and pedagogical foundations that can support the development of an AI literacy curriculum based on Islamic values and Muhammadiyah's educational principles. This research will also provide practical implementation recommendations for educators and policymakers in Muhammadiyah institutions, to ensure that this curriculum can be effectively applied and meet the needs of the times.

Theoretically, this research is expected to contribute scientifically to the development of digital ethics studies from an Islamic perspective, particularly in the context of education and artificial intelligence. This study also aims to enrich the academic discourse on the integration of religious values and modern technology, which aligns with the Sustainable Development Goals (SDG 4) agenda on quality education, emphasizing inclusive and sustainable education.⁹ Practically, the results of this research are expected to serve as a conceptual reference for Muhammadiyah educational institutions in designing and developing an AI literacy curriculum based on Islamic ethics. The proposed conceptual model can serve as an initial foundation for educators and policymakers in implementing AI education that is not only technologically proficient but also moral and characterized by good ethics.

II. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Basic Concepts of AI Literacy in Education

Artificial Intelligence (AI) literacy refers to an individual's ability to understand how AI works, use it appropriately, and be aware of the social and ethical impacts of the technology.¹⁰ In the educational context, AI literacy requires not only technical skills but also cognitive abilities and ethical sensitivity.¹¹ propose three main components of AI literacy:

- (1) Cognitive: Basic understanding of AI and its applications.
- (2) Technical: Ability to use and interpret AI systems.

⁹ United Nations. (2022). Transforming education summit: SDG 4 progress report. <https://www.un.org/sites/un2.un.org/files/sdg4-2022-progress-report.pdf>

¹⁰ Long, D., et al.. (2020). What is AI literacy? Towards a definition for K-12. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (pp. 1–11). ACM. <https://doi.org/10.1145/3313831.3376727>

¹¹ Ng, W., et al.. (2022). Fostering AI literacy in K-12 education. *Computers & Education: Artificial Intelligence*, 3, 100068. <https://doi.org/10.1016/j.caeai.2022.100068>

(3) Ethical: Awareness of the moral implications of using AI, such as bias, privacy, and social responsibility.¹²

The implementation of AI in education provides great opportunities such as adaptive learning, administrative efficiency, and personalized education.¹³ However, ethical challenges also arise, including algorithmic bias, technological dependency, and the neglect of affective and spiritual aspects of learners.¹⁴ In the context of Islamic education, AI must be critically examined not only in terms of its utility but also based on the fundamental values of its usage. Strengthening AI literacy integrated with Islamic values is an absolute necessity in shaping a digital generation that is not only skilled in technology but also moral.¹⁵

2.2 Islamic Ethics in the Context of Modern Technology

Maqāṣid al-sharī‘ah is the concept of Islamic law’s objectives, aiming to protect five main aspects: religion (al-dīn), life (al-nafs), intellect (al-‘aql), lineage (al-nasl), and property (al-māl).¹⁶ In the context of modern technology, especially AI, maqāṣid al-sharī‘ah serves as an ethical framework guiding innovations to remain grounded in human values. AI should not be viewed merely as a tool but as a moral entity that must operate within the corridor of maslahat (public good).¹⁷

Islamic ethics is rooted in the concept of tawhid, emphasizing that all activities, including the development and use of technology, should align with the divine will.¹⁸ The principle of tawhid also necessitates the moral responsibility of technology users. In the context of AI, this means that technology must be directed toward justice, honesty, social responsibility, and the cultivation of noble character, rather than merely academic efficiency. Principles of Islamic akhlak, such as honesty, justice, and responsibility, must be integral to AI literacy education.¹⁹

¹² Ng, W., et al. (2022). Fostering AI literacy in K-12 education. *Computers & Education: Artificial Intelligence*, 3, 100068. <https://doi.org/10.1016/j.caeai.2022.100068>

¹³ Zawacki-R, et al. (2023). Artificial intelligence in higher education: A systematic review. *International Journal of Educational Technology in Higher Education*, 20(1), 1–25. <https://doi.org/10.1186/s41239-023-00400-1>

¹⁴ Zawacki-R., et al. (2023). Artificial intelligence in higher education: A systematic review. *International Journal of Educational Technology in Higher Education*, 20(1), 1–25. <https://doi.org/10.1186/s41239-023-00400-1>

¹⁵ Rahman, F., et al. (2022). Islamic ethics and digital transformation in education. *Journal of Muslim Societies*, 14(1), 45–60.

¹⁶ Auda, J. (2022). *Reforming Islamic law: Maqāṣid al-Sharī‘ah in policy and legislation*. Al-Maqasid Institute.

¹⁷ Idems

¹⁸ Nasr, S. H. (2020). *Man and nature: The spiritual crisis in modern man*. Suhail Academy.

¹⁹ Nasr, S. H. (2020). *Man and nature: The spiritual crisis in modern man*. Suhail Academy.

Principles of Maqāṣid al-Shari'ah in AI Literacy Based on Islamic Ethics



Figure 1. Conceptual Model of AI Literacy Based on Islamic Ethics Founded upon Maqāṣid al-Shâri'ah

Explanation of Figure 1

This figure illustrates the principles of *Maqāṣid al-Sharī'ah* in Islamic ethics-based AI literacy. *Maqāṣid al-Sharī'ah*, consisting of five main elements, is integrated into the use of artificial intelligence (AI) to ensure that the technology does not solely focus on technical aspects, but also adheres to moral and Islamic ethical values.

1. Hifz al-‘Aql (Preserving the Intellect): Using AI to enhance human cognitive abilities and avoiding technological dualism that could harm human cognitive functions.
2. Hifz al-Dīn (Preserving Religion): Ensuring that the content of the technology remains ethical and aligns with religious teachings.
3. Hifz al-Nafs (Preserving Life): Protecting personal data and preventing the misuse of AI that could harm individuals.
4. Hifz al-Nasl (Preserving Lineage): Protecting the safety of children and ensuring moral conduct in the use of technology.
5. Hifz al-Māl (Preserving Property): Ensuring the responsible management of AI, used for the welfare of the community and equitable economics.

At the bottom, the application of these principles in Islamic ethics-based AI literacy ensures that AI reinforces morality, contains positive content, and contributes to the advancement of social good. Thus, AI is not merely a technological tool, but also safeguards essential human values in Islamic education.

2.3 Muhammadiyah Education Philosophy

Muhammadiyah education integrates the aspects of faith, knowledge, and deeds into a holistic tawhidic unity.²⁰ Education is not only a means to acquire knowledge but also a medium for character formation that is spiritually and socially robust. Therefore, the integration of AI in Muhammadiyah education must consider this value framework to avoid being trapped in immoral technology. Muhammadiyah universities, such as Universitas Muhammadiyah Yogyakarta (UMY) and Universitas Muhammadiyah Malang (UMM), have practiced this principle by integrating Islamic ethical values into their curricula. At UMY, students are not only provided with technical understanding of computer science and artificial intelligence (AI), but are also trained to apply Islamic ethical values in the use of these technologies.²¹ At UMM, technology and AI-based programs also emphasize moral responsibility, where students are taught to consider the social and ethical implications of every use of technology.²² Therefore, education at Muhammadiyah aims to produce individuals who are not only technologically proficient but also moral and ethical, in accordance with Islamic teachings.

²⁰ Azra, A. (2022). Islamic education and social transformation in Indonesia. *Journal of Islamic Studies*, 33(1), 45–60.

²¹ Huda, M. (2023). Ethical challenges of artificial intelligence in Islamic education. *Heliyon*, 9(4), e14890. <https://doi.org/10.1016/j.heliyon.2023.e14890>

²² Burhani, A. N. (2021). Muhammadiyah's progressivism in responding to contemporary challenges. *Studia Islamika*, 28(3), 443–469. <https://doi.org/10.36712/sdi.v28i3.15217>

Muhammadiyah is known as a modernist Islamic organization that is adaptive to the changes of the times.²³ In the field of education, this adaptation is not only technological but also normative, meaning it ensures that changes are in line with Islamic principles. Therefore, the approach to AI in Muhammadiyah education must be selective and valuable, rooted in the tradition of *tajdid* (renewal). Muhammadiyah universities, like UMY and UMM, have successfully adopted digital technologies to improve the quality of learning without neglecting the core values of Islam. These technology-based educational programs, whether in computer science or AI, not only teach technical skills but also integrate Islamic ethical principles in teaching, ensuring that every technological innovation is carried out with high moral awareness.

2.4 Value-Based Curriculum: A Conceptual Study

An Islamic curriculum design is the development of educational content and methods rooted in Islamic teachings as the main framework. Al-Attas (2021)²⁴ describes the Islamic curriculum as a system of education aimed at realizing a human being who knows their Lord and is responsible for themselves and their environment. In the context of AI, an Islamic curriculum must include an understanding of digital ethics and responsibility in the use of technology.

The integration of values can be done explicitly (through special subjects) or implicitly (in the general learning process).²⁵ For AI, an explicit approach is essential to ensure that students are consciously and adequately trained to recognize moral issues. Thus, AI literacy education is not just technology learning but also ethical development.

2.5 Research Framework

This study is based on the premise that the use of AI in Muhammadiyah educational institutions must be grounded in strong Islamic values to avoid moral and spiritual degradation. Therefore, an AI literacy curriculum design is needed that combines technological competence, ethical awareness, and the principles of Islamic education.²⁶

The following diagram illustrates the conceptual framework of this research:

²³ Idems

²⁴ Al-Attas, S. M. N. (2021). Islam and secularism. ISTAC.

²⁵ Mulyasa, E. (2020). Pengembangan kurikulum dalam pendidikan Islam. Remaja Rosdakarya.

²⁶ Burhani, A. N. (2021). Muhammadiyah's progressivism in responding to contemporary challenges. *Studia Islamika*, 28(3), 443–469. <https://doi.org/10.36712/sdi.v28i3.15217>

Integration of Islamic Ethics into Muhammadiyah AI Literacy Curriculum: A Conceptual Proposition

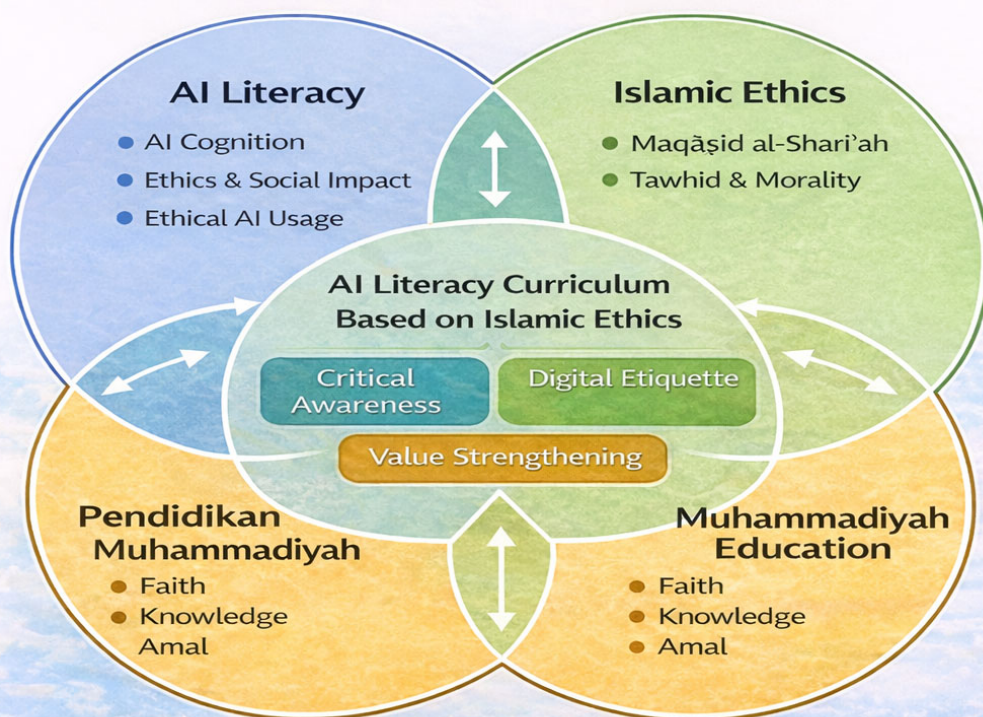


Figure 2. Conceptual Model of AI Literacy Curriculum Based on Islamic Ethics and Muhammadiyah Values

Figure 2 illustrates the integration of Islamic ethics into the Muhammadiyah AI literacy curriculum. The three main elements (AI literacy, Islamic ethics, and Muhammadiyah education) are interconnected and influence each other. AI literacy encompasses technical skills and ethical awareness, while Islamic ethics serves as a moral guide ensuring that AI usage is always in line with human values and Islamic morality.²⁷ Muhammadiyah education, with its principles of faith, knowledge, and deeds, provides a foundation for developing noble character and social responsibility in the use of technology.²⁸ The interaction among these three elements creates a holistic and applicable AI literacy curriculum based on Islamic ethics in Muhammadiyah education.

Table 1 below presents a summary of several studies related to the application of artificial intelligence (AI) in education, identifying the gaps and limitations in the application of Islamic

²⁷ Auda, J. (2022). Reforming Islamic law: Maqāṣid al-Sharī'ah in policy and legislation. Al-Maqasid Institute.

²⁸ Azra, A. (2022). Islamic education and social transformation in Indonesia. *Journal of Islamic Studies*, 33(1), 45–60.

ethics.²⁹ This research fills that gap by offering a more applicable AI literacy curriculum model based on Islamic ethics, integrated with Muhammadiyah's educational principles.³⁰

Table 1. Previous Research

No	Researchers & Year	Research Focus	Main Findings	Weakness / Gap
1	Zawacki-Richter et al. (2023)	Review of AI implementation in higher education	AI has great potential, but ethical issues have not been addressed seriously	Does not discuss the integration of Islamic values
2	Huda et al. (2023)	AI Ethics in Islamic Education	An Islamic ethical framework for AI is needed	Has not proposed a curriculum model
3	Rahman & Abdullah (2022)	Digital transformation in Islamic education	Ethics must be prioritized	Focuses on general issues, not specifically on AI
4	Ng et al. (2022)	AI literacy models for students	AI literacy should be holistic: technical and ethical	Does not use a religious perspective
5	This Study (You)	AI curriculum with integration of Islamic ethics and Muhammadiyah values	Proposes a conceptual curriculum model	Still in the conceptual stage, not yet implementable

III. RESEARCH METHODOLOGY

3.1 Research Type and Approach

This research uses a descriptive-conceptual qualitative approach, aimed at exploring the concepts and normative principles regarding the integration of Islamic ethics into the AI literacy curriculum in Muhammadiyah educational institutions. This approach is chosen because the issues being examined are conceptual and normative, related to the construction of a value-based curriculum, rather than testing causal relationships among variables statistically. According to Creswell & Poth (2018)³¹, this approach is suitable for exploring theoretical ideas, constructing normative arguments, and formulating new models based on extensive literature review.

²⁹ Zawacki-R, et al. (2023). Artificial intelligence in higher education: A systematic review. *International Journal of Educational Technology in Higher Education*, 20(1), 1–25. <https://doi.org/10.1186/s41239-023-00400-1>

³⁰ Burhani, A. N. (2021). Muhammadiyah's progressivism in responding to contemporary challenges. *Studia Islamika*, 28(3), 443–469. <https://doi.org/10.36712/sdi.v28i3.15217>

³¹ Creswell, J. W., et al. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.

3.2 Data Collection Methods

Data were collected through literature studies, using the following sources:

1. **Primary Sources:**

- Classical texts on maqāṣid al-sharī‘ah and Islamic ethics.
- Fatwas and official documents from the Muhammadiyah Majelis Tarjih and Tajdid, such as *Fikih Informasi*.
- Literature on Islamic education philosophy and Muhammadiyah thought.

2. **Secondary Sources:**

- Recent academic journals on AI in education, technology ethics, and Islamic curricula.
- Books on methodology, education, and technology.
- International reports from UNESCO and OECD on AI literacy.

The sources were purposively selected based on relevance, recency (last 5 years), and authority to ensure a strong academic foundation.

3.3 Data Analysis Techniques

The data were analyzed using content analysis and a conceptual-comparative approach. This technique allows for:

- Identifying patterns of Islamic ethics, AI literacy, and Muhammadiyah education in the literature.
- Classifying normative principles (such as maqāṣid, tawhid, akhlak) that can be applied in the curriculum.
- Comparing existing curriculum frameworks with those proposed in this study.

According to Schreier (2012)³², content analysis is effective for extracting meanings from texts, especially when identifying values and principles in documents. This approach, combined with a conceptual-comparative method, allows for comparing various frameworks of thought and generating a new, constructive, and applicable synthesis. The result of this analysis is a conceptual framework for an AI literacy curriculum integrated with Islamic ethics and Muhammadiyah educational philosophy, which is expected to contribute to the development of ethical and meaningful Islamic technology-based education..

³² Schreier, M. (2012). Qualitative content analysis in practice. SAGE Publications.

IV. ANALYSIS AND CONCEPTUAL PROPOSAL

4.1 Ethical Challenges in the Utilization of AI in Muhammadiyah Educational Institutions

The development of AI has infiltrated classrooms in various forms, such as learning chatbots, automated assessments, and adaptive learning systems. However, the presence of AI is not without ethical issues. AI systems designed with biased data may produce discriminatory decisions.³³ In Islamic educational institutions, this could lead to imbalances in assessments, undermine trust in teacher authority, and weaken the ethical reasoning of learners.

Consider the following scenario: A Muhammadiyah school uses an AI application to detect student activity in an online discussion. The application gives low scores to students who communicate politely and slowly—yet Islamic values teach proper speech etiquette and non-aggressiveness. This reveals the potential for bias that may contradict Islamic values. While AI in education can facilitate the learning process, it also carries the risk of discriminatory bias, which could undermine fairness in assessment. For instance, an AI application giving low scores to students who communicate politely and slowly contradicts the Islamic value of manners in communication.

As an institution based on Islamic values, Muhammadiyah faces challenges in integrating AI into its existing curriculum. While there is a push for *Islam Berkemajuan* (progressive Islam) and digital transformation, the implementation of AI technology in Muhammadiyah schools and universities is still limited to technical aspects without a value-based approach. According to the Muhammadiyah 48th Muktamar and the documents of Majelis Tarjih, there is a desire to develop an Islam that adapts to the times. However, in practice, the integration of Islamic ethics into AI usage in Muhammadiyah educational settings has yet to be systematically structured within the curriculum.³⁴ Most uses of AI are still technical and lack a clear Islamic ethical framework.

4.2 The Urgency of Integrating Islamic Ethics into AI Literacy

4.2.1 Analysis of Relevant Maqāsid Principles: Hifz al-‘Aql and Hifz al-Dīn

Islamic ethics views the use of technology as aligning with the maqāsid al-sharī‘ah. In the context of AI, two of the most relevant maqāsid principles are hifz al-‘aql (the preservation of the intellect) and hifz al-dīn (the preservation of religion). AI literacy must ensure that human intellect is not replaced, weakened, or diverted by automated systems. AI should be used to enhance human intellect, not to replace it. Automation systems should not diminish the freedom of thought or lead to excessive dependence on technology, which can weaken students' intellectual independence.

³³ Zawacki-R., et al.. (2023). Artificial intelligence in higher education: A systematic review. *International Journal of Educational Technology in Higher Education*, 20(1), 1–25. <https://doi.org/10.1186/s41239-023-00400-1>

³⁴ Burhani, A. N. (2021). Muhammadiyah's progressivism in responding to contemporary challenges. *Studia Islamika*, 28(3), 443–469. <https://doi.org/10.36712/sdi.v28i3.15217>

Moreover, AI should be regulated to prevent the spread of values contrary to Islamic teachings or to allow students to use technology without moral accountability.³⁵

4.2.2 Ethics of Technology Users: Caution, Responsibility, and Honesty

Islamic ethics demands caution (*wara'*), trustworthiness in actions, and honesty in using information. In the context of AI, students need to be taught not to use technology manipulatively (e.g., generating automatic answers without understanding) or misuse information. Islamic AI literacy must foster both smart and ethical technology users, in line with Muhammadiyah's educational vision: to develop individuals who are knowledgeable and virtuous. For instance, students must be taught not to manipulate technology for personal gain but to use it for positive purposes beneficial to society.

4.3 Proposal for an AI Literacy Curriculum Based on Islamic Ethics

4.3.1 Curriculum Objectives: Critical Awareness, Digital Etiquette, and Strengthening Values

The proposed AI literacy curriculum based on Islamic ethics is intended to have three main objectives:

1. To build critical awareness about how AI works and its impacts.
2. To instill Islamic digital etiquette, such as responsibility, online courtesy, and trustworthiness in information.
3. To integrate Islamic values in the use of technology, such as *tawhid*, *maqāṣid*, and *akhlak*.

These objectives align with Muhammadiyah's educational philosophy, which emphasizes the integration of faith, knowledge, and deeds in forming a superior Muslim character, both spiritually and intellectually.

4.3.2 Core Competencies to be Developed

Based on the analysis of needs and Islamic principles, the core competencies to be developed in the AI literacy curriculum at Muhammadiyah educational institutions are as follows:

Table 2. Core Competencies

No	Core Competency	Description
1	Understanding AI Technology	Students should be able to explain the basic principles and functions of AI.
2	Assessing the Ethical and Social Impacts of AI	Students should be able to recognize risks such as bias, privacy issues, and misuse of technology.
3	Using AI Ethically and Responsibly	Students should apply AI for positive activities, with an awareness of Islamic values.

³⁵ Auda, J. (2022). Reforming Islamic law: Maqāṣid al-Sharī'ah in policy and legislation. Al-Maqasid Institute.

The implementation and assessment of these competencies will include:

1. Competency 1: Understanding AI Technology
 - Implementation: Students will study the fundamentals of AI technology, including basic algorithms, data processing, and examples of AI applications in education.³⁶
 - Assessment: This competency can be measured through written tests assessing students' understanding of key AI concepts. Classroom discussions can also be used to evaluate how well students can apply this knowledge to various scenarios.
2. Competency 2: Assessing the Ethical and Social Impacts of AI³⁷
 - Implementation: Students will engage in case studies on how AI can result in bias or threaten privacy. Examples may include unfair algorithms in automatic assessment systems or harmful uses of AI.
 - Assessment: Group discussions will be used to evaluate students' ability to identify and assess the social and ethical impacts of AI. Individual assessments can be done through open-ended questions in discussions and case studies analysis.
3. Competency 3: Using AI Ethically and Responsibly
 - Implementation: Students will be given practical tasks using AI in socially beneficial contexts, such as AI-based projects supporting humanitarian or inclusive education.
 - Assessment: Practical projects where students develop or implement AI solutions considering ethics and Islamic values will be assessed based on social responsibility, such as fairness, societal benefit, and non-exploitative use.

4.3.3 Teaching Content Structure: Integrative Modules

The curriculum can be developed into integrative modules consisting of:

Table 3. Integrative Modules

Module	Key Theme	Islamic Ethical Content
1	Introduction to AI and Its Role in Education	<i>Tawhid</i> , correct intentions, trustworthiness
2	Risks and Challenges of AI	<i>Maqāṣid al-sharī'ah</i> , caution
3	Ethics of Using AI	<i>Akhlak</i> , responsibility, honesty
4	AI for Social Good	<i>Amal saleh</i> , <i>maslahat</i> , contribution to society

- Module 1: Introduction to AI and Its Role in Education

Objective: To provide students with a basic understanding of AI and its role in education while connecting it with the principles of *tawhid*, correct intentions, and trustworthiness.

³⁶ Auda, J. (2022). Reforming Islamic law: Maqāṣid al-Sharī'ah in policy and legislation. Al-Maqasid Institute.

³⁷ Zawacki-R, et al. (2023). Artificial intelligence in higher education: A systematic review. International Journal of Educational Technology in Higher Education, 20(1), 1–25. <https://doi.org/10.1186/s41239-023-00400-1>

The learning will combine basic AI theory with Islamic values on honesty in developing technology.

- Module 2: Risks and Challenges of AI

Objective: To explore the various risks and challenges that may arise from the use of AI, focusing on the principles of *maqāṣid al-sharī'ah* to safeguard the public good. Students will be trained to analyze the social and ethical impacts of technology, including issues like privacy and discrimination.

- Module 3: Ethics of Using AI

Objective: To teach students the ethics of using AI, emphasizing principles of *akhlak*, responsibility, and honesty. Learning will include case discussions on AI misuse and ways to prevent it.

- Module 4: AI for Social Good

Objective: In this module, students will learn how to use AI for social good, referring to the concepts of *amal saleh*, *maslahat*, and positive contributions to society. Students will be encouraged to think about using technology in ways that provide long-term benefits to the community.

4.3.4 Teaching Methods: Case Studies, Reflection, and Integration

The recommended teaching methods in this curriculum include:

1. Case Studies:
 - Discussing real or hypothetical cases of AI use with ethical issues. For example, cases of algorithmic bias in AI-based recruitment systems. Students will be asked to analyze these issues using Islamic ethical principles and provide morally sound solutions.
2. Islamic Ethical Reflection:
 - After engaging with technology in learning activities, students will be asked to write reflections linking their experiences to Islamic values. Reflection questions could include: "How can the technology used support or contradict the principles of *tawhid* and *akhlak* in Islam?"
3. Cross-Disciplinary Integration:
 - As part of an interdisciplinary approach, lessons in Islamic Education (PAI) and Information and Communication Technology (ICT) will be integrated. For example, PAI lessons will address *maqāṣid al-sharī'ah* in the digital context, while ICT lessons will explore the application of AI in the real world. This will help students understand both religious and technological perspectives simultaneously.

Model of an AI Literacy Curriculum Based on Islamic Ethics in Muhammadiyah Educational Institutions

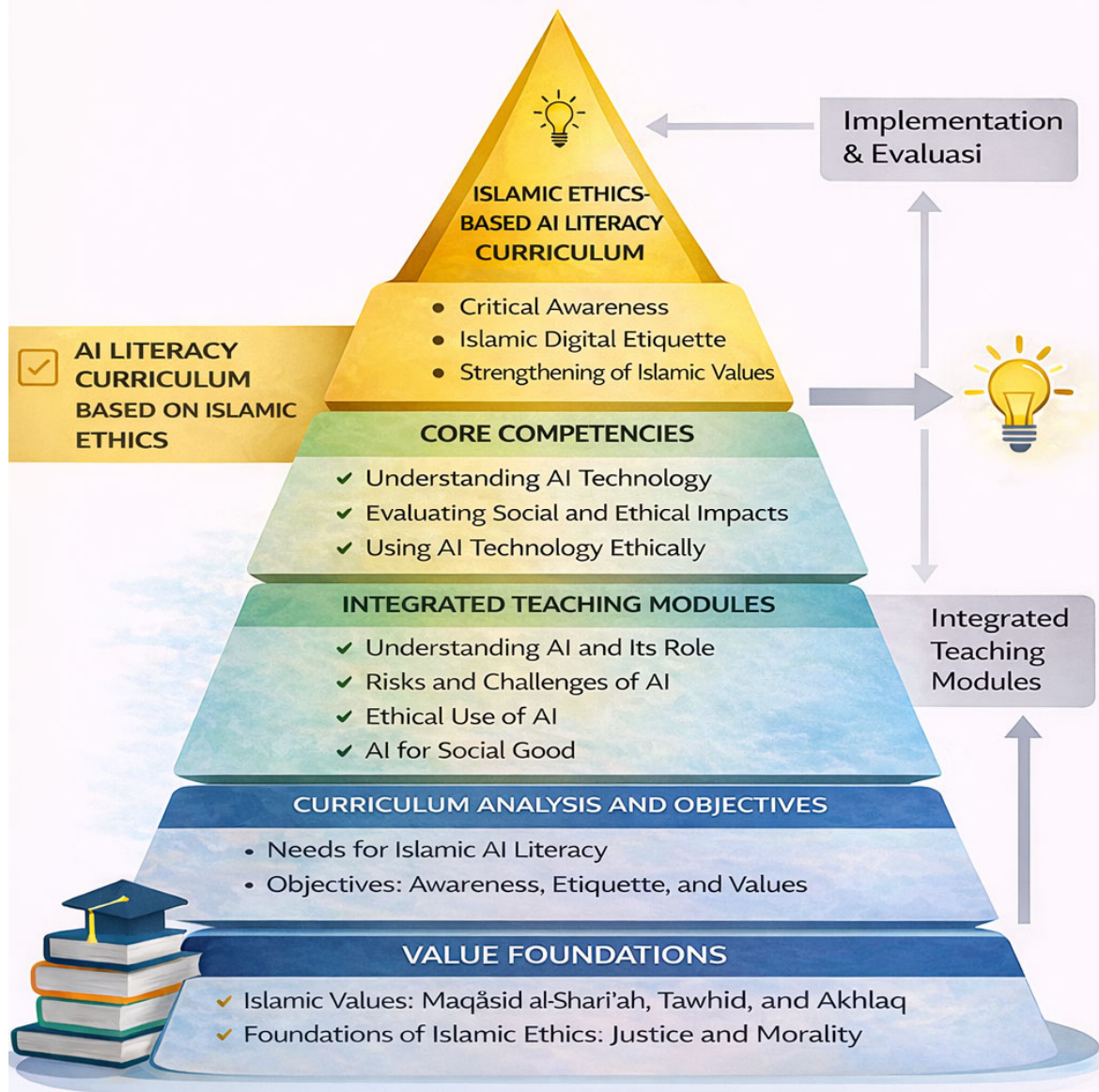


Figure 3. Conceptual Framework of an Islamic Ethics-Based AI Literacy Curriculum in Muhammadiyah Education

Explanation of Figure 3

This figure illustrates the Islamic Ethics-Based AI Literacy Curriculum Model in Muhammadiyah Educational Institutions, designed to integrate Islamic values into artificial intelligence (AI) education. The model is structured in the form of a pyramid consisting of five levels:

1. **Value Foundation:** At the base of the pyramid, this curriculum is grounded in Islamic values such as *maqāṣid al-sharī'ah*, *tawhid*, and *akhlak*, which serve as guidelines for developing the AI literacy curriculum.
2. **Curriculum Analysis and Objectives:** The second level focuses on the need for Islamic AI literacy and curriculum objectives, including critical awareness, etiquette, and Islamic values in the use of technology.
3. **Integrated Teaching Modules:** The next level presents integrated teaching modules, consisting of four main modules:
 - Introduction to AI and its role in education.
 - Risks and challenges of AI, examining social and ethical impacts.
 - Ethics of Using AI, focusing on responsible AI usage.
 - AI for Social Good, applying AI for societal benefit.
4. **Core Competencies:** These modules aim to develop core competencies in students, such as understanding AI technology, assessing its social and ethical impacts, and using AI technology ethically.
5. **Islamic Ethics-Based AI Literacy Curriculum:** The top of the pyramid represents the main goal of this curriculum, which is to form critical awareness, Islamic digital etiquette, and strengthening Islamic values in students so that they can apply AI with deep understanding and responsibility in line with Islamic principles.

This model suggests phased implementation and evaluation to ensure that each element of the curriculum is interconnected and effective in integrating technology with religious values.

Table 4. Comparative Analysis of Literature on Ethics and AI Literacy in Islamic Education

N	Researchers & Year	Research Focus	Main Findings	Ethical Approach / Model	Weakness / Research Gap	Contribution of This Research
1	Zawacki-Richter et al. (2023)	AI Implementation in Higher Education	Demonstrates the significant potential of AI for personalized learning	General ethics (fairness, transparency)	Does not connect AI with spiritual or religious values	Integrates Islamic ethics in a value-based education context
2	Huda et al. (2023)	AI Ethics in Islamic Education	Emphasizes the importance of Shariah guidance in educational technology	Shariah principles, justice	Does not offer a concrete curriculum model	Develops an applicable Islamic AI literacy curriculum model
3	Rahman & Abdullah (2022)	Digital Transformation in Islamic Education	Encourages ethical and just digitalization	Islamic ethics (maqāṣid)	Focuses on general transformation, not AI literacy	Develops an AI literacy model based on maqāṣid al-sharī'ah
4	Ng et al. (2022)	AI Literacy Models in Schools	AI literacy includes technical, cognitive, and ethical aspects	3-component framework (cognitive–technical–ethical)	Does not use a religious perspective	Adds a spiritual and moral dimension of Islam to the model
5	Johnson et al. (2026)	AI-based Management Learning	AI supports reflection and self-assessment in education	Explainable AI (XAI)	Does not connect moral reflection with Islamic values	Links XAI with the ethics and trustworthiness approach
6	Auda (2022)	Maqāṣid al-Sharī'ah in Modern Policy	Explains the role of maqāṣid as a public ethics guide	Maqāṣid-based ethics	Not applied in the context of AI	Uses maqāṣid al-sharī'ah as the ethical framework for AI
7	Burhani (2021)	Muhammadiyah and Educational Reform	Islamic education must be adaptive and progressive	Tajdid and humanization	Does not address AI technology aspects	Aligns ethical AI with Muhammadiyah's progressive education
8	This Study (2026)	Integration of Islamic Ethics in Muhammadiyah AI Literacy	Designs a conceptual model of Islamic AI literacy curriculum	Maqāṣid, akhlak, tawhid, and Muhammadiyah philosophy	–	Offers a new conceptual framework for ethical Islamic AI curriculum in

This table presents a comparative analysis between various studies that discuss ethics and AI literacy in Islamic education. Each row shows the research focus, main findings, and the ethical approach used in previous studies, and identifies the limitations or gaps that exist. In the last column, the table highlights the contribution of your research, which is the integration of Islamic ethics into the AI literacy curriculum in Muhammadiyah institutions, introducing a new conceptual framework for AI education based on *maqāṣid al-sharī‘ah*, *tawhid*, *akhlak*, and Muhammadiyah philosophy.

This curriculum proposal is expected to be an initial contribution to building an Islamic digital education model that not only emphasizes technological proficiency but also internalizes moral and spiritual values. The curriculum is highly relevant for gradual implementation, starting from primary or secondary education levels in Muhammadiyah, before being expanded to higher education levels. Therefore, this model will not only shape technical skills but also foster strong moral character in the use of technology. Furthermore, this curriculum could serve as an important reference for the development of future Islamic education policies based on technology, emphasizing the importance of balancing technology with religious values in shaping a generation that is both intelligent and moral.

V. CONCLUSION

This study emphasizes the urgency of integrating Islamic ethics into the artificial intelligence (AI) literacy curriculum in Muhammadiyah educational institutions, as the convergence of AI and education has the potential to produce a generation that is technically proficient but morally weak if it is not supported by a strong value framework. To address the research problems, this study proposes a conceptual model for the systematic integration of Islamic ethics, structured through normative and pedagogical foundations based on *maqāṣid al-sharī‘ah*, *tawhid*, and *akhlak*, and aligned with the Muhammadiyah educational philosophy of faith (*iman*), knowledge (*ilmu*), and action (*amal*). Consequently, AI literacy is not limited to technical skills alone but also fosters critical awareness, Islamic digital etiquette, and moral responsibility. Thus, the proposed curriculum model—encompassing learning objectives, core competencies, content structure, and instructional methods—serves as an applicable reference for Muhammadiyah educators and policymakers in implementing a civilized and ethical AI education. In this regard, the integration of Islamic ethics into AI literacy is not merely an option but a necessity for progressive Islamic education in the digital era.

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