



The Transformation of Islamic Education in the Age of Artificial Intelligence: Achieving a Balance between Reason, Faith, and Technology

Nurhayati Ali^{1*}, Hardiman G², Dewi Subriani³

¹Institut Agama Islam Negeri Parepare, Parepare, Indonesia

^{2,3}Universitas Muhammadiyah Parepare, Parepare, Indonesia.

hjstnurhayati@iainpare.ac.id¹, panglima.dhiman@gmail.com²,

dewisubriani@gmail.com³

ABSTRACT

Keywords:

AI Technology;
Islamic Education;
Reason and Faith;
Adaptive Learning;
Student Character;
Digital Education

The integration of artificial intelligence (AI) into Islamic primary education presents a distinctive pedagogical challenge: how to harness the efficiency and personalisation affordances of AI while preserving the faith-centred, morally oriented foundations of tarbiyah Islamiyah. This qualitative case study investigates how teachers at SD Negeri 019 Bengalon, East Kalimantan, Indonesia, navigate this challenge in everyday classroom practice. Data were collected through in-depth semi-structured interviews with four purposively selected teachers and corroborated through school documentation, and were analysed using thematic analysis. These findings extend existing theoretical accounts of Islamic education in the digital era by providing practice-level evidence of a reason-faith-data triad that functions as an integrated epistemic model rather than a set of competing priorities. The study contributes to international scholarship on AI in education by demonstrating that the ethical challenges of technology adoption are context-specific, and that Islamic educational contexts require policy frameworks explicitly grounded in their values orientation. Recommendations address teacher professional development, institutional policy design, and infrastructure investment.

Received: 02-02-2026

Revised: 15-04-2026

Accpeted: 28-06-2026



This is an open-access article under the CC-BY-SA license.

A. Introduction

Islamic education (*tarbiyah Islamiyah*) carries a distinct educational mission: to cultivate students who are not only intellectually capable, but also grounded in faith, morality, and spiritual values (Mumtazah et al., 2025; Solihutauha, 2025). This foundational mission is now being tested by the rapid rise of artificial intelligence (AI) in educational settings. Globally and in Indonesia, AI-based tools – ranging from adaptive learning platforms to automated assessment systems – are increasingly being adopted across all levels of schooling, including those with Islamic educational orientations (Ilfi & Manaf, 2024; Rochim, 2024). The accelerating pace of this digital transformation creates a pressing tension: while AI offers demonstrable gains in learning efficiency and personalisation (Arisanti et al., 2024; Peliza, 2024), it also risks displacing the human, relational, and spiritually-oriented dimensions that are central to Islamic pedagogy. Empirical observations and preliminary field studies at primary schools have indicated that teachers often struggle to reconcile the data-driven logic of AI systems with the values-based principles of Islamic education (Hasmiza, 2025; Kasmila et al., 2025). This tension – between technological capability and religious integrity – constitutes the central problematic that motivates the present study.

The broader context of digital transformation in Indonesian education intensifies this challenge. Government initiatives such as *Merdeka Belajar* and various digital literacy programmes have accelerated the integration of technology into classrooms (Nashrullah et al., 2025). Yet the pace of technological adoption has frequently outrun the development of frameworks that account for Islamic educational values. At the primary school level – where students are at a formative stage of both cognitive and moral development – the stakes of this imbalance are particularly high (Herawati et al., 2025; Kambali et al., 2019). Without a principled approach to technology integration, schools risk producing students who are digitally fluent but spiritually and morally adrift. It is therefore imperative to examine how Islamic education at this critical level can adapt to technological developments without compromising the foundational values of *iman* (faith), *aql* (reason), and *akhlak* (character) that define its educational purpose.

A growing body of research has examined the role of technology in Islamic education. Studies have demonstrated that AI can enhance teaching effectiveness by tailoring instructional materials to individual student needs and

providing real-time feedback (Arisanti et al., 2024; Widodo et al., 2024). Other works have explored the broader transformation of Islamic educational curricula in the digital era, highlighting the potential of technology to make religious learning more engaging and accessible (Alfi et al., 2023; Aprillia & Iryanti, 2024; Hasmiza, 2025). Research has also affirmed that Islamic education must prioritise moral and spiritual development alongside intellectual growth – a goal that poses distinctive challenges in technology-mediated environments (Herawati et al., 2025; Manan, 2023; Rohman et al., 2024; Rosyidah et al., 2025). However, these contributions share a critical limitation: they treat technology integration and Islamic values as parallel concerns to be managed separately, rather than examining the constitutive tension between them. Most existing studies focus on either the pedagogical affordances of AI or the normative demands of Islamic education in isolation, without addressing how the simultaneous pursuit of both can be achieved in practice – particularly at the primary education level where value formation is most fundamental (Mumtazah et al., 2025).

The specific gap this study addresses is the absence of empirically grounded research that examines how the balance between reason (aql), faith (iman), and data – the three epistemic pillars of AI-integrated Islamic education – can be maintained in actual classroom practice. While Mumtazah et al. (2025) and Ikhwan (2024) have theorised the integration of revelation and reason in contemporary Islamic education, and Ridwan and Maryati (2024) have acknowledged the tensions between Islamic tradition and digital modernity, no study has yet explored how frontline teachers at Islamic primary schools navigate these tensions on a day-to-day basis, nor what institutional and pedagogical conditions enable or hinder this balance. This gap is consequential: without practice-based evidence, curriculum designers and policymakers lack the grounded insights needed to develop technology integration frameworks that are genuinely compatible with Islamic educational principles.

This study addresses this gap by offering two dimensions of novelty. First, it focuses specifically on primary-level Islamic education in Indonesia a context that has been largely overlooked in favour of higher education settings in existing literature. Second, it employs an integrative analytical framework that treats reason, faith, and data not as competing priorities but as mutually constitutive elements of a coherent Islamic educational vision in the AI era. Drawing on qualitative data from in-depth interviews with teachers at SD Negeri 019 Bengalon, this study aims to identify and explore how teachers adopt AI-based

technology in their practice while sustaining Islamic educational values grounded in reason and faith. The urgency of this investigation is underscored by Indonesia's rapid expansion of digital education infrastructure a trajectory that, without deliberate value-anchored guidance, will continue to reach primary schools before adequate pedagogical frameworks are in place (Santoso, 2025; Nashrullah et al., 2025). The findings are intended to provide actionable insights for educators, curriculum developers, and education policymakers in designing technology integration approaches that strengthen, rather than erode, the moral and spiritual foundations of Islamic education.

B. Method

This study employs a qualitative approach with a case study design (Assyakurrohim et al., 2022) to generate an in-depth understanding of how artificial intelligence is integrated into Islamic education at SD Negeri 019 Bengalon. A qualitative approach was selected because the central research question — how teachers sustain a balance between reason, faith, and data in AI-mediated classrooms — is inherently exploratory and context-dependent. It cannot be adequately answered through quantified measurements; rather, it requires attending to the meanings, perceptions, and lived practices of those directly involved in the educational process (Creswell & Poth, 2018). A case study design was specifically chosen because it enables the researcher to examine a contemporary phenomenon within its real-life context, particularly when the boundaries between the phenomenon and its context are not clearly evident (Yin, 2018). SD Negeri 019 Bengalon represents a revelatory case: a public primary school that is actively navigating the integration of AI-based tools while operating within an Islamic educational framework a combination that is increasingly common yet under-researched in the Indonesian context.

1. Research Participants

Participants were selected through purposive sampling to ensure that informants possessed direct, relevant experience with the integration of technology in Islamic education. Four teachers at SD Negeri 019 Bengalon were selected, comprising three classroom teachers and one Islamic Religious Education (PAI) teacher, all of whom were actively using AI-based platforms in their teaching at the time of data collection. The demographic profile of participants is presented in Table 1.

Table 1. Research Informants

No	Initials	Position	Academic Qualifications	Role in Study
1	N.	Class Teacher	Bachelor of Education	Primary informant on general AI use in classroom
2	L.	Class Teacher	Bachelor of Education	Primary informant on Google Classroom and assessment tools
3	E.	Class Teacher	Bachelor of Education	Primary informant on gamification-based learning applications
4	R.	Islamic Religious Teacher (PAI)	Bachelor of Islamic Education	Primary informant on faith-technology integration in PAI

2. Data Collection

Data were gathered through two complementary methods. The primary source of data was in-depth, semi-structured interviews conducted directly with each of the four participants. Interview questions were designed to elicit participants' perspectives on three domains: (1) their actual use of AI-based tools in classroom practice, (2) the strategies they employ to maintain Islamic educational values alongside technological integration, and (3) the institutional challenges they encounter in this process. Interviews were conducted in Bahasa Indonesia, audio-recorded with participants' consent, and subsequently transcribed verbatim.

Secondary data were obtained through documentation, including school curriculum documents, technology usage guidelines, and relevant policy documents related to digital education at the school level. These documentary sources served to contextualise and corroborate the interview data, providing an institutional perspective that complemented the individual accounts of participants.

3. Data Analysis

Interview transcripts and documentary data were analysed using thematic analysis following the six-phase procedure described by Braun and Clarke (2006): (1) familiarisation with the data through repeated reading of transcripts, (2) generation of initial codes from semantically and latently meaningful units, (3) searching for themes by collating codes into candidate thematic clusters, (4) reviewing themes against the full dataset to ensure coherence and distinctiveness, (5) defining and naming themes with clear thematic statements, and (6) producing the report. The analysis was conducted inductively, allowing themes to emerge from the data rather than being imposed from prior theoretical frameworks, while remaining sensitive to the Islamic educational context that shaped participants' responses.

4. Trustworthiness

The trustworthiness of findings was established through source triangulation and method triangulation. Source triangulation was achieved by systematically comparing the accounts of all four informants: where a finding was reported by three or more participants independently, it was treated as a convergent theme; divergent accounts were noted and examined for contextual explanations. Method triangulation was achieved by cross-referencing interview data with documentary evidence – for instance, participants' claims about the availability or absence of AI training were checked against school records and official communication documents. In addition, a member-checking procedure was carried out: a summary of emerging themes was shared with two of the participants, who confirmed that the interpretations accurately reflected their experiences and intentions. In addition to interviews, this study also collected documentation in the form of relevant AI studies and educational documents available at the school to understand the context of technology application in Islamic education at the school.

5. Data Collection Techniques

Interviews were conducted directly with informants to explore their experiences with the application of AI technology in the teaching process, as well as how they maintain a balance between reason, faith, and data in the context of Islamic education.

Documents related to education policy, the use of technology in schools, and relevant literature on AI in Islamic education were collected to provide further context on the research topic.

6. Data Collection Procedures

The steps taken in data collection were as follows: Conducting interviews with teachers who had been selected as informants, collect documentation containing AI studies and other data relevant to the research topic, analysing interview data and documentation using thematic analysis techniques to identify key themes that emerge.

7. Data Analysis Techniques

Data obtained from interviews and documentation was analysed using thematic analysis methods. The analysis process began with transcribing the interviews, followed by identifying codes and themes that emerged from the transcripts. These themes were used to answer the research questions and describe the teachers' experiences in adopting AI technology in the context of Islamic education.

8. Data Validity

The validity of the data in this study was ensured by using triangulation techniques, which included source triangulation and method triangulation. Source triangulation was carried out by collecting data from various informants, while method triangulation was carried out by using a combination of in-depth interviews and documentation analysis.

C. Result and Discussion

1. Result

The analysis of interview data and supporting documentation yielded three overarching themes that characterise how AI technology is experienced and managed within Islamic education at SD Negeri 019 Bengalon: (1) the role of AI in enhancing learning efficiency and personalisation, (2) teachers' active strategies for maintaining a balance between reason, faith, and data, and (3) the challenges and structural barriers that hinder effective technology integration.

a. AI as a Tool for Efficiency and Personalised Learning

All four participants reported that AI-based platforms — particularly Google Classroom, Kahoot!, and Wordwall — had produced measurable improvements in the efficiency of classroom management and the delivery of instructional materials. The automated assessment features of these platforms were especially valued, as they reduced the administrative burden on teachers and freed time for more direct student engagement.

Informant L. described the practical impact on her daily workflow:

"Google Classroom enables us to deliver materials and assignments more easily. The automatic assessment feature helps us save time, allowing us to focus more on providing personal guidance. However, we always remind students not to rely solely on technology in understanding religious studies. Reason and faith must be maintained."

This account is significant beyond its surface efficiency narrative. The final clause 'reason and faith must be maintained' — was not an afterthought but a deliberate pedagogical assertion. Across all four interviews, this framing recurred: technology was embraced for what it could do instrumentally, but was simultaneously bounded by what it must not displace. Informant N. expressed this tension most directly:

"Technology can help students learn faster, but we still have to ensure that Islamic moral and spiritual values are not neglected. Learning must continue to prioritise reason and faith."

The consistency of this position across informants — a finding confirmed through source triangulation — indicates that this is not merely an individual preference but a shared professional norm at the school. Teachers at SD Negeri 019 Bengalon have developed an implicit consensus that AI functions as a pedagogical instrument, not an educational authority.

Informant E. further illustrated how gamification tools were deployed within this framework:

"We use several applications to make learning more interactive, such as Kahoot! and Wordwall. This helps students stay engaged, but we always ensure that the material presented is in line with religious principles. We ensure that the learning objectives are not only based on knowledge, but also on shaping the character and faith of students."

This account reveals a deliberate content-filtering practice: teachers do not adopt AI-generated or platform-default content uncritically, but actively curate

and adapt it to align with Islamic educational objectives. This curatorial agency is a key finding that distinguishes the teachers' approach from passive technology adoption.

a. Balancing Reason, Faith, and Data – Teachers' Strategies

The second and most substantive theme concerns how teachers actively negotiate the tension between AI's data-driven logic and Islamic education's values-centred orientation. Rather than treating these as irreconcilable, participants described a set of deliberate strategies for holding them in productive tension.

Informant L. articulated the underlying epistemological principle that guided this balancing act:

"Although AI can provide useful data, we must always remember that Islamic education is not only about intellectual understanding, but also about the formation of faith. We need to integrate religious values into every step of learning that involves technology."

The phrase 'every step' is analytically important: it suggests that value integration is not confined to explicitly religious lessons but is understood as a cross-curricular imperative. This finding indicates that the teachers conceptualise Islamic education not as a subject area but as a pedagogical orientation that permeates all teaching activities, including those mediated by technology.

Informant R., the dedicated PAI teacher, elaborated on how this integration was operationalised in his religious education classes:

"Technology does make our work easier, but we always try to remind students that faith is the foundation of all knowledge. We use technology to enrich learning, but without sacrificing the emphasis on moral and ethical aspects that are at the core of Islamic education."

Informant R. also described how specific Quranic verses guided his classroom practice. Referring to QS. Ali Imran [3]: 190 which invites reflection on Allah's creation through the intellect he explained that this verse actively shaped how he introduced AI tools to students: rather than presenting AI as a source of answers, he framed it as an instrument for structured inquiry, consistent with the Quranic exhortation to use reason (*aql*) to observe and interpret the world. Similarly, the hadith 'Indeed, knowledge is light, and the light of Allah will not be given to those who commit sins' was invoked not as a prohibition on technology use but as a reminder of intentionality (*niyyah*): students were

encouraged to approach AI-assisted learning with sincere educational purpose, not passive consumption.

The verse QS. Al-Qasas [28]: 77 which counsels balance between worldly and spiritual pursuits was described by informant R. as the basis for a practical classroom policy: technology-mediated activities were explicitly allocated no more than half of available instructional time, with the remaining time devoted to values-centred discussion, moral reflection, and direct teacher-student dialogue. This finding demonstrates that religious texts were not merely rhetorical references but operational guides for concrete pedagogical decisions.

b. Challenges and Barriers to Technology Integration

Despite the teachers' evident commitment to principled technology integration, three interconnected barriers were consistently identified across interviews: insufficient teacher training, inadequate infrastructure, and the absence of supportive institutional policies.

With respect to training, informant N. identified a three-part deficit:

"We find it difficult to master all the available technological features, especially in utilising AI for student data analysis. The training we have received is still very limited, so many teachers do not yet know how to optimally utilise this technology to improve learning."

Analysis of this and related accounts reveals that the training gap operates at three distinct levels: (1) basic technical proficiency in using AI-based platforms, (2) pedagogical competence in designing AI-integrated lessons that maintain Islamic educational values, and (3) curriculum development skills for constructing digitally enhanced PAI learning sequences. Current professional development provision addresses only the first level intermittently, leaving the deeper pedagogical and curricular dimensions entirely unaddressed.

Infrastructural limitations constituted a second major barrier. Informant E. reported that the school's concerns extended beyond individual teacher readiness:

"We face a major challenge in integrating technology with religious education. Some teachers are not yet ready to adopt this technology to its fullest potential. We are also concerned that too much reliance on technology may reduce social interaction and character building among students."

Informant L. added a resource dimension to this picture:

"Although technology can provide convenience, the limitations of our devices and networks are a major obstacle. Many teachers want to make the most of technology, but the existing facilities are not yet adequate to support the optimal use of AI in the classroom."

Taken together, these accounts reveal that the barriers to effective AI integration at SD Negeri 019 Bengalon are not primarily attitudinal — teachers are broadly willing to adopt technology — but structural: insufficient devices, unreliable network connectivity, and the absence of institutional frameworks that explicitly address the relationship between technological practice and Islamic educational values. Without policy-level guidance on what constitutes appropriate AI use within an Islamic educational context, individual teachers are left to develop their own solutions, producing inconsistency and placing an unsustainable burden on frontline educators

2. Discussion

The findings of this study offer several insights that extend and nuance the existing literature on technology integration in Islamic education. This discussion interprets those findings in relation to relevant theoretical frameworks and prior empirical work, identifies points of convergence and divergence with existing scholarship, and articulates the specific contribution this study makes to the field.

a. AI as an Instrumental, Not Authoritative, Pedagogical Tool

A central finding of this study is that teachers at SD Negeri 019 Bengalon have collectively constructed AI as an instrument rather than an authority in the learning process — a distinction that has significant theoretical implications. This finding is consistent with Manan's (2023) argument that technology in Islamic education should enrich rather than replace human interaction, and with Dalimunthe's (2023) assertion that technology must serve as a means for strengthening students' moral and spiritual character. However, this study moves beyond these normative positions by demonstrating empirically how this instrumental framing is enacted in practice: through content curation, deliberate time allocation, and the explicit verbal reinforcement of technology's subordinate role in every lesson.

This finding also resonates with global scholarship on technology adoption in education. Selwyn (2019) has argued that the 'promise' of educational

technology is frequently overstated, and that critical engagement with its limitations is a marker of professional maturity in teachers. The teachers in this study displayed precisely this critical posture – embracing AI's affordances while actively resisting its tendency to displace the relational and values-centred dimensions of teaching. In this respect, the findings from an Indonesian Islamic primary school context contribute empirically to a broader international conversation about the conditions under which technology adoption remains educationally meaningful.

b. The Reason-Faith-Data Triad: A Practice-Based Model

The most distinctive contribution of this study lies in its documentation of how the three epistemic pillars of AI-integrated Islamic education – reason (*aql*), faith (*iman*), and data – function not as competing priorities but as an integrated, mutually constitutive triad in actual classroom practice. Prior theoretical work by Ikhwan (2024) and Mumtazah et al. (2025) has argued for the integration of reason and faith in contemporary Islamic education, but these accounts remain largely at the level of curriculum philosophy. This study provides practice-level evidence of how that integration operates when a third element – AI-generated data – is introduced into the pedagogical equation.

The synthesis that emerges from the data is as follows. Reason (*aql*) functions as the critical instrument through which teachers and students evaluate AI outputs: data generated by platforms is neither accepted nor rejected automatically, but subjected to rational scrutiny in light of learning objectives and religious principles. Faith (*iman*) functions as the normative filter that determines which AI affordances are appropriate and which are to be bounded or set aside – it provides the evaluative criteria that reason alone cannot supply. Data, in turn, functions as a pedagogical resource that enriches the learning experience when it passes through the filter of faith and the scrutiny of reason. This triadic model constitutes a novel analytical contribution that prior literature has not articulated in empirically grounded terms.

This synthesis also speaks to the constructivist theoretical tradition. Vygotsky's emphasis on social interaction as the engine of learning (Tamrin et al., 2011) is reflected in the teachers' insistence that technology cannot substitute for teacher-student dialogue, particularly in the formation of moral and spiritual understanding. AI can scaffold cognitive tasks, but the zone of proximal development for character formation (*tarbiyah*) requires the presence of a human

moral guide – a role that the teachers in this study consciously and deliberately occupied alongside their use of AI platforms.

c. Structural Barriers and Policy Implications

The identification of training, infrastructure, and policy as interlocking barriers is consistent with findings in the broader educational technology literature (Hartanto et al., 2022; Santoso, 2025; Nashrullah et al., 2025). However, this study adds a dimension that existing research has not addressed: the barriers are not only technical but epistemological. Teachers do not merely lack the skills to use AI tools; they lack institutional frameworks that articulate how those tools should relate to Islamic educational values. This is a policy gap that technical training alone cannot bridge.

This finding diverges partially from Holmes et al. (2019), who argue that AI in education primarily faces barriers of data quality, algorithmic bias, and teacher digital literacy. While digital literacy is indeed a concern at SD Negeri 019 Bengalon, the more profound barrier identified in this study is the absence of a values-anchored policy framework – a gap that is specific to Islamic educational contexts and has not been addressed in the international AI-in-education literature, which remains largely secular in its framing (Zawacki-Richter et al., 2019; UNESCO, 2021). This constitutes a specific contribution of this study to that international literature: it demonstrates that the ethical challenges of AI adoption in education are not generic but context-specific, and that Islamic educational contexts require their own policy frameworks that embed the reason–faith–data triad at the institutional level.

d. Limitations

This study is subject to several limitations. The single-site design means that findings reflect the specific institutional culture, resource context, and teacher professional community of SD Negeri 019 Bengalon; they cannot be assumed to generalise to Islamic primary schools in other regions or with different resource profiles. The small participant sample ($n = 4$), while appropriate for an in-depth qualitative case study, limits the breadth of perspectives captured. Future research employing multi-site comparative designs, larger purposive samples, or mixed-method approaches incorporating quantitative measures of student outcomes would substantially strengthen the evidentiary base for the practice-based model proposed here.

D. Conclusion

This study set out to explore how teachers at SD Negeri 019 Bengalon adopt AI-based technology while sustaining Islamic educational values grounded in reason and faith. The findings demonstrate that effective integration is possible and is, in fact, already being practised when teachers maintain a principled distinction between AI as an instrument and Islamic values as the normative foundation of the educational process. Three key mechanisms sustain this balance in practice: deliberate content curation, explicit time-bounded technology use anchored in Quranic guidance, and consistent verbal reinforcement of the complementary roles of reason, faith, and data in the learning process. Together, these mechanisms constitute a practice-based model of the reason–faith–data triad that extends existing theoretical accounts of Islamic education in the digital era.

For this model to be adopted more broadly and consistently, three conditions must be met. First, teacher professional development must expand beyond basic digital literacy to encompass pedagogical competence in values-anchored AI integration. Second, educational institutions and policymakers must develop explicit frameworks that articulate the appropriate role of AI within Islamic educational contexts frameworks that embed the reason–faith–data triad at the curriculum and policy level, not only at the level of individual teacher discretion. Third, infrastructure investment must be coupled with institutional guidance so that schools are equipped not only with the tools to use AI, but with the values-anchored principles needed to use it wisely. Future research using multi-site comparative designs and mixed methods would further develop and validate the practice-based model proposed here.

References

- Alfi, A. M., Febriasari, A., & Azka, J. N. (2023). Transformasi pendidikan agama Islam melalui teknologi. *Religion: Jurnal Agama, Sosial, dan Budaya*, 2(4), 511–522.
- Aprillia, M. P., & Iryanti, S. S. (2024). Revitalisasi pendidikan Islam di era digital: Membangun keseimbangan antara tradisi dan inovasi. *AL-MUADDIB: Jurnal Kajian Ilmu Kependidikan*, 6(1), 25–39.
- Arisanti, I., Rasmita, R., Kasim, M., Mardikawati, B., & Murthada, M. (2024). Peran aplikasi artificial intelligence (AI) dalam mengembangkan dan meningkatkan kompetensi profesional dan kreativitas pendidik di era Cybernetics 4.0. *Innovative: Journal of Social Science Research*, 4(1), 5195–5205.

- Assyakurrohim, D., Ikhrum, D., Sirodj, R. A., & Afgani, M. W. (2022). Metode studi kasus dalam penelitian kualitatif. *Jurnal Pendidikan Sains dan Komputer*, 3(01), 1–9. <https://doi.org/10.47709/jpsk.v3i01.1951>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.
- Dalimunthe, D. S. (2023). Transformasi pendidikan agama Islam: Memperkuat nilai-nilai spiritual, etika, dan pemahaman keislaman dalam konteks modern. *Al-Murabbi: Jurnal Pendidikan Islam*, 1(1), 75–96.
- Hartanto, C. F. B., Octavianus, S., & Paduppai, A. M. (2022). Kesiapan sumber daya manusia pendidikan dalam difusi inovasi teknologi informasi di lembaga pendidikan. *Prosiding Industrial Research Workshop and National Seminar*, 13(01), 1412–1418.
- Hasmiza, H. (2025). Model kurikulum pendidikan Islam di era digital: Mengoptimalkan teknologi untuk pembelajaran yang inovatif. *Research and Development Journal of Education*, 11(1), 164–177.
- Herawati, A., Sinta, P. D., Marati, S. N., & Sari, H. P. (2025). Peran pendidikan Islam dalam membangun karakter generasi muda di tengah arus globalisasi. *IHSAN: Jurnal Pendidikan Islam*, 3(2), 370–380.
- Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.
- Ikhwan, A. (2024). Mengintegrasikan wahyu dan akal dalam pendidikan Islam kontemporer. *Chalim Journal of Teaching and Learning*, 4(2), 128–140.
- Ilfi, R., & Manaf, S. (2024). Kecerdasan buatan dan kaitannya dalam membentuk nilai dan karakter dalam pendidikan. *ISTIGHNA: Jurnal Pendidikan dan Pemikiran Islam*, 7(1).
- Kambali, K., Ayunina, I., & Mujani, A. (2019). Tujuan pendidikan Islam dalam membangun karakter siswa di era digital (Studi analisis pemikiran pendidikan Islam Abuddin Nata). *Risâlah: Jurnal Pendidikan dan Studi Islam*, 5(2), 1–19.
- Kasmila, A., Hadiati, E., Rizqi, D. I., Septuri, S., & Fauzan, A. (2025). Evaluasi kurikulum dan pembelajaran pendidikan agama Islam di era digital: Perspektif pendidikan Islam. *Paedagogie*, 20(2), 301–310.

- Manan, A. (2023). Pendidikan Islam dan perkembangan teknologi: Menggagas harmoni dalam era digital. *SCHOLASTICA: Jurnal Pendidikan dan Kebudayaan*, 5(1), 56–73.
- Mumtazah, M. N., Rohmah, N. R. N., Ulya, D. Z., & Ibrahim, R. I. (2025). Hakekat tujuan pendidikan Islam dalam perspektif integrasi sains dan pendidikan modern. *Nawasena: Journal of Mathematics, Science and Technology Education*, 1(03), 11–23.
- Nashrullah, M., Rahman, S., Majid, A., & Hariyati, N. (2025). Transformasi digital dalam pendidikan Indonesia: Analisis kebijakan dan implikasinya terhadap kualitas pembelajaran. *Mudir: Jurnal Manajemen Pendidikan*, 7(1), 52–59.
- Peliza, R. (2024). Penerapan teknologi artificial intelligence (AI) terhadap peningkatan efektivitas pembelajaran mahasiswa. *Prosiding Fakultas Ushuluddin Adab dan Dakwah*, 2(1), 82–95.
- Ridwan, M., & Maryati, S. (2024). Dari tradisi ke masa depan: Tantangan pendidikan Islam dalam masyarakat kontemporer. *Dirasah: Jurnal Studi Ilmu dan Manajemen Pendidikan Islam*, 7(2), 630–641.
- Rochim, A. A. (2024). Kecerdasan buatan: Risiko, tantangan dan penggunaan bijak pada dunia pendidikan. *Antroposen: Journal of Social Studies and Humaniora*, 3(1), 13–25.
- Rohman, T., Ilyasin, M., & Muadin, A. (2024). Kontribusi Islam terhadap perkembangan pendidikan Islam dalam era Industri 4.0. *Journal of Instructional and Development Researches*, 4(6), 486–498.
- Rosyidah, A., Annisa, D., & Bashith, A. (2025). Model evaluasi kompetensi spiritual digital peserta didik pada pembelajaran pendidikan agama Islam di era Industri 4.0. *TARLIM: Jurnal Pendidikan Agama Islam*, 8(2), 251–261.
- Santoso, H. (2025). Analisa kesiapan sekolah dalam pemanfaatan teknologi untuk pembelajaran. *Didaktika: Jurnal Kependidikan*, 14(1), 223–232.
- Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.
- Solihutaufa, E. (2025). *Filsafat pendidikan Islam: Integrasi ilmu dan iman di era digital*. Goresan Pena.
- Tamrin, M., Sirate, S. F., & Yusuf, M. (2011). Teori belajar Vygotsky dalam pembelajaran matematika. *Sigma: Suara Intelektual Gaya Matematika*, 3(1), 40–47.
- UNESCO. (2021). *Recommendation on the ethics of artificial intelligence*. United Nations Educational, Scientific and Cultural Organization. <https://unesdoc.unesco.org/ark:/48223/pf0000381137>

- Widodo, Y. B., Sibuea, S., & Narji, M. (2024). Kecerdasan buatan dalam pendidikan: Meningkatkan pembelajaran personalisasi. *Jurnal Teknologi Informatika dan Komputer*, 10(2), 602–615.
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications.
- Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? *International Journal of Educational Technology in Higher Education*, 16(1), 39. <https://doi.org/10.1186/s41239-019-0171-0>

This page is intentionally left blank