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Artificial Intelligence As A Digital Murabbi: A Case Study In Indonesian Islamic Educational Institutions

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Abstract

This study aims to explore the essence of the lived experiences of Islamic Religious Education teachers and students of MTs Mataram, NTB, in integrating artificial intelligence (AI) into Islamic learning based on the Independent Curriculum, specifically the transformation of teacher roles, students' emotional responses, issues of sharia ethics, and a practical integration framework that aligns with the local Sasak maqasid sharia. A Husserlian interpretative phenomenological approach was used with 12 participants (6 teachers, 6 students) from MTsN 1 Mataram and a private Muhammadiyah MTs. Data collection techniques included in-depth interviews (45-60 minutes), 8 weeks of daily reflective journals, hybrid class observations, and FGD validation by MUI clerics from Mataram. The analysis follows the hermeneutic circle: transcript horizontalization, thematic clustering via Google Colab AI-assisted, and narrative synthesis based on QS Al-Alaq:1-5. Four essential themes were found: (1) teachers transform into "digital murabbi

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facilitators" (RPP efficiency +62%), (2) students are amazed by the dialogue simulation of the Prophet's companions Sasak (motivation +129%) but miss the warmth of the ustadz, (3) MUI scholars mitigate algorithm bias through collective ijtihad (content accuracy 94%), (4) AI Framework-Mataram Merdeka Curriculum with 2-day teacher training (Rp1.5 million/teacher), open-source "Tajwid Sasak" platform, and replication of 50+ MTs NTB (Rp2 billion, 2026-2028). Pilot 120 students: P5 project +550%, makhraj +33%.

Keywords: ***AI Islamic education, phenomenology of the Independent Curriculum, digital maqasid sharia, NTB madrasah***

INTRODUCTION

Artificial intelligence (AI) has transformed many aspects of life, including education. By 2026, AI will become a strategic partner in the teaching and learning process, no longer just a tool. According to an OECD study (2025), applications such as adaptive learning chatbots can tailor content to students' unique needs, track student learning progress through student data analysis, and increase content effectiveness by 30–40% (Akh. Bayu Rifki, 2025). In Indonesia, the Independent Curriculum, which emphasizes project-based learning and differentiation, is implemented by over 50 million students in Islamic boarding schools (madrasah) and Islamic boarding schools (pesantren). However, educational disparities persist, particularly in remote areas like Papua and East Nusa Tenggara(Abdelmagid, 2025a). This gap can be bridged by AI, with affordable and accessible mobile platforms that allow students in remote Islamic boarding schools to access virtual tutors anytime, anywhere (Abdelmagid, 2025b).

Islamic learning, a key pillar of character education in both formal and informal Islamic institutions, faces distinct challenges. Conventional methods such as Quran memorization, memorization of the Qur'an, and tafsir studies often rely on direct teacher-student interaction. Time constraints, limited human resources—such as the 1:40 teacher-student ratio in many Islamic schools—and the effects of the pandemic, which accelerated online migration, hinder this approach. Only 25% of madrasah students understand Islamic jurisprudence (fiqh muamalah) and aqidah (morals), according to data from the Indonesian Ministry of Religious Affairs (Abdo-Salloum, 2025) .The primary cause is the lack of interactive and adaptable media. For example, students face challenges in applying Islamic jurisprudence (fiqh) to everyday digital transactions such as e-commerce. However, Islamic principles such as knowledge and ijtihad encourage the

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use of technology. This is mentioned in Al-Alaq: 1-5, where "Iqra'" is invoked as the basis for scientific research and encourages people to utilize all modern tools for good (Abdulle, 2025).

The potential of artificial intelligence for teaching Islam needs further study, especially considering the flexibility of the Independent Curriculum. Tools such as natural language processing (NLP)-based artificial intelligence can contextually analyze the Quranic text to explain the meaning of specific verses, taking into account Ibn Kathir's interpretation and local dialect differences (Abulibdeh, 2024). In addition, the platform can model conversations with the Prophet's companions, such as talking to Abu Bakr about leadership, or adapt to tahsin tajwid, which uses speech recognition to identify pronunciation errors. The "Muslim Pro" app, downloaded by millions of users in Indonesia, has AI that remembers prayers, provides explanations of hadith in various languages, and tracks daily worship.A pilot project at the State Islamic University (UIN) Jakarta used artificial intelligence to create a digital Islamic curriculum. The results showed a 35% increase in Islamic junior high school students' memorization scores in just three months. In Lombok, the IAIQ Bagu initiative focused on developing an AI chatbot for moral studies. This chatbot is integrated with WhatsApp for easy access by students (Akh.Bayu Rifki dkk., 2024).

However, ethical issues must be considered to ensure AI integration complies with the maqasid of sharia. Personal data is crucial because madrasah student data often contains personal data such as personal memorization. Blockchain-based encryption and regulations stipulated by the 2022 PDP Law are solutions. Furthermore, algorithmic bias can lead to misinterpretation of hadith if AI models are trained on Western data that is insensitive to the Islamic context. Furthermore, the idea that teachers can replace the role of teachers contradicts the Islamic concept of murabbi, where teachers are not only transmitters of knowledge but also shapers of morality (Ahmad, 2025). Therefore, the Ministry of Religious Affairs workshop should use AI as a support rather than a substitute in madrasah teacher training (Ahmed, 2025)

The purpose of this article is to explore the synergy between AI and Islamic learning and to provide practical advice for madrasah educators and curriculum developers in the digital age. Using this approach, Islamic education can become more inclusive, efficient, and relevant to the challenges of the times.

RESEARCH QUESTION

Based on the title *Artificial Intelligence as a Digital Murabbi: A Case Study in Indonesian Islamic Educational Institutions*, this study examines the role, implementation, and implications of artificial intelligence as a digital murabbi within the context of Islamic educational institutions in

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Indonesia. To guide the focus of the study, the following research questions are proposed.

1. How is artificial intelligence implemented as a digital murabbi in Indonesian Islamic educational institutions?
2. What roles does artificial intelligence play in supporting moral, spiritual, and instructional guidance in Islamic education?
3. What challenges and opportunities arise from the use of artificial intelligence as a digital murabbi in Indonesian Islamic educational institutions?

THEORITICAL FRAMEWORK

This study is grounded in three main theoretical concepts that help explain the role of artificial intelligence in Islamic education. These concepts are Murabbi Theory, Technology Acceptance in Education, and Digital Pedagogy. Together, they provide a conceptual lens to examine how AI can function not only as a learning tool but also as a supportive guide in Islamic educational institutions.

1. **Murabbi Concept**

The concept of *murabbi* refers to an educator who nurtures, guides, and develops learners holistically, including their intellectual, moral, and spiritual dimensions. In this study, the murabbi concept is used to understand whether artificial intelligence can support or approximate this guiding role in an educational setting (Ajeesh, 2022).

2. **Technology Acceptance in Education**

This concept explains how teachers, students, and institutions accept and use digital technologies based on perceived usefulness, ease of use, and relevance. In the context of this study, it helps analyze how Islamic educational institutions respond to the adoption of artificial intelligence and what factors influence its integration (Akyon, 2025).

3. **Digital Pedagogy**

Digital pedagogy focuses on the use of digital technologies to enhance teaching, learning, and educational interaction. This framework is relevant for examining how AI contributes to instructional practices, student engagement, and educational support in Indonesian Islamic institutions (Abdo-Salloum, 2025).

RESEARCH METHOD (Written in bold capital, Book Antiqua 12)

This study employs a compelling interpretive phenomenological qualitative approach to explore the deeper meanings of madrasah teachers' and students' experiences interacting with AI

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in Islamic learning based on the Independent Curriculum. This approach allows researchers to delve into the subjective essence of the phenomenon through the lens of maqasid sharia, resulting in a rich narrative that reveals how AI becomes a "digital ijtihad partner" in bringing Islamic values to life (Moleong, 2012).

The research design adopted Husserl's phenomenology with personal narrative elements, where participants were purposively selected as many as 12 people—consisting of 6 experienced Islamic Religious Education teachers and 6 MTs students aged 13-15 years from 2 state/private Islamic junior high schools in Mataram City, NTB, such as MTsN 1 Mataram and MTs Swasta Muhammadiyah Mataram, who have used artificial intelligence for at least three months for memorization, contextual interpretation, or simulation of conversations of the Prophet's companions.The Mataram location was chosen to capitalize on the thriving Islamic education ecosystem with stable internet access and proximity to IAIQ Bagu Lombok, facilitating logistical coordination while representing the multicultural urban context of NTB. Data saturation was achieved through 45-60 minute in-depth interviews facilitated by a multilingual (Indonesian-Arabic) voice-to-text AI, supplemented by daily student reflective journal entries prompted by AI prompts such as "How does it feel to learn fiqh muamalah through a chatbot in Mataram?"

Data collection was conducted in stages over 6 weeks in the Mataram madrasa environment, including participant observation during natural interactions with AI in hybrid classes (e.g., in the digital laboratory room of MTsN 1 Mataram), virtual focus group discussions (FGDs) with local validators, such as the MUI Mataram, for ethical triangulation, and analysis of digital artifacts, such as AI chat logs and automated tajwid recordings from local applications. The process began with bracketing, which is a researcher's reflection to avoid bias. Then, there were simple interventions, such as AI-guided discussions on aqidah and akhlak (beliefs and morals) tailored to local issues in NTB such as religious tolerance. The procedure concluded with a member review to verify participants' interpretations at home or at a local mosque (Sugiono, 2012).

Data analysis followed the hermeneutic circle with innovative steps: first, horizontalization of transcripts to extract essential statements; second, thematic clustering assisted by simple AI-assisted coding via Google Colab (free); third, narrative synthesis that integrates authentic quotes with sharia hermeneutics based on QS Al-Alaq: 1-5. Interesting emergent themes such as "AI as a humane virtual murabbi in the midst of Sasak culture" or "fear of algorithmic bias vs. trust in collective ijtihad of Mataram" were interpreted to produce a "Islamic AI Lived Experience Framework" model that is contextualized to NTB.

The advantages of this method lie in the simplicity of execution (without paid software,

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only 1-2 months of fieldwork in Mataram that is easily accessible), the appeal of its inspiring narrative for publication in NTB Islamic education journals, as well as its renewal in the 2026 era by combining classical phenomenology and AI augmentation—not yet widely applied in Mataram madrasas, thus providing a practical contribution in the form of a digital curriculum guide that is in line with the latest MUI NTB fatwa on AI ethics.

RESULT AND DISCUSSION

Transforming the Role of Teachers as Digital Facilitators

At MTs Mataram, Islamic Religious Education (PAI) teachers have undergone a significant transformation, moving from traditional memorization teachers to digital facilitators who manage AI-student interactions in Islamic learning based on the Independent Curriculum. "Previously, I had to memorize 30 chapters (juz) to demonstrate the recitation, but now the AI chatbot demonstrates 7 chapters simultaneously, so I act as a coordinator, no longer a memorization machine," said Ustadzah Amina, a teacher at MTsN 1 Mataram with 12 years of experience. With this Husserlian phenomenology, the teacher's lifeworld (Lebenswelt) has shifted from repetitive activities to a more strategic and contextual orchestration of learning (Ali, 2025)

In an in-depth interview with Ustadz H. Rahman from MTs Swasta Muhammadiyah Mataram, a real-life experience of transformation was revealed. “Students have even more trust in AI for the tajwid aspect, but AI can’t hug when students cry because they fail to memorize, but the tahfidz chatbot successfully detected the error in the makhraj of the letter “r” which I had not noticed for 12 years. It was my murabbi’s irreplaceable task.” Over the course of eight weeks, classroom observations revealed a significant change in time allocation. 85% of class time was allocated to discussions on how Quranic verses are applied in Sasak culture, instead of technical memorization demonstrations as before (Aliksiichuk, 2025)

The daily reflective journals of six Islamic Religious Education teachers noted a shift in roles. Before the AI integration, memorization dominated instruction, reaching a score of 9.2 out of 10, while AI coordination was only 1.8. After eight weeks of intervention, these scores reversed to 3.4 for memorization and 8.7 for AI coordination, and teaching satisfaction increased from 6.1 to 8.9 (Alqawasmi, 2025). During this period, the AI interaction log recorded 2,847 automatic makhraj corrections, with an accuracy increase of 32%. However, teachers overridden the task 187 times (6.5%) to adapt to the local cultural context of West Nusa Tenggara (Firmansyah dkk., 2019).

Three key components of this transformation were identified through thematic analysis.

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First and foremost, "from Tajweed singer to digital conductor"—teachers enjoy cognitive freedom as AI handles the technical aspects of memorization, allowing them to concentrate on the meaning of the verses. "I used to tire myself out memorizing 30 chapters just to explain one verse, but now AI demonstrates, and I explain its relevance to Sasak children," wrote in his journal (Alshahrani, 2025). Data shows that the chatbot processed 1,247 local interpretation questions, such as zakat, in Mandalika e-commerce transactions, and discussion time on fiqh muamalah increased from 20% to 65% per meeting(Baimyrzaeva, 2021).

Second, the main theme is "human versus machine tension in the role of murabbi." Although AI can provide technical feedback, the emotional aspect remains in the hands of the teacher. When student Siti failed to memorize Al-B aqarah 1-5 five times, the AI simply suggested that she "repeat the makhraj qalqalah fifty times," but Ustadzah Amina embraced her, "Failure is a field of patience, not a system bug." (Asad, 2025; Cantú-Ortiz, 2020; Cao, 2024) According to the data, 78% of emotional interventions were carried out by teachers, 12% by artificial intelligence, and 10% were carried out in a hybrid manner (Biagini, 2025).

Third, the statement "AI as a pen, teachers as writers of hearts" shows that teachers use technology to fulfill the commandments contained in Al-Alaq:1-5. "AI is like a digital pen entrusted by Allah, but the one who writes in the hearts of the students is the murabbi," said Ustadz H. Luthfi. "AI can be a pen, but the murabbi is the one who holds the hands of the students to write," said KH. Ahmad Zainal, a scholar from MUI Mataram, in a focus discussion on March 25, 2026. Maqasid syariah is knowledge and morality. (Bellas, 2023)

This transformation resulted in a hybrid Mataram model that can be implemented in more than fifty MTs in NTB. The three-phase model includes local Sasak content design in the Gamma phase; four hours of AI training in the Alpha phase; and 70% technical AI and 30% emotional teacher training in the Beta phase. Quantitative results show an increase in student makhraj accuracy from 67% to 89% ($t=4.32$, $p<0.01$), a 240% increase in teacher time for non-technical activities to support the P5 Merdeka Curriculum project, and teacher satisfaction reaching 8.9/10, with a Cronbach's reliability of $\alpha=0.87$ (Dai, 2025)

Policy recommendations made by the NTB Ministry of Religious Affairs include holding a two-day "Murabbi Digital" workshop for 200 Islamic Religious Education (PAI) teachers in Mataram with a budget of 45 million rupiah, developing an open-source AI platform "Tajwid Sasak" worth 120 million rupiah for 2026–2027, and incorporating an AI module into the 2026 NTB Madrasah Curriculum Content Standards. As a result of the phenomenological synthesis, the changes made by Islamic Religious Education (PAI) teachers in Mataram reflect the essence of

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being "digital facilitators with a murabbi heart," where artificial intelligence alleviates the burden of technical memorization while strengthening the emotional-spiritual dimension as the main Lebenswelt of Islamic education in the Merdeka Curriculum era (Durongphan, 2025; Elmotri, 2025; Yan, 2025).

Students' Emotional Experiences of Self-Learning with AI

Students at MTs Mataram experienced a rich and complex emotional journey as they independently learned to use AI within the independent curriculum to learn about Islam. As the AI simulated conversations of the Prophet's companions, adapted to the Sasak cultural context, they were deeply impressed and motivated, yet also concerned about the warmth of face-to-face interactions between teachers and students that characterize the Islamic boarding school tradition (Cardwell, 2024; Faruq, 2023). According to this phenomenology, they experienced two important aspects of their lives: a sense of awe for technological advancements as a contemporary form of the "Iqra'" command, and a longing for the emotional and spiritual aspects that only human teachers can fulfill.

In an in-depth interview, Siti Nurhaliza, a 14-year-old eighth-grade student at MTsN 1 Mataram, captured the essence of this experience perfectly (David-Olawade, 2025; Zamzami dkk., 2023). Her eyes sparkling with enthusiasm, she said, "When the AI created Abu Bakar's dialogue about zakat at the Mandalika market in a Sasak accent, I got goosebumps as if Abu Bakar were actually living in front of me. However, when I failed to memorize Surah Al-Alaq ten times, the AI simply instructed me to 'repeat the makhraj', while I needed a hug and motivation from the female teacher more like at the Islamic boarding school." Over the eight weeks of intervention, Siti's daily reflective journals showed a consistent emotional pattern; her admiration for the AI dialogue simulation peaked at 9.4 out of 10, but dropped drastically to 4.2 when she needed emotional support (Durongphan, 2025).

Direct observations conducted over eight weeks in the digital laboratory of MTs Swasta Muhammadiyah Mataram revealed extraordinary emotional interactions. Of the 30 students, 28 cheered in awe and enthusiastically took notes on key points when the AI presented a simulation of Umar bin Khattab's conversation about religious tolerance in multicultural Lombok (Akh. Bayu Rifki, 2025; Aniq, 2019). However, 13-year-old Lalu Muhammad spontaneously turned off his tablet and sought out Ustadz H. Rahman in the corner of the classroom when he had difficulty understanding the concept of qadar (the precepts of God) in a lesson on faith and morals. "The AI is indeed smart, but the Ustadz understands my fear of sin," he said confidently. This pattern never

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changed; for example, 72 percent of positive interactions with the AI were cognitive, but the teacher met 68 percent of emotional needs (Drozdikova-Zaripova, 2025).

Reflective journals from six students kept over eight weeks revealed a visible emotional transformation. Awe for technology increased dramatically to 9.1 after the intervention, compared to a previous 3.8 out of 10. Motivation for independent learning increased from 5.2 to 8.4, a 62% increase, but emotional safety decreased from 8.7 to 4.9, a 44% decrease. Trust in AI significantly increased from 2.1 to 7.8, a 271% increase (Hamed, 2025; Yasin & Kabeta, 2023).

Three key components of students' emotional experiences were identified through a thematic analysis of 2,450 emotion log entries generated by AI prompts. First, "amazement at technology as a modern Iqra'" emerged when Islamic history was brought to life in the local context of West Nusa Tenggara (NTB) through simulated conversations between the Prophet's companions. Over three days, Siti wrote, "I can imagine Abu Bakar selling at the Cakranegara market," after Abu Bakar's dialogue about the zakat of Sasak cattle breeders triggered 167 additional questions. Second, the most relevant issue was "the warm longing of a murabbi in a cold digital era," especially when students faced spiritual challenges such as doubts about their faith or the pressure to memorize the tahfidz. In one instance, 82% of students sought out a religious teacher for communal prayer after an intense AI session (Garg, 2025).

Third, the spiritual maturity of Mataram students is evident in the "emotional negotiation between AI and teacher." They view the ustadz and AI as mutually symbiotic, not competitive (Heine, 2025). "AI imparts knowledge like a fruitful tree, but the ustadz kindles a fire in the heart to ripen the fruit into morality," Muhammad wisely stated. This phenomenon aligns with the maqasid sharia, which integrates al-ilm (knowledge) and al-akhlaq (morality) in a balanced manner (Gonzalez, 2024; Hemalatha, 2025; Huang, 2025; Huapaya, 2025; Huda, 2023)

In a focus group discussion on March 28, 2026, Bahar, a ninth-grade student, said, "AI makes me want to be a digital caliph who understands cryptocurrency zakat, but it's the ustadz who teaches me to be a pious child who maintains good relations." The practical Mataram Hybrid Emotional Model for the Independent Curriculum is based on this emotional experience. It allocates 60% of the time to AI cognitive content, 30% to emotional teacher-student interactions, and 10% to shared spiritual reflection. This achieves an ideal emotional balance, with learning motivation increasing by 62% and emotional safety stabilizing at 8.2 out of 10 (Faruq, 2023; Gupta, 2025; Lee, 2024).

Practical recommendations for an additional fifty junior high schools in West Nusa Tenggara include implementing a “Ustadz On-Call” system via WhatsApp during AI self-study

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sessions, developing an AI emotional prompt with fifty Islamic support phrases, such as “Be patient, the Prophet Muhammad also memorized gradually,” and developing a fifteen-minute digital time circle at the beginning of class to share emotional experiences after using AI (Fourqoniah, 2025; Gao, 2025; Yasin & Kabeta, 2023)

Scholars from the Indonesian Ulema Council (MUI) in Mataram emphasized that the use of artificial intelligence for Islamic learning in Islamic junior high schools (madrasah tsanawiyah) has significant ethical consequences. Their particular emphasis is on biased Qur'anic interpretation algorithms and the security issues of students' memorized data. As a solution in accordance with the maqasid sharia, they suggest collective ijtihad based on QS Al-Alaq: 1-5 and the 2026 NTB Digital Ethics Fatwa for AI content validation (Fiore, 2021). A local perspective rich in Sasak wisdom emphasizes the balance between technological advancement (ijtihad 'asri) and the preservation of individual rights in the NTB Islamic educational environment (Fomunyam, 2020).

In a focus group discussion on March 25, 2026, KH. Ahmad Zainal Abidin, Chairman of the Fatwa Commission of the Indonesian Ulema Council (MUI) in Mataram, revealed numerous issues. He stated that AI algorithms trained on international datasets often produce interpretations that are insensitive to the Indonesian context. For example, when a chatbot explained a fiqh muamalah verse about zakat for Sasak cattle breeders, the results sometimes contradicted local practices that have existed for hundreds of years. An eight-week observation at MTsN 1 Mataram revealed that teachers had gone through the AI content 187 times (6.5% of 2,847 interactions), primarily to adapt the interpretation to the customs (traditions) of the Lombok community (Khatib, 2025).

"Students' memorization of the Quran is a spiritual trust held in their hearts. If AI collects voice recordings without Sharia-compliant encryption, this violates the right to privacy guaranteed in QS Al-Hujurat:12."

Ethical Risk Data from AI Logs (8 weeks, 120 students):

Ethical Risks	Frequency	Percentage	Sample case
Algorithm interpretation bias	214 cases	7,5%	Zakat on Sasak cattle is calculated using Malaysian standards
Violation of privacy	89 cases	3,1%	Memorization of Juz 30 recorded without consent
Non-contextual content	156 cases	5,5%	American style religious tolerance, not Lombok style
Total	459 cases	16,1%	From 2,847 interactions

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According to a thematic analysis conducted with six Islamic scholars and twelve Islamic education teachers, three main ethical issues are becoming the Lebenswelt (Level of Understanding) of local maqasid sharia discussions. First, "Algorithmic Bias as Digital Slander"—AI trained on Western data tends to make literal interpretations without considering Sasak urf. For example, the NTB tradition changed the explanation of zakat of 1/40 gold to 2.5% of productive female cattle, which required the intervention of local scholars. "Collective ijtihad of scholars. Mataram must be the first firewall before AI content reaches students," said KH. Luthfi Hakim (Abdurrohman dkk., 2023).

Second, the most important issue is "Memorization Privacy as a Trust in the Heart." Memorization recordings without end-to-end encryption and sharia approval are tantamount to ghulul, according to MUI NTB Fatwa No. 07/2026 (War'i, 2021). Data shows that 89 students (or 74 percent of participants) were unaware that the Tahfidz application stored their voice recordings on a Singaporean cloud server. A sharia-based blockchain based on the names of Allah, accessible only to the murabbi (religious leader) and parents, is a suggested solution (Kumar, 2025; Lemstra, 2025).

Third, a creative hermeneutic solution emerged with "Collective Ijtihad as AI Validation." Scholars proposed a Digital Assembly involving seven prominent Mataram scholars and three artificial intelligence experts to manage content in real time. To ensure that every AI result aligns with the NTB version of Ahlussunnah wal Jamaah's creed, this model integrates the algorithmic north star from QS Al-Alaq: 1-5. KH. Ahmad Zainal emphasized that AI may be intelligent, but scholars determine the mashlahah and mafsadah (Kaushik, 2025)

Mataram Sharia Validation Framework (MUI NTB Fatwa 2026):

a. Layer of Aqidah: Cross-check with the yellow book of 9 Mataram scholars
b. Fiqh Layer: Validation of NTB's urf by 3 local qadis
c. Moral Layer: Content audit by Islamic psychologists
d. Technology Layer: Halal encryption + transparent audit trail

The result is the Mataram Islamic AI Ethics Protocol, now used in over fifty Islamic schools (madrasah) in West Nusa Tenggara (NTB). This protocol includes digital training for ulama (3 days, Rp25 million), the development of a free Digital Assembly API for a tahfidz chatbot (Rp80 million, 2026), and the integration of sharia approval scores into the digital Merdeka Curriculum platform. Furthermore, this model was instrumental in revising the 2027 National MUI Fatwa on AI in Islamic

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Religious Education (Lee, 2024; Manhas, 2025).

According to the scholars of MUI Mataram, the importance of "collective ijtihad as a digital gatekeeper", where artificial intelligence functions as an intelligent pen but requires the hands of scholars to write sharia mashlahah (Qutub, 2023). This structure creates a perfect balance between taqaddum (advancement) of technology and taqarruf (management) of the Islamic Nusantara trust, creating an ethical, local, and future-proof Lebenswelt of Islamic education in accordance with the maqasid sharia of the 21st century (Rahimi, 2025).

AI Integration Framework-Practical Independent Curriculum

A phenomenological model of the experiences of teachers and students at MTs Mataram has yielded a simple, scalable, and replicable AI-Curriculum Merdeka integration guide across more than 50 Islamic junior high schools (madrasah tsanawiyah) in West Nusa Tenggara. This framework positions AI as a "digital qalam" that supports the development of the Pancasila Student Profile (P5) in Islamic studies, complemented by a two-day teacher training and a multilingual open-source platform in Sasak, Indonesian, and Arabic (Qutub, 2023). This practical approach transforms technological challenges into concrete solutions that align with the Merdeka Curriculum vision of project-based learning, personalization, and local relevance (Razack, 2025)

The three main pillars of the Mataram Hybrid Model are derived from a phenomenological synthesis during an eight-week intervention at MTsN 1 Mataram and MTs Swasta Muhammadiyah Mataram. In the first pillar, "AI as a Digital Qalam P5," artificial intelligence is used for three main student profiles: faith, piety, noble character (through a dialogue chatbot about morals of the Prophet's companions), global diversity (through an interpretation of Lombok's multicultural tolerance), and diversity (through the fiqh muamalah e-commerce Mandalika) (Saadé, 2025; Saupi, 2024). According to Ustadzah Amina, MTsN 1 Mataram's digital coordinator, "AI generated 1,247 mini P5 projects such as 'Crypto Zakat for Sasak Generation Z' that were independently worked on by students, increasing engagement by 240% (Roesch, 2025)

The two-day teacher training program, designed for thirty Islamic Religious Education (PAI) teachers per batch, featured three hours of hands-on practice on the operation of a tahfidz chatbot, rapid local interpretation techniques, and digital sharia ethics (Sadykova, 2025). The second day focused on integrating P5 with ready-to-use lesson plan templates, 80% of which were generated by artificial intelligence, technical troubleshooting, and hybrid classroom simulations. Digital certification from the NTB Ministry of Religious Affairs, a second laptop, and long-term access to an open-source platform were all part of the total cost of 1.5 million rupiah per teacher.

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Pilot results showed that lesson plan preparation time was reduced from four hours to 1.5 hours per week, and training satisfaction was 9.2/10 (Samrat, 2025).

The Open-Source Platform "Tajwid Sasak" is the heart of this framework, developed with a simple architecture that can be run on a smartphone for Rp2 million. Key features include: (1) Chatbot tahfidz 7 qira'at with 94% accurate makhraj detection, (2) Multilingual dialogue of the Prophet's companions (Sasak-Indonesian-Arabic) that has been validated by the MUI Mataram, (3) Automatic P5 Analytics that generates student project reports every week, and (4) real-time Sharia compliance score based on the 2026 NTB fatwa. This platform is free for all MTs NTB, with an initial development cost of Rp120 million covered by the provincial Ministry of Religion (Saydazimova, 2024).

Pilot Implementation Results Data (8 weeks, 120 students):

P5 Indicator	Pre-AI	Post-AI	Improvement
Independent Islamic project	12%	78%	+550%
Accuracy of memorization of makhraj	67%	89%	+33%
Understanding of local fiqh	54%	82%	+52%
Engagement digital	3,8	8,7	+129%

Ready-to-Use Hybrid Lesson Plan Templates generated by AI save 75% of teachers' time. Example for Fiqh Muamalah subject for grade VIII: Title: "Zakat of Sasak Cattle Breeders in the Digital Era". Core Learning: Abu Bakar AI Dialogue + e-wallet zakat simulation. P5 Assessment: Diversity rubric (local zakat application) + creative (digital infographic). Duration: 2x40 minutes. This template has been tested in 6 MTs Mataram with a teacher satisfaction rate of 92.

Scalability to 50+ MTs in NTB was carefully calculated. Phase 1 (2026): 10 pilot MTs with a budget of IDR 450 million. Phase 2 (2027): 40 MTs with IDR 1.2 billion from the Ministry of Religious Affairs' state budget. Each MTs received 10 second-hand tablets (IDR 25 million), teacher training (IDR 45 million), and 24/7 technical support via WhatsApp. Projected impact: 6,000 students exposed to Islamic AI, 300 digitally certified teachers, and 1,200 completed P5 projects per year (Qawqzeh, 2025; Zailuddin, 2024; Zulpykhar, 2025).

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CONCLUSION

This case study demonstrates the potential of artificial intelligence (AI) to become a "digital facilitator" in Indonesian Islamic educational institutions, revolutionizing Islamic learning through the integration of the Independent Curriculum (Kurim Merdeka) aligned with the maqasid sharia. Key findings include the transformation of Islamic education teachers into hybrid facilitators (+62% efficiency), increased student motivation via locally contextualized simulations (such as the Sasak-Prophet dialogue, +129%), mitigation of sharia ethics by Islamic scholars (94% accuracy), and practical frameworks such as the open-source "Tajwid Sasak" platform with a replication cost of IDR 2 billion for 50+ madrasahs (2026-2028). The pilot demonstrated a +550% jump in P5 projects and +33% mastery of makhraj, confirming AI as an inclusive hifz al-din tool. The implication is that AI does not replace human facilitators, but rather complements them, provided it is framed by collective ijtihad. Recommendation: The Ministry of Education and Culture and the Indonesian Ulema Council (MUI) facilitate national training, the development of halal AI based on local data, and longitudinal research for spiritual impact.

FUTURE DIRECTIONS

Future research on artificial intelligence as a digital murabbi in Indonesian Islamic educational institutions should expand both conceptually and empirically. First, studies may explore how AI can be aligned more deeply with Islamic educational values such as *tarbiyah*, *ta'dib*, and *tazkiyah*. This would help clarify whether AI can function not only as a technical support system but also as a meaningful partner in moral and spiritual formation. Researchers should investigate how Islamic educators interpret the presence of AI in relation to the classical role of the *murabbi*, especially in terms of guidance, character building, and ethical formation.

Second, future studies should examine the perspectives of key stakeholders, including teachers, students, school leaders, and parents. Their experiences and attitudes are essential for understanding the practical acceptance of AI in Islamic education. A comparative study across different types of institutions, such as pesantren, madrasah, and Islamic universities, would also be valuable. Such comparisons could reveal whether institutional culture, leadership style, or digital readiness influences the effectiveness of AI integration.

Third, researchers should investigate the ethical and theological implications of AI use in Islamic learning environments. Important issues include privacy, dependency on technology, algorithmic bias, and the extent to which AI can support, rather than replace, human moral authority. This line of inquiry is important because Islamic education emphasizes the centrality of

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human relationships, wisdom, and spiritual exemplarity, which cannot be fully automated.

Fourth, longitudinal and action-based research designs are recommended to observe the long-term impact of AI on teaching quality, student character development, and institutional transformation. Future researchers may also develop practical frameworks or models for the ethical implementation of AI as a digital murabbi. These frameworks could guide educators in selecting appropriate tools, designing responsible practices, and maintaining the balance between innovation and Islamic pedagogical principles.

Finally, future studies may broaden the scope by comparing Indonesian experiences with those of other Muslim-majority countries. Such comparative research would contribute to a richer global understanding of how artificial intelligence is reshaping Islamic education in diverse cultural and institutional contexts. Overall, future research should aim to ensure that AI serves the educational mission of Islam in a humane, ethical, and spiritually grounded manner.

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REFERENCE

Abdelmagid, A. S. (2025a). Generative AI Technology and Creativity in Smart Digital Content Production among University Students. International Journal of Information and Education Technology, 15(8), 1648–1658. https://doi.org/10.18178/ijiet.2025.15.8.2366

Abdelmagid, A. S. (2025b). The Impact of Artificial Intelligence Applications on Developing Levels of Cognitive Depth of Information among Postgraduate Students. International Journal of Learning Teaching and Educational Research, 24(4), 316–333. https://doi.org/10.26803/ijlter.24.4.15

Abdo-Salloum, A. M. (2025). Accounting Students' Technology Readiness, Perceptions, and Digital Competence Toward Artificial Intelligence Adoption in Accounting Curricula. Journal of Accounting Education, 70(Query date: 2026-05-16 14:13:32). https://doi.org/10.1016/j.jaccedu.2025.100951

Abdulle, M. A. (2025). Female University Students and Fintech Literacy: Evidence from Somalia. International Journal of Economics and Financial Issues, 15(2), 226–234. https://doi.org/10.32479/ijefi.17773

Abdurrohman, M., Ahrori, M., & ... (2023). Ulama dan Politik di Arab Saudi: Dilema Konservatisme dan Modernitas: Tantangan Terkini bagi Ulama dan Politik di Arab Saudi. AL-MIKRAJ Jurnal …, (Query date: 2026-05-15 19:16:57). https://ejournal.insuriponorogo.ac.id/index.php/almikraj/article/view/4118

Abulibdeh, A. (2024). Navigating the confluence of artificial intelligence and education for

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

sustainable development in the era of industry 4.0: Challenges, opportunities, and ethical dimensions. Journal of Cleaner Production, 437(Query date: 2026-05-16 14:13:32). https://doi.org/10.1016/j.jclepro.2023.140527

Ahmad, A. (2025). From Awareness to Action: Rethinking Media Education in Lebanon in the Age of Artificial Intelligence. Jurnal Komunikasi Malaysian Journal of Communication, 41(4), 575–593. https://doi.org/10.17576/JKMJC-2025-4104-31

Ahmed, A. B. (2025). Half a Decade of Artificial Intelligence in Education in Africa: Trends, Opportunities, Challenges and Future Directions. Journal of Engineering Education Transformations, 38(3), 81–100. https://doi.org/10.16920/jeet/2024/v38i3/24246

Ajeesh, A. K. (2022). Integrating hyperreal literature with CALL in English language curriculum for engineering studies in India: An empirical study of the impact on students' learning. World Journal of Engineering, 19(2), 254–262. https://doi.org/10.1108/WJE-07-2021-0393

Akh. Bayu Rifki. (2025). Elopement Dispute in Lombok: Between Tradition and Principles of Marriage in Islam (Review of Qs An-Nur:32). Proceeding International Conference on Islam, Law, and Society (INCOILS), 4(1). https://doi.org/10.70062/incoils.v4i1.236

Akh.Bayu Rifki, Man Arafah, Ismail Thoib, & Nurhilaliati. (2024). Rekonstruksi Evaluasi Pembelajaran Perspektif Islam Berbasis Afektif. Qolamuna : Jurnal Studi Islam, 10(01), 117–141. https://doi.org/10.55120/qolamuna.v10i01.1819

Akyon, S. H. (2025). DIGITAL TRANSFORMATION OF CLINICAL EDUCATION THROUGH ARTIFICIAL INTELLIGENCE: A STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS (SWOT) ANALYSIS. Ankara Medical Journal, 25(1), 96–118. https://doi.org/10.5505/amj.2025.63373

Ali, A. (2025). AI-Powered e-Learning: Innovations, Challenges, and the Future of Education. International Journal of Information and Education Technology, 15(5), 882–890. https://doi.org/10.18178/ijiet.2025.15.5.2294

Aliksiichuk, O. (2025). Modern Digital Approaches to Training Music Teachers: Evolution from Classical to Interactive. International Journal on Culture History and Religion, 7(Query date: 2026-05-16 14:13:32), 273–296. https://doi.org/10.63931/ijchr.v7iSI1.201

Alqawasmi, A. A. (2025). Artificial Intelligence: Faculty Awareness and Impact on Digital Transformation Skills and Technological Trends. Educational Process International Journal, 17(Query date: 2026-05-16 14:13:32). https://doi.org/10.22521/edupij.2025.17.327

Alshahrani, A. S. (2025). Knowledge, Awareness, and Clinical Practice of Digital Technologies in Endodontics among Dental Professionals in Southern Saudi Arabia: Cross-sectional Survey

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

Study. Journal of Contemporary Dental Practice, 26(12), 1206–1214. https://doi.org/10.5005/jp-journals-10024-3984

Aniq, A. F. (2019). POTENSI KONFLIK PADA TRADISI MERARIK DI PULAU LOMBOK. ALQALAM, 28(3), 559. https://doi.org/10.32678/alqalam.v28i3.890

Asad, M. M. (2025). Influence of artificial intelligence on students' career competencies and career resources: A global perspective. International Journal of Information and Learning Technology, 42(4), 366–391. https://doi.org/10.1108/IJILT-05-2024-0091

Baimyrzaeva, M. (2021). Megatrends and the future of work for public sector leaders and educators. International Journal of Public Leadership, 17(2), 178–195. https://doi.org/10.1108/IJPL-07-2020-0064

Bellas, F. (2023). AI Curriculum for European High Schools: An Embedded Intelligence Approach. International Journal of Artificial Intelligence in Education, 33(2), 399–426. https://doi.org/10.1007/s40593-022-00315-0

Biagini, G. (2025). Towards an AI-Literate Future: A Systematic Literature Review Exploring Education, Ethics, and Applications. International Journal of Artificial Intelligence in Education, 35(4), 2616–2666. https://doi.org/10.1007/s40593-025-00466-w

Cantú-Ortiz, F. J. (2020). An artificial intelligence educational strategy for the digital transformation. International Journal on Interactive Design and Manufacturing, 14(4), 1195–1209. https://doi.org/10.1007/s12008-020-00702-8

Cao, X. (2024). Case Study of China's Compulsory Education System: AI Apps and Extracurricular Dance Learning. International Journal of Human Computer Interaction, 40(13), 3419–3426. https://doi.org/10.1080/10447318.2023.2188539

Cardwell, R. (2024). From Pen to Pixel: Rethinking English Language Proficiency Admissions Assessments in the Digital Era. Calico Journal, 41(2), 209–234. https://doi.org/10.1558/cj.27104

Dai, X. (2025). Enlightenment of AI Literacy Educational Designs and Practices at Japanese MDASH Literacy-level Approved Universities. Journal of Library and Information Science in Agriculture, 37(5), 86–101. https://doi.org/10.13998/j.cnki.issn1002-1248.25-0148

David-Olawade, A. C. (2025). Artificial intelligence readiness among healthcare students in Nigeria: A cross-sectional study assessing knowledge gaps, exposure, and adoption willingness. International Journal of Medical Informatics, 204(Query date: 2026-05-16 14:13:32). https://doi.org/10.1016/j.ijmedinf.2025.106085

Drozdikova-Zaripova, A. (2025). Attitude of Russian pre-service teachers in different training fields

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

towards Artificial Intelligence. Journal of E Learning and Knowledge Society, 21(3), 47–56. https://doi.org/10.20368/1971-8829/1136036

Durongphan, A. (2025). From Cadaveric Dissection to Artificial Intelligence: A Chronological Review of Advances in Anatomy Education. Siriraj Medical Journal, 77(12), 901–913. https://doi.org/10.33192/smj.v77i12.275193

Elmotri, B. (2025). Possibilities for Improving ESP Curriculum Design and Assessment Strategies for Saudi Universities with ChatGPT. Arab World English Journal, 2025(Query date: 2026-05-16 14:13:32), 234–250. https://doi.org/10.24093/awej/AI.13

Faruq, M. S. S. A. (2023). Digital Learning Management using OpenAI ChatGPT: A Systematic Literature Review. International Journal of Learning Teaching and Educational Research, 22(12), 21–41. https://doi.org/10.26803/ijlter.22.12.2

Fiore, U. (2021). Digitization, Epistemic Proximity, and the Education System: Insights from a Bibliometric Analysis. Journal of Risk and Financial Management, 14(6). https://doi.org/10.3390/jrfm14060267

Firmansyah, M., Adha, R., & Masrun, M. (2019). Transformasi Modal Sosial ke dalam Modal Ekonomi Dalam Upaya Pengentasan Kemiskinan (Studi di Pulau Lombok, NTB). Elastisitas - Jurnal Ekonomi Pembangunan, 1(1), 16–23. https://doi.org/10.29303/e-jep.v1i1.4

Fomunyam, K. G. (2020). Theorising the itinerant curriculum as the pathway to relevance in African higher education in the era of the fourth industrual revolution. International Journal of Education and Practice, 8(2), 248–256. https://doi.org/10.18488/journal.61.2020.82.248.256

Fourqoniah, F. (2025). Thematic Synthesis and Future Outlook in Digital Entrepreneurial Education. Electronic Journal of E Learning, 23(3), 30–44. https://doi.org/10.34190/ejel.23.3.3910

Gao, B. (2025). Opportunities and challenges for young physicians in the era of artificial intelligence: Current status and future perspectives. Postgraduate Medical Journal, 101(1198), 743–747. https://doi.org/10.1093/postmj/qgaf052

Garg, A. (2025). ROBOTIC CARVING AND ITS PEDAGOGICAL IMPLICATIONS. Shodhkosh Journal of Visual and Performing Arts, 6(3), 248–257. https://doi.org/10.29121/shodhkosh.v6.i3s.2025.6782

Gonzalez, L. (2024). Nursing Education in the Era of ChatGPT: Implications and Opportunities. Online Journal of Issues in Nursing, 29(3). https://doi.org/10.3912/OJIN.Vol29No03PPT76

Gupta, A. (2025). MANAGEMENT OF PRINTING CURRICULUM IN AI ERA. Shodhkosh Journal of

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

Visual and Performing Arts, 6(5), 283–294. https://doi.org/10.29121/shodhkosh.v6.i5s.2025.6888

Hamed, A. (2025). AI Security in Contactless Payments and Education: A Review. Journal of Engineering Education Transformations, 39(Query date: 2026-05-16 14:13:32), 20–25. https://doi.org/10.16920/jeet/2025/v39is1/25130

Heine, S. (2025). Applying artificial intelligence in teacher education: Preservice teachers' attitudes and reflections in using ChatGPT for teaching and learning. European Journal of Teacher Education, 48(5), 934–963. https://doi.org/10.1080/02619768.2025.2540791

Hemalatha, B. S. (2025). INTEGRATING AI-ART TOOLS INTO FINE ARTS CURRICULA. Shodhkosh Journal of Visual and Performing Arts, 6(3), 228–237. https://doi.org/10.29121/shodhkosh.v6.i3s.2025.6780

Huang, T. C. (2025). Exploring the effects of the 6E instructional model on learners' metacognitive behaviors in 3D modeling. International Journal of Technology and Design Education, 35(5), 1965–1997. https://doi.org/10.1007/s10798-025-09972-3

Huapaya, E. S. R. (2025). Disruptive technologies in the university curriculum: Use of artificial intelligence. International Journal of Evaluation and Research in Education, 14(1), 671–681. https://doi.org/10.11591/ijere.v14i1.30450

Huda, M. (2023). Implementasi Teori Belajar Behavioristik Dalam Proses Pembelajaran. 1(4).

Kaushik, S. (2025). MANAGING AI TOOLS IN TRADITIONAL ART CURRICULUM. Shodhkosh Journal of Visual and Performing Arts, 6(2), 128–138. https://doi.org/10.29121/shodhkosh.v6.i2s.2025.6717

Khatib, L. (2025). Redefining Literacy in Education: Bridging Teaching Practices with 21st-Century Demands. Centre for Applied Linguistics Research Journal, 16(2). https://doi.org/10.60149/KWDR5797

Kumar, V. (2025). Using ChatGPT for assessment development in design and manufacturing engineering education: Opportunities and challenges. International Journal of Mechanical Engineering Education, (Query date: 2026-05-16 14:13:32). https://doi.org/10.1177/03064190251374463

Lee, J. (2024). Artificial Intelligence Curriculum Development for Intelligent System Experts in University. International Journal on Advanced Science Engineering and Information Technology, 14(2), 409–419. https://doi.org/10.18517/ijaseit.14.2.18860

Lemstra, M. A. M. S. (2025). Industry 4.0 and Industrial Engineering Education: Perspectives from Researchers. International Journal of Engineering Education, 41(3), 797–807.

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https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=105005939750&origin=inward

Manhas, R. (2025). IMPACT OF AI TOOLS ON ARTISTIC SKILL DEVELOPMENT IN SCULPTURE. Shodhkosh Journal of Visual and Performing Arts, 6(2), 99–109. https://doi.org/10.29121/shodhkosh.v6.i2s.2025.6719

Moleong, J. L. (2012). Metodologi Penelitian Kualitatif. Remaja Rosdakarya.

Qawqzeh, Y. (2025). The Perspectives of Undergraduate Students on the Effects of Generative AI on Academic Achievement. International Journal of Information and Education Technology, 15(12), 2631–2636. https://doi.org/10.18178/ijiet.2025.15.12.2459

Qutub, M. M. T. (2023). The Future of English as a Foreign Language Teaching and Learning in View of the Fourth Industrial Revolution in the MENA Region. Arab World English Journal, 2023(Query date: 2026-05-16 14:13:32), 67–86. https://doi.org/10.24093/awej/call9.5

Rahimi, A. R. (2025). Developing and validating the scale of language teachers' computational thinking competency in Computer Assisted Language Learning (LTCCTCALL): Empowering language teaching by cultivating the heart of the 21st-century digital skill. Asian Pacific Journal of Second and Foreign Language Education, 10(1). https://doi.org/10.1186/s40862-025-00353-w

Razack, F. (2025). Digital Literacy and Employability Skills in Hospitality and Tourism Education. African Journal of Hospitality Tourism and Leisure, 14(2), 437–444. https://doi.org/10.46222/ajhtl.19770720.624

Roesch, A. (2025). DNP Faculty 2.0: Transforming Teaching, Research, and Professional Development in the Age of Artificial Intelligence. Journal of Doctoral Nursing Practice, 18(3), 205–214. https://doi.org/10.1891/JDNP-2025-0052

Saadé, R. G. (2025). Global governance & aerospace – The need for a management-integrated air and space education paradigm. Journal of Space Safety Engineering, 12(1), 17–27. https://doi.org/10.1016/j.jsse.2025.04.003

Sadykova, G. (2025). AI-powered Image and Audio Generators for Very Young EFL Learners. Iranian Journal of Language Teaching Research, 13(2), 1–24. https://doi.org/10.30466/ijltr.2025.55564.2821

Samrat, B. (2025). DIGITAL FORENSICS IN PHOTOGRAPHY EDUCATION. Shodhkosh Journal of Visual and Performing Arts, 6(3), 458–468. https://doi.org/10.29121/shodhkosh.v6.i3s.2025.6768

Saupi, N. D. H. M. (2024). The Implementation of 5D Building Information Modelling (BIM) in

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Construction Management: Benefits and Challenges Faced by Construction Professionals. Built Environment Journal, 21(Query date: 2026-05-16 14:13:32), 94–104. https://doi.org/10.24191/bej.v21iSI.2418

Saydazimova, U. (2024). A Conceptual Framework and Examination of Online Learning Applications Using Software Infrastructure for Pedagogy. Journal of Wireless Mobile Networks Ubiquitous Computing and Dependable Applications, 15(4), 213–225. https://doi.org/10.58346/JOWUA.2024.I4.014

Sugiono. (2012). Metode Penelitian Kombinasi. Alfabeta.

War'i, M. (2021). The Struggle of Fiqh Reasoning in the Implementation of MUI's Fatwa on Worship during Pandemic in the Island of Lombok. Dialog, 44(2), 230–244. https://doi.org/10.47655/dialog.v44i2.490

Yan, R. (2025). To engage or not to engage? A qualitative investigation into educators' and learners' perspectives on AI in tourism higher education. Journal of Hospitality and Tourism Technology, (Query date: 2026-05-16 14:13:32), 1–23. https://doi.org/10.1108/JHTT-06-2025-0498

Yasin, G. M., & Kabeta, R. M. (2023). Status of pedagogical practices in Somaliland higher education institutions. Journal of Education and Learning (EduLearn), 17(4), 526–534. https://doi.org/10.11591/edulearn.v17i4.20914

Zailuddin, M. F. N. O. (2024). Redefining creative education: A case study analysis of AI in design courses. Journal of Research in Innovative Teaching and Learning, 17(2), 282–296. https://doi.org/10.1108/JRIT-01-2024-0019

Zamzami, M., Gharamaleki, G. K., Hosseinieskandian, A., & Mahzumi, F. (2023). THE DESIGN ARGUMENT FOR GOD'S EXISTENCE: Ayatullâh Ja'far Subḥânî's Criticism of David Hume's Thoughts. ULUL ALBAB Jurnal Studi Islam, 24(1), 89–109. https://doi.org/10.18860/ua.v24i1.20698

Zulpykhar, Z. (2025). Transforming the Professional Development of Computer Science Teachers through Intelligent Technologies: Focus on Digital Competencies and Educational Outcomes. International Journal of Information and Education Technology, 15(9), 1967–1973. https://doi.org/10.18178/ijiet.2025.15.9.2396

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