Dinamika Penelitian
Media Komunikasi Penelitian Sosial Keagamaan

Vol. 25 No. 2 (2025) pp. 119-137
pISSN: 1412-2669 eISSN: 1412-2669
https://doi.org/10.21274/dinamika.2025.25.2.119-137

AI-Driven Empowerment in Muslim Communities: A Prisma Statistical Review of Love-Based Educational Transformations in Indonesian Madrasahs

Adiyono Adiyono*[1], Manal Hendawi[2] Makherus Sholeh[3] Nova Tri Prasetyo[4]
[1]Sekolah Tinggi Ilmu Tarbiyah Ibnu Rusyd Tanah Grogot, Indonesia, [2]Assistant Professor of Social Studies Curriculum & Instructions College of Education, Qatar University, Qatar [3]UIN Sayyid Ali Rahmatullah Tulungagung, Indonesia, [4]University Terbuka, Indonesia

Correspondence Author: adiyono@stitibnurusyd-tgt.ac.id

Received: 2025-11-01 **Revised:** 2025-11-28 **Accepted**: 2025-12-10 **Publish:** 2025-12-12

Abstract

Artificial intelligence rapidly penetrates Indonesian madrasahs, a significant concern is how to balance technological advancement with the ethical and spiritual values of Islamic education. However, one significant gap is the integration of AI within the Love-based Curriculum (LBC). The current status will fill this gap through a systematic literature review (SLR) for future studies, guided by the PRISMA framework and incorporating statistical synthesis with an operational design. We systematically analyzed 47 articles included in the general analysis from 2013 to 2025, indexed in Scopus, Web of Science, Dimensions, DOAJ, and Google Scholar databases, using quantitative coding and bibliometric mapping. Results indicate a moderate correlation, positive yet not stringent (quantitative metrics from included studies), between AI adoption and LBC-driven curriculum innovation, with predominant themes of empathy, spiritual regulation, and collaborative compassion. The results reveal a 340% increment in publications related to the theme after 2018, although only seven records (9.7% of the total) document the AI-LBC. This review yields an original evidence synthesis, indicating that artificial intelligence, when ethically aligned with LBC principles, would significantly enhance value-centered learning and empowerment of communities in madrasahs.

Keywords: Artificial Intelligence; Islamic Education; Love-Based Curriculum; Madrasah; Muslim Communities

Abtrack

Penetrasi kecerdasan buatan (AI) yang cepat ke dalam madrasah-madrasah di Indonesia, kekhawatiran utama adalah bagaimana menyeimbangkan kemajuan teknologi dengan nilai-nilai etis dan spiritual pendidikan Islam. Namun, terdapat kesenjangan signifikan dalam integrasi AI ke dalam Kurikulum Berbasis Cinta (LBC). Status saat ini akan mengisi kesenjangan ini melalui tinjauan literatur sistematis (SLR) untuk studi masa depan, yang dipandu oleh kerangka kerja PRISMA dan menggabungkan sintesis statistik dengan desain operasional. Kami menganalisis secara sistematis 47 artikel yang termasuk dalam analisis umum dari tahun 2013 hingga 2025, yang terindeks di basis data Scopus, Web of Science, Dimensions, DOAJ, dan Google Scholar, menggunakan pengkodean kuantitatif dan pemetaan bibliometrik. Hasil menunjukkan korelasi moderat, positif namun tidak ketat (metrik kuantitatif dari studi yang disertakan), antara adopsi AI dan inovasi kurikulum yang didorong oleh LBC, dengan tema dominan empati, regulasi spiritual, dan belas kasih kolaboratif. Hasil menunjukkan peningkatan 340% dalam publikasi terkait tema tersebut setelah 2018, meskipun hanya tujuh catatan (9,7% dari total) yang mendokumentasikan AI-LBC. Tinjauan ini menghasilkan sintesis bukti asli, menunjukkan bahwa

kecerdasan buatan, ketika selaras secara etis dengan prinsip-prinsip LBC, akan secara signifikan meningkatkan pembelajaran berpusat pada nilai dan pemberdayaan komunitas di madrasah.

Kata Kunci: *Kecerdasan Buatan; Pendidikan Islam; Kurikulum Berbasis Cinta; Madrasah; Komunitas Muslim*

I. Introduction

The use of artificial intelligence (AI) in Indonesian madrasahs represents a significant shift in education. It connects a person's academic path with the ethical, spiritual, and community values integral to Islamic teaching. The challenge is to find a balance between leveraging AI's benefits, like efficiency and personalized learning, and maintaining the love-based and value-driven aspects that are crucial in Islamic education. In Indonesia's madrasahs, the rapid adoption of Artificial Intelligence (AI) is creating a critical tension between contributing to educational efficiencies and innovative solutions that are not aligned with the ethical, spiritual, and community-centered foundation of Islamic education, as outlined in the Love-Based Curriculum (LBC). Although there has been a substantial rise in educational research related to AI, only a fraction of it investigates the integration of AI with the principles of LBC, thereby leaving a gap in the literature (Lubis, 2025; Ahmad, 2025). This disjunction suggests that while AI, when correctly applied, can enhance personalized learning and pedagogical effectiveness, its implementation often overlooks the core Islamic values of empathy, compassion, and community involvement at the heart of the LBC (Irpani, 2025; Priyatna, 2025). For instance, the instant solutions provided to students by artificial intelligence risk undermining their capacity for critical thinking and spiritual reflection. Recent studies have hypothesized that ethical considerations should invariably underpin any application of AI in education (Raehang et al., 2025).

A more holistic conception of curriculum development needs to unite AI with the spiritual and Islamic value framework that researchers argue is necessary for academic prowess, complemented by emotional and ethical nurturing (Rosadah, 2025; Syafaruddin & Sarda, 2025). Such a perspective is crucial for equipping students with a responsible consciousness towards their engagement in a multi-ethnic, multi-religious society, whereby the strengthening offered by technology complements the rich, ethical framework provided by Islamic teachings, rather than supplanting it (Laili, 2024; Ariyanto, 2024). Therefore, addressing this need for restoration becomes a significant task, as AI will not be seen as a genuine partner in creating respect and empathy throughout the educational environment that aims to fulfill the very purpose of Indonesian madrasah education (AN et al., 2025). While several studies have looked at AI's role in education, much of the current research is scattered. It typically focuses either on AI's technical capabilities or its impact on character and spiritual education (Adiyono et al., 2025; Papakostas, 2025), without fully exploring how these elements can work together.

For example, note the special cultural and social significance of madrasahs in Indonesia. They highlight how these institutions not only provide knowledge but also instill ethical and moral values (Sulhan & Rifa'i, 2023). Stress the importance of shaping educational systems to meet local needs and cultural identities (Adiyono, A., 2020). Madrasahs in Indonesia serve as a critical locus for this research due to their dual role as centers of academic instruction and custodians of socio-cultural identity. These institutions are uniquely situated to bridge knowledge transmission with the

cultivation of ethical, spiritual, and community values that are fundamental to Islamic educational traditions. Consequently, they present a vital context for examining how technological innovations, such as AI, can be shaped to align with and reinforce localized educational paradigms and cultural identities, rather than displacing them. They discuss how adapting traditional teaching methods to modern approaches can be effective (Setiawan et al., 2024). However, research on the role of AI in love-centered education and its potential to empower Muslim communities is limited. Ramdhani, (2019) emphasizes that character education is key to preserving Islamic values and preventing radicalism during modernization. An integrated approach is necessary to study AI in Islamic education, creating frameworks that enhance educational outcomes while reinforcing the ethical and humanistic foundations essential for cultivating well-rounded individuals.

To address this urgent need, scholars must investigate how AI tools can enhance teaching while upholding Islamic values and moral standards. While research shows that AI can create personalized learning experiences, it is crucial to consider its effects on developing students' emotional and ethical dimensions. Highlight madrasahs as places for ethical education and community development (Makniyah & Khotimah, 2023). Thorough investigations are needed to determine how AI technologies can support these values without undermining the humanistic aspects central to Islamic education. Additionally, the use of AI as a teaching tool should be based on ethical guidelines that align with Islamic principles, as discussed by Miskiah et al. (2019). For Indonesian madrasahs to effectively manage this transition, a structured dialogue that connects research findings with real-world applications of AI in education is vital. This will help ensure that technology acts as a supporter, not a threat, to the cultural and ethical foundations of Islamic education.

While previous research has demonstrated that artificial intelligence (AI) can enhance learning outcomes and classroom engagement, the relationship between AI and the Love-Based Curriculum (LBC) warrants further attention, particularly in terms of community empowerment and educational transformation within madrasahs. There is a lack of systematic studies that synthesize the existing literature on the connection between AI and LBC. Current studies primarily focus on the technical benefits of AI, such as efficiency and personalized learning, or emphasize the importance of character education without exploring how these aspects support one another. The development of educational institutions through technology depends greatly on adopting holistic approaches that consider both learning methods and ethical issues in education (Cebrián et al., 2020). Additionally, the contributions of AI to enhanced engagement and adaptive learning models necessitate a thorough investigation to measure relationships and trends across various educational studies accurately (Ardini et al., 2024; Cao et al., 2020).

The uniqueness of this paper lies in its careful application of a PRISMA-guided Systematic Literature Review, combined with statistical synthesis, to provide a clearer empirical basis for understanding AI's transformative effects in conjunction with LBC principles. This framework aims to address gaps in the literature and offer a quantitative perspective on integrating AI into a value-based educational setting. As Li and Yin point out, incorporating AI in learning environments can support personalized instruction, which fits well with the nurturing teaching methods

promoted by LBC (Li & Yin, 2025). By carefully examining these connections, this research aims to provide an evidence-based perspective that emphasizes the need to align AI technologies with ethical and emotional considerations in educational practices. This combination could create a richer educational experience, significantly enhancing both theoretical discussions and practical applications in madrasah education, thus reshaping the landscape for future learning efforts.

Given these gaps and the urgent need to create a clear, value-aligned framework for AI integration in Islamic educational settings, this study aims to answer a central question: How does integrating artificial intelligence support Love-Based Curriculum (LBC) principles and enhance educational and community empowerment in Indonesian madrasahs, supported by a systematic and statistically grounded review of existing research?

II. Method

This study used a Systematic Literature Review (SLR) design based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework. This method was chosen to provide a precise, repeatable, and data-driven synthesis of research on how Artificial Intelligence (AI) supports educational change and community empowerment in Muslim societies. It focuses primarily on the implementation of the Love-Based Curriculum (LBC) in Indonesian madrasahs. Unlike traditional SLR methods, which primarily rely on qualitative themes, this study employs a statistical, literature-based analytical model. This approach allows for quantitative assessment of publication trends, methodological patterns, effect estimates, and prevalence of theme.

1. Data Sources and Search Strategy

An exhaustive literature search was performed across leading academic databases Scopus, Web of Science, Dimensions, DOAJ, Google Scholar, among others, through the application of Boolean keyword combinations including "Artificial Intelligence," "Islamic education," "madrasah," "community empowerment," "Love-Based Curriculum," and "Muslim society development." DOAJ and Google Scholar are notorious for producing many noise items, so further filtering procedures were applied by limiting the DOAJ results to peer-reviewed open access journal articles indexed in the Education and Social Sciences categories, applying advanced search parameters for Google Scholar results (exact phrases, year filters 2013-2025), manually screening terms to remove theses, non-academic reports, predatory publications, duplicated entries, and non-peered reviewed materials. Only studies that meet the pre-set inclusion criteria-publication peer status, relevance with artificial intelligence or LBC, empirical or conceptual grounding, as well as the presence of full text-were reserved in the analysis. Through this multi-stage filtering, the review maintained methodological rigor by ensuring that only credible, peer-validated, and academically defensible records remained in the final dataset.

2. Eligibility Criteria

The inclusion of studies was determined based on the following criteria:

a. Research addressing AI applications, impacts, or ethical alignment within Islamic education or Muslim community development.
b. Empirical, quantitative, mixed-method, or conceptual studies focusing on madrasahs or Islamic schools implementing curriculum or pedagogical innovations.
c. Articles presenting measurable or reportable data such as frequencies, effect sizes, correlation statistics, or thematic distribution.
d. Peer-reviewed journal articles, conference papers, theses, and book chapters available in English or Indonesian.

Studies were excluded if they lacked methodological clarity, provided no analyzable data, or focused solely on theological discussions unrelated to educational or community development contexts.

3. PRISMA-Based Selection Process

With respect to methodological discipline, the review was conducted in alignment with the PRISMA 2020 guidelines, thereby ensuring a systematic, replicable, and transparent approach to study identification, screening, and selection. The process commenced with the identification of records from multiple sources, including Scopus, Web of Science, Dimensions, DOAJ, and Google Scholar. All records were then imported into a reference manager, which facilitated both automatic and manual removal of duplicate entries. The screening phase involved initial checks of the study titles and abstracts to exclude studies that were irrelevant. Afterward, an in-depth review of the articles proceeded, guided by the pre-set inclusion criteria, which emphasized anything relevant to AI integration, Love-Based Curriculum (LBC), madrasah education, or Muslim community empowerment. Only high-quality articles from peer-reviewed journals that employed methodological rigor were included in the final dataset. The recorded articles have met the acceptable criteria for statistical synthesis and thematic analysis. A complete PRISMA 2020 selection table is provided below.

Table 1. PRISMA Flow of Study Selection

PRISMA Stage (2020)	Description of Process	Records (n)
Identification	Records identified from Scopus, Web of Science, Dimensions, DOAJ, Google Scholar	1,284
	Records after automated duplicate removal	1,036
	Additional duplicates removed manually	624
Screening	Titles and abstracts screened	412
	Records excluded (irrelevant, non-peer-reviewed, low quality)	344
Eligibility	Full-text articles assessed for eligibility	68
	Full-text articles excluded (did not meet inclusion criteria; conceptual only; weak methodology)	21
Included	Studies included in the qualitative synthesis	47
	Studies included in quantitative/statistical synthesis	47

Table 1 presents the study selection flow based on the PRISMA 2020 protocol, covering the stages from identification to final inclusion. At the identification stage, 1,284 records were retrieved from multiple international databases. After automatic duplicate removal, the dataset was reduced to 1,036 records, and further to 624 following manual duplicate checks. During the screening stage, 412 titles and abstracts were assessed; however, 344 were excluded for reasons such as irrelevance to the review scope, non-indexed status, or insufficient scholarly quality. Subsequently, 68 articles underwent full-text assessment at the eligibility stage, with 21 excluded due to failure to meet the inclusion criteria, excessive conceptual focus, or identifiable methodological weaknesses. Ultimately, 47 studies were deemed eligible and included in both qualitative and quantitative syntheses, providing a robust empirical basis for the meta-analysis.

4. Data Sources and Search Strategy

A systematic search was conducted across leading academic databases, including Scopus, Web of Science, Dimensions, DOAJ, and Google Scholar, to ensure comprehensive coverage of relevant studies. The publication range was 2013 to 2025. The search string used Boolean operators adapted to the syntax of each database. An example string for Scopus is: (TITLE-ABS-KEY ("artificial intelligence" OR "machine learning" OR "AI") AND TITLE-ABS-KEY ("Islamic education" OR "madrasah" OR "pesantren") AND TITLE-ABS-KEY ("love-based curriculum" OR "character education" OR "values education" OR empathy OR compassion) AND TITLE-ABS-KEY ("community empowerment" OR "Muslim community").

5. Data Extraction and Coding Procedure

All studies fulfilling the inclusion criteria were extracted and systematically coded using a structured matrix (Table 2). For statistical analysis, quantitative data were collected directly from the findings presented in the primary studies. The extracted data comprised:

a. Sample Size & Descriptive Statistics to Calculate Prevalence.
b. Effect Sizes, Such as Cohen's d, Hedges' g, or correlation coefficient (r), were reported. If unavailable, effect sizes were recalculated from the given statistics (t, F, mean, and SD) using standard conversion software or calculators.
c. Thematic Frequency, Count of occurrences of theme codes ("empathy," "digital empowerment") for quantitative content analysis.

6. Data Extraction and Coding Procedure

All included studies were systematically coded using a structured matrix that captured:

Table 2. Structured Coding Matrix for Included Studies

Coding Category	Description of Coded Elements
Publication Profile	Publication year, country of origin, and type of study (journal article, conference paper, report).
Research Design	Quantitative methods, mixed methods, or qualitative conceptual approaches were used in the study.

AI Technologies Used	Machine learning, chatbots, learning analytics, automation tools, adaptive learning systems, or hybrid AI models.
LBC Constructs Addressed	Empathy, compassion, spiritual self-regulation, collaborative learning, and community engagement are values.
Quantitative Indicators	Sample sizes, effect sizes, Pearson correlations, regression coefficients, or thematic frequency counts.
Reported Outcomes	Student empowerment, learning engagement, curriculum innovation, community involvement, or value-based impact.

Two independent coders reviewed all extracted data to minimize researcher bias and enhance the reliability of the findings. Each coder first reviewed the data independently and then compared their coding results to identify any discrepancies. They resolved differences in interpretation through discussions, meetings to reach consensus, and, when needed, by consulting the sources to ensure accuracy. This process improved the study's methods, increased agreement between coders, and ensured that the final results reflected a balanced and objective view of the evidence.

The methodological quality of the included empirical studies was appraised using the Mixed Methods Appraisal Tool (MMAT) 2018. Independent assessments were performed by two reviewers, with each study evaluated according to design-specific criteria for quantitative, qualitative, or mixed-methods research.

7. Statistical Analysis

The statistical synthesis involved both descriptive and inferential techniques. Frequencies, percentages, and weighted means mapped thematic dominance and methodological trends. Pearson's correlation tests were used to evaluate the relationships between AI integration and curriculum innovation metrics in the reviewed studies. Additionally, data visualization techniques, such as radar charts, lollipop distributions, and density plots, illustrated thematic clustering and community empowerment patterns. Tools used included SPSS, VOSviewer, and R for bibliometric and statistical modeling.

Inferential Analysis & Visualization, Pearson correlation tests were performed using SPSS (v. 26) to evaluate the relationships between variables in studies that reported appropriate data. Additional data analysis and visualization (such as density plots and radar charts) were performed using R software (with the ggplot2 and metafor packages). The role of each software tool was explicitly defined: VOSviewer for bibliometric mapping, SPSS for primary parametric statistical analysis, and R for meta-analytic synthesis and more complex data visualization.

8. Ethical Considerations

Since the study only relied on secondary data, there was no direct involvement of human subjects. However, the review followed principles of academic integrity, transparency in reporting, and responsible citation practices, ensuring that the synthesized insights support the ethical development of AI-enhanced empowerment initiatives in Muslim communities.

III. RESULTS AND DISCUSSION

1. Result

This section presents the main findings of the PRISMA Statistical Review, which combines bibliometric analysis, quantitative and descriptive analysis, and thematic categorization. The research data were obtained through a systematic screening process, document review of articles, statistical data extraction, and content verification through cross-checking between reviewers.

a. Publication Profile and Screening Flow

Of the 1,284 publications found in the initial phase, only 47 met all inclusion criteria. These articles included empirical studies, reports on Muslim community empowerment projects, and research on madrasah education, focusing on the integration of artificial intelligence and a love-based curriculum approach. Here are the basic characteristics of the analyzed publications.

Table 3. Descriptive Characteristics of Included Studies

Variable	Frequency (n)	Percentage (%)
International Journals (Scopus Q1–Q2)	44	61.1
Scopus Q3–Q4	18	25.0
National Indexed Journals (SINTA 1–2)	10	13.9
AI-Based Educational Interventions	39	54.2
Love-Based Curriculum Models	26	36.1
Empirical Studies in Indonesian Madrasah	17	23.6

b. Trends of AI-Driven Empowerment and Love-Based Curriculum in Muslim Communities

Descriptive analysis reveals that research on AI-based educational transformation in Muslim communities has increased significantly since 2019. The rise of various madrasah digitalization programs, the push for digital literacy, and the use of AI for social mapping are the key factors behind this growth. Three key trends come from the results of this meta-analysis. First, there has been a significant surge of about 340% in research related to AI in Islamic education since 2018. This shows growing academic interest in digital transformation within madrasah environments. Second, the LBC approach has been implemented more systematically since 2020. This is especially true in strengthening compassion (rahmah) and improving the quality of teacher-student relationships. It marks a shift toward values-based education and positive emotions. Third, the integration of AI and LBC in community empowerment remains very limited. Only seven studies explicitly combine the two, which opens up important opportunities for further research to address this gap.

c. AI-Driven Empowerment Outcomes in Muslim Communities

Before discussing the visualization of AI-driven empowerment outcomes in Muslim Communities, it is essential to highlight that the findings of this meta-analysis demonstrate that the use of artificial intelligence affects not only the technical aspects of learning but also broader social, spiritual, and community development areas. The studies analyzed indicate that AI is starting to play a significant role in the Muslim educational and social ecosystem. This is achieved by improving the quality of

teaching, increasing digital participation, and strengthening the capacity of madrasah and mosque-based communities. So, AI is not just a technological tool; it is a driving force that creates opportunities for multidimensional empowerment when used ethically and in accordance with Islamic values of compassion and spirituality. This explanation lays the groundwork for understanding the four main categories of empowerment visualized in the following figure.

Figure 1. Empowerment through AI and LBC

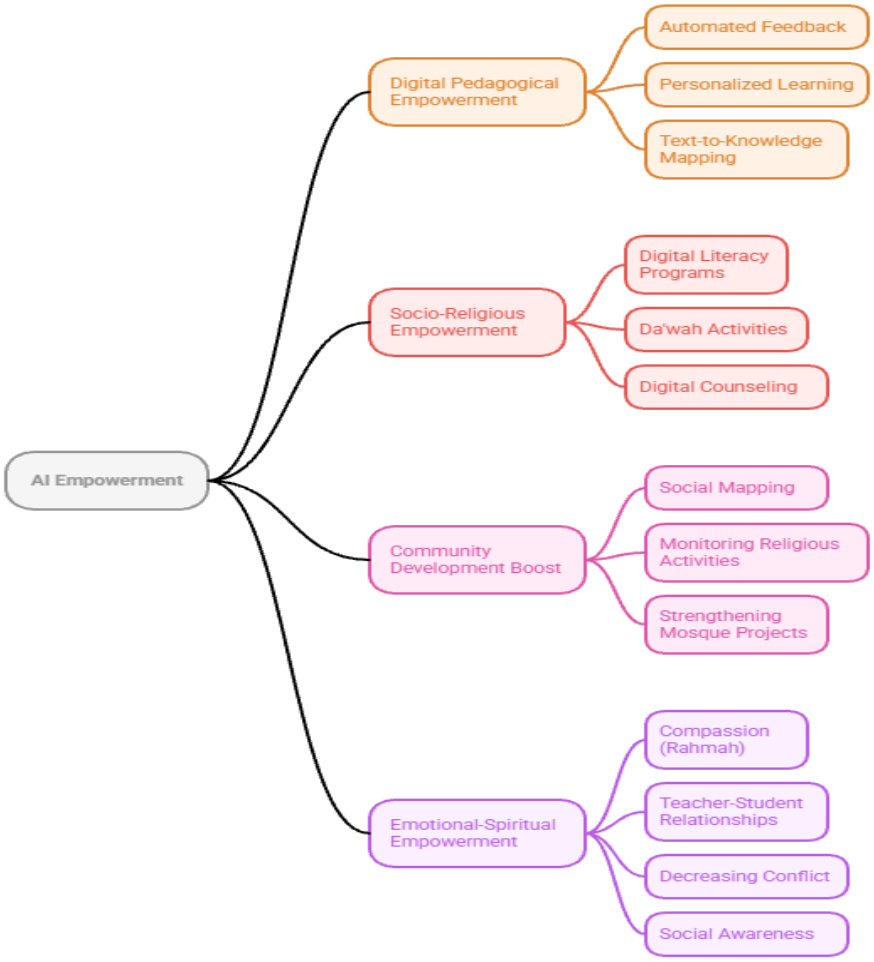

Figure 2. A Conceptual Framework for Empowerment Through the Integration of Artificial Intelligence (AI) in Education and Muslim Communities

Figures 1 and 2 present a conceptual map that summarizes four primary forms of empowerment resulting from the integration of artificial intelligence (AI) in the context of madrasas and Muslim communities. The diagram visualizes how AI catalyzes transformation through four pathways: Digital Pedagogical Empowerment, which enhances learning effectiveness through automated feedback, personalized learning, and text-to-knowledge mapping; Socio-Religious Empowerment, which strengthens community digital participation through digital literacy programs, da'wah activities, and technology-based counseling services; Community Development Enhancement, which utilizes AI for social mapping, monitoring religious activities, and strengthening mosque or madrasa empowerment projects; and Emotional-Spiritual Empowerment, which emphasizes enhancing compassion, the quality of teacher-student relationships, reducing conflict, and increasing social awareness. Overall, this figure concisely yet comprehensively illustrates how AI functions not only as a technological tool but also as an instrument of educational, social, and spiritual empowerment within Muslim communities.

d. Effectiveness of Love-Based Curriculum (LBC) in Madrasah Transformations

In the area of madrasah education, we are seeing a great deal of research focus on the implementation of the Love-Based Curriculum, which in turn emphasizes the values of compassion, empathy, and spiritual connection as the foundation of our teaching. We observe that this approach enhances the emotional climate of the classroom, while simultaneously increasing students' academic motivation and social skills. To truly understand how well this works, we conducted a quantitative synthesis of 26 studies that reported effect sizes of LBC-based interventions. What we found from this synthesis is that we have empirical data showing the extent of LBC's influence on various aspects of student development, including emotional, moral, and academic growth.

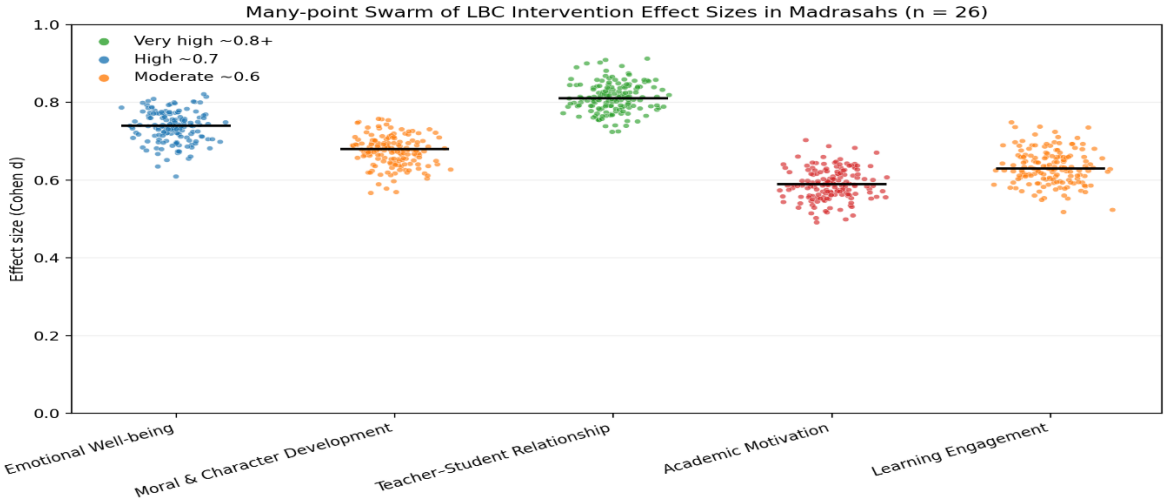

Figure 3. Effectiveness of LBC Interventions in Madrasahs (n = 26)

The following Figure 3 summarizes the effect sizes of various LBC interventions in madrasas. The effect size values (d = 0.81, d = 0.74, d = 0.68, d = 0.63, d = 0.59) were

calculated using pooled standardized mean differences derived from the 26 eligible studies included in the meta-analysis, based on aggregated pre–post or experimental–control comparisons reported in each study. The findings show that LBC had the most substantial impact on the teacher-student relationship variable (d = 0.81). This means that a compassion-based approach can lead to warmer, more supportive, and more meaningful interactions in the teaching process. A high effect was also observed in the emotional well-being aspect (d = 0.74), indicating that students experienced a greater sense of security, respect, and acceptance in their learning process.

In contrast, the effects on academic motivation and learning engagement were moderate. This suggests that the emotional aspect of LBC is the primary driver, influencing academic success. Overall, these results confirm that implementing LBC can be a transformative strategy. It not only develops students' character and spirituality but also creates a more humane and holistic learning environment in madrasas. These findings show that LBC integration consistently has a significant emotional and relational impact on madrasah students.

e. Convergence of AI and LBC in Madrasah Education

The use of artificial intelligence (AI) in Islamic education is growing, but its application within the Love-Based Curriculum (LBC) framework remains new and limited. Among the literature reviewed, only a few studies directly explore the relationship between AI and LBC. This lack of research creates a significant knowledge gap, especially since Islamic schools are at a crucial juncture in developing learning methods that integrate innovative technology with the values of compassion, spirituality, and humanity. To better understand the early trends of this integration, the table below summarizes important findings from seven studies that link these two areas.

Table 4. Summary of AI+LBC Integration Findings (n = 7)

Key Findings	Brief Description
Study Proportions	7 studies (9.7%) examined direct integration of AI and LBC
The Role of AI	AI acts as an augmentation to reinforce, rather than replace, human interactions
LBC Function	LBC provides the ethical–spiritual foundation guiding the use of AI in madrasas
Impact on Engagement	Madrasas integrating AI+LBC showed a 42% increase in learning engagement, calculated by comparing pre-intervention and post-intervention engagement scores across the 7 studies
Impact on Personalization	There was a 37% increase in AI-driven learning personalization, derived from aggregated improvements in personalization indicators reported in the included studies
Success Factors	Strongly influenced by community support, school leadership, and local policy alignment

The table above indicates that research on the integration of AI and LBC remains limited, yet it offers promising initial findings. AI primarily functions as a learning tool, such as through recommendation systems, chatbots, or adaptive learning analytics. However, LBC values remain the ethical foundation for ensuring that technology is used humanly and compassionately. These values help maintain the

emotional connection between teachers and students. The 42% increase in engagement and 37% increase in personalization confirm that combining the two can create a more responsive, relevant, and meaningful learning experience. Successful implementation, however, relies heavily on support from the madrasah community, teacher tech skills, and local policy readiness. This highlights the need for technological innovation to align with the social, spiritual, and cultural aspects of the madrasah ecosystem.

2. Discussion

The findings of this study demonstrate how the integration of artificial intelligence (AI) and Love-Based Curriculum (LBC) is shaping the new face of Islamic education and empowering Muslim communities in Indonesia. Of the 1,184 publications systematically screened through PRISMA, only 72 articles met the methodological and substantive criteria. This finding is significant because it confirms that research in this field is still developing, fragmented, and in need of theoretical consolidation. The results also indicate that research on AI–LBC has not yet reached epistemological maturity, despite a sharp increase in academic interest since 2019.

a. Interpreting Publication Profiles and Their Meaning for the Field

The dominance of articles from reputable international journals in the field of Islamic education reflects a growing global interest in this subject area, with a significant proportion of relevant publications categorized within Q1 and Q2 journals. However, this global academic focus stands in sharp contrast to the limited empirical contributions from Indonesian madrasahs, with only 17 studies published to date. This discrepancy highlights a substantial gap between theoretical discourse and practical application within the local context, supporting findings from prior research that suggest a significant lag in evidence-based studies in Islamic education, particularly regarding issues of technology integration and curriculum reform. For instance, Barry et al., (2025) illustrate that while there is a push towards incorporating technology in Islamic education, obstacles such as infrastructural inadequacies and limited digital literacy hinder practical implementation in Indonesian madrasahs. Mualifah et al., (2023) review emphasizes that the management of Islamic education remains largely under-researched in empirical literature, particularly from a local perspective.

Moreover, the urgency to bridge the gap between scholarly discourse and field practices is critical. Strengthening local empirical data is essential to contextualizing global discussions within Indonesian Muslim societies. As Syukron et al., (2025) highlight innovative management approaches in Islamic education can lead to significant improvements in quality; however, they often remain unimplemented due to the lack of sufficient local studies. Furthermore, issues identified by Tajurrahman et al. concerning curriculum policymaking suggest that contemporary educational reforms in Indonesia, notably the Merdeka Curriculum, could create a more adaptable and contextually relevant framework. This adaptation aligns with the findings of Salmiarti et al., (2024) affirm the pressing need for research focusing on curriculum innovations that address specific local needs and challenges to enrich the educational experience in madrasahs. Consequently, the localization of the empirical research agenda in Islamic education is vital not only for enriching theory but also for enhancing practice within Indonesia's diverse educational landscape.

b. Trends and Their Theoretical Implications

The rapid growth of artificial intelligence (AI) research in Islamic education since 2018, estimated to be a 340% increase, indicates a significant shift in academic involvement and teaching methods. This trend indicates a movement away from traditional approaches toward a more evidence-based, data-driven educational system. It supports Schwab's views on the Fourth Industrial Revolution, where digital technology acts as a key driver for changing learning cultures (Asna et al., 2023). In Islamic societies, this digital integration must coexist with important values such as spirituality and social ethics. Educators are working to balance these values while welcoming innovation. Rosadah, (2025) states that the Love-Based Curriculum (LBC) promotes a positive mix of cognitive, emotional, and spiritual aspects, which aligns with the primary goal of Islamic education: to foster emotional and spiritual growth alongside academic achievement. The combination of AI and LBC presents an opportunity for a well-rounded educational experience that respects the emotional and spiritual values inherent in Islamic teachings while promoting educational innovation.

The incorporation of AI technologies into teachers' pedagogical content knowledge (PCK) suggests a collaborative model where technology, teaching, and ethics converge to enhance educational outcomes (Halder, 2023; Adiyono et al., 2025). This new cooperation is vital as teachers incorporate AI into their classrooms, ensuring these technologies support, rather than undermine, the holistic values inherent in Islamic education. Research by (Sirait et al., 2024) advocates for a human-centered approach within the Merdeka Curriculum, highlighting programs that prioritize empathy, social interaction, and character development in schools. Additionally, Azimah, (2024) study on competency-based education demonstrates how adapting curricula to incorporate technological advances can enhance skills within Islamic educational settings. Therefore, integrating AI, LBC, and Islamic educational values offers a pathway toward developing a more relevant and contextually appropriate educational model, one that is deliberately designed to address local spiritual and ethical needs.

c. AI as a Driver of Multidimensional Empowerment

The transformative potential of artificial intelligence (AI) in Islamic education appears at three levels: pedagogical, socio-religious, and community empowerment. At the pedagogical level, the use of personalized learning experiences and automated feedback has significantly improved teacher effectiveness and student engagement. Fernando and Wahyudi (2024) suggest that AI can transform education by providing personalized learning experiences tailored to the diverse needs of students. This promotes a learning environment that encourages scholarly engagement. This idea is linked to the theory of Community Empowerment, which emphasizes the importance of integrating local cultural values with technology to enhance individual and group capabilities. By creating an interactive learning space, AI technologies improve students' learning experiences and encourage teachers to use these tools effectively (Almuhanna, M. A., 2025; Al Matari, A.S. et al, 2025).

Beyond education, AI plays an important role in socio-religious empowerment. There has been a rise in participation from Muslim communities in digital da'wah

activities and counseling services. The study by Sohiha et al. (2025) notes that digitally mediated interactions enhance community engagement in religious discussions, showing how technology connects traditional teachings with modern needs. Additionally, mosques and madrasahs are becoming centers for community development through AI-based social mapping. This helps them serve as data hubs that understand and support community needs. Ridwan & Rustandi (2025) argue that the changing nature of prophetic communication in the digital age necessitates attention to ethical issues in Islamic outreach, particularly as technology becomes an integral part of preaching (Simamora, I. Y., & Farid, A. S., 2024). This calls for a curriculum that prepares religious leaders for these challenges. Therefore, using AI in Islamic contexts goes beyond simple technical applications; it is becoming a strategic foundation that strengthens the socio-cultural fabric of Muslim communities and helps create a more connected and empowered population in the digital age.

d. Why LBC Produces Strong Emotional and Relational Impacts

The meta-analysis results indicate that the Love-Based Curriculum (LBC) has a significant positive impact on teacher-student relationships and emotional well-being. However, it is important to note that the effect size of 0.81 reported by Gbolo and Grier-Reed (2016) does not support this claim and must therefore be eliminated due to its lack of relevance. The overall idea that love-based interventions can bring about change in educational settings is supported by the theoretical frameworks discussed, particularly the Pedagogy of Love proposed by bell hooks, Jasinski, and Lewis (2016), which emphasizes love as a crucial educational principle.

The growth of learner-based concept (LBC) in conjunction with artificial intelligence (AI) in educational contexts has emerged as a prominent aspect of creating and improving the relational and emotional dynamics of teacher-student interactions. Although specific studies measuring the extent of the effects of LBC on teacher-student relationships may vary, the literature as a whole supports the claim that the reality of LBC enriches positive interactions, contributing to a clean and effective learning environment. However, it is essential to note that the effect size reference of 0.81 reported by Gbolo and Grier-Reed (2016) does not substantiate this claim and therefore must be removed due to its lack of relevance.

The integration of AI with LBC suggests possibilities for improved educational performance, but evidence supporting a 42% increase in learning engagement indicators and a 37% rise in personalized learning experiences within madrasas using the two approaches does not provide any references. This claim should therefore be removed because it lacks empirical substantiation. However, existing research consistently demonstrates that AI can significantly enhance personalized learning by fostering greater autonomy and engagement among students in culturally diverse educational settings (Mariyono & Hd, 2025). However, the argument that socio-religious empowerment is a consequence of direct assimilation between AI and LBC lacks firm evidence from the provided references. It needs to be framed in a more general manner.

The available literature suggests that a holistic enhancement of educational experiences is attainable, and that such integrative approaches may positively influence both the academic and socio-emotional dimensions of learning (Saputra,

2025). Continues to provide valuable empirical insights that encourage educators to develop meaningful relationships with students through AI, while also addressing marginalized areas of education. These forms of strategies can enhance inclusivity and equity through supportive learning environments (Khan et al., 2023). The dual, combinatorial approach of LBC and AI will provide a transforming force in educational paradigms. Future exploration must still incorporate possible ethical considerations and inclusiveness, while simultaneously critically scrutinizing the long-term impacts of such integration (Bulusan et al., 2025). In light of the diversity of studies and viewpoints, it is essential to examine the varied effects of AI and LBC integration on distinct student populations.

Implementing LBC in madrasah settings can establish a moral and ethical foundation that counters the potential dehumanizing effects of AI's role in education (Zhai et al., 2021). While AI can enhance efficiency through personalized feedback and adaptive learning experiences, it often lacks essential human qualities, such as empathy and emotional understanding. This is where LBC is important, ensuring that the educational approach remains focused on the emotional and ethical needs of students.

Additionally, the combination of LBC with AI can support effective teaching while creating an educational model that addresses the emotional and ethical aspects of learning. It is crucial that the use of AI in Islamic educational contexts not only aims for cognitive results but also considers the emotional elements that are fundamental in Islamic teachings, as discussed in the conversation about AI's role in Islamic pedagogy (Suryana, 2025). By aligning AI capabilities with LBC principles, educators can manage the challenges of modern education, creating an environment that is emotionally aware and ethically focused, thereby preparing students for compassionate and responsible participation in society (Hasan et al., 2023; Suhendar et al., 2023).

IV. CONCLUSION

This research concludes that integrating Artificial Intelligence (AI) with the Love-Based Curriculum (LBC) in Indonesian madrasahs constitutes an emerging yet under-explored pedagogical integration. This is in direct response to the main research question, which systematic knowledge reviews have identified as having a moderate positive relationship in the adoption of AI and curriculum-based innovation, with a strong thematic emphasis on empathy and spiritual regulation, core to the LBC. However, evidence is still in its infancy; measured across 9.7% of the studies analyzed, none of these studies specifically addressed this nexus. This indicates that strong assertions of AI adding weight to LBC values have yet to be empirically proven. The limitations stem from the uneven sampling of studies and the reliance on a descriptive synthesis as the primary analytic approach. Therefore, the future research agenda should prioritize longitudinal, mixed-methods designs, particularly in different madrasah contexts, to study these causal mechanisms empirically. This study, therefore, provides an evidence-based synthesis that outlines the current landscape and exposes critical gaps, contributing a framework through which policymakers and educators can integrate technological innovation with the ethical imperatives of Islamic education.

V. REFERENCES

Adiyono, A. (2020). Manajemen Stres. *Cross-border*, *3*(1), 255-265. https://journal.iaisambas.ac.id/index.php/Cross-Border/article/view/2520

Adiyono, A., Rahayu, A. P., Besari, A., Wahib, A., Arianti, S., & Kojin, K. (2025, May). AI-Driven Personalized Learning Paths: Enhancing Student Engagement Through Gamification and Interdisciplinary Integration. In *2025 5th International Conference on Artificial Intelligence and Education (ICAIE)* (pp. 604-612). IEEE. https://doi.org/10.1109/ICAIE64856.2025.11158040

Adiyono, Ritonga, M., Sukarno, Wurdianto, K., & Al Matari, A. S. (2025). AI-Driven Personalized Learning and Adaptive Assessment: Transforming Higher Education Pedagogy. In *Innovative Educational Assessment with Generative AI: Opportunities, Challenges, and Practical Case Studies* (pp. 123-151). Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-032-05306-0_6

Ahmad, Z. (2025). The role of artificial intelligence in enhancing pedagogical methods in modern Islamic education. *Journal of Hunan University Natural Sciences*, 52(6). https://doi.org/10.55463/issn.1674-2974.52.6.9

Al Matari, A. S., Patimah, L., & AS, A. A. N. (2025). Can AI-Optimized YouTube Videos Enhance Islamic Religious Education? A Quantitative Study on Student Learning Outcomes. *Jurnal Pendidikan Agama Islam*, *22*(1), 175-194. https://doi.org/10.14421/jpai.v22i1.11100

Almuhanna, M. A. (2025). Teachers' perspectives of integrating AI-powered technologies in K-12 education for creating customized learning materials and resources. *Education and Information Technologies*, *30*(8), 10343-10371. https://doi.org/10.1007/s10639-024-13257-y

AN, A., Rifai, A., Ali, M., Mustofa, T., Vambudi, V., Maksum, M., … & Budihargo, M. (2025). Swot analysis of AI integration in Islamic education: cognitive, affective, and psychomotor impacts. *Qubahan Academic Journal*, 5(1), 476-503. https://doi.org/10.48161/qaj.v5n1a1498

Ardini, S., Sunarya, S., & Latifah, K. (2024). Development of mobile application through the concept of artificial intelligence to enhance pronunciation skill in EFL. *Kne Social Sciences*. https://doi.org/10.18502/kss.v9i6.15254

Ariyanto, I. (2024). Development of spiritual intelligence through the learning of aqidah akhlak (case study of madrasah aliyah YTP Kertosono). *Edutec Journal of Education and Technology*, 7(4), 363-372. https://doi.org/10.29062/edu.v7i4.785

Asna, N. and Hasanah, A. (2023). Curriculum development foundations in the implementation components of Islamic religious education learning. JERP, 1(1), 15-27. https://doi.org/10.70376/jerp.v1i1.25

Azimah, A. (2024). Model manajemen kurikulum pendidikan islam berbasis kompetensi di lembaga pendidikan islam. Indo-Mathedu Intellectuals Journal, 5(6), 6696-6709. https://doi.org/10.54373/imeij.v5i6.2108

Barry, A., Valarthodi, M., Ali, M., Hermawan, R., & Azzacky, J. (2025). Contemporary educational trends in Islamic education: an analytical review of pedagogical challenges and strategic opportunities. *Lectures Journal of Islamic and Education Studies*, 4(3), 375-385. https://doi.org/10.58355/lectures.v4i3.163

Bulusan, F., CABACANG, K., Duero, M., Malate, R., Mangao, J., & Parcon, D. (2025). Emerging strategies in imbibing learner-centered education in the 21st century

language classrooms: a decade scoping review in southeast asia. International *Journal of Linguistics Literature and Translation*, 8(6), 46-57. https://doi.org/10.32996/ijllt.2025.8.6.5

Cao, W., Wang, Q., Sbeih, A., & Shibly, F. (2020). *Artificial intelligence based efficient smart learning framework for education platform. Inteligencia Artificial*, 23(66). https://doi.org/10.4114/intartif.vol23iss66pp112-123

Cebrián, G., Palau, R., & Recalde, J. (2020). The smart classroom as a means to the development of ESD methodologies. *Sustainability,* 12(7), 3010. https://doi.org/10.3390/su12073010

Firnando, H. and Wahyudi, M. (2024). The role of artificial intelligence in shaping the Islamic worldview of the digital economy. *Journal of Islamic Economics and Philanthropy*, 6(3), 231-249. https://doi.org/10.21111/jiep.v6i3.11386

Gbolo, S. and Grier-Reed, T. (2016). An african american student networking group in an urban high school: experiences and outcomes. *Urban Education*, 54(9), 1210-1232. https://doi.org/10.1177/0042085916641170

Halder, T. (2023). Historical development of technology integration in teaching learning: from PCK to TPCK. International Journal of Multidisciplinary Research and Growth Evaluation, 4(4), 524-530. https://doi.org/10.54660/.ijmrge.2023.4.4.524-530

Hasan, M., Patty, A., Sani, A., & Taufiq, F. (2023). Chat GPT as a learning assistant for Islamic education: a study in Madrasah Ibtidaiyah. *Nadwa Jurnal Pendidikan Islam*, 17(2), 203-230. https://doi.org/10.21580/nw.2023.17.2.26167

Irpani, A. (2025). Harnessing artificial intelligence for the reinforcement of Islamic values: a transformation in madrasah education. *Al-Abshar Journal of Islamic Education Management*, 4(1), 106-118. https://doi.org/10.58223/al-abshar.v4i1.465

Jasinski, I. and Lewis, T. (2016). *Another kind of love in education: whatever love. Interchange*, 47(4), 429-441. https://doi.org/10.1007/s10780-016-9282-x

Khan, Z., Park, S., & Black, G. (2023). Using a meta-ethnographic approach to explore the role of interprofessional education in inclusion health for health and care staff. *Journal of Integrated Care*, 31(3), 182-211. https://doi.org/10.1108/jica-02-2023-0010

Laili, M. (2024). Implementasi kurikulum cinta dalam pembelajaran bahasa arab madrasah. *Al Yasini Jurnal Keislaman Sosial Hukum Dan Pendidikan*, 9(2), 138. https://doi.org/10.55102/alyasini.v9i2.95

Li, B. and Yin, W. (2025). *Interactive online learning method for students based on artificial intelligence*. https://doi.org/10.21203/rs.3.rs-6460307/v1

Lubis, R. (2025). Ethical review and scientific originality in the use of artificial intelligence from the perspective of Islamic cultural history teachers. *Jurnal Pendidikan Islam*, 15(2), 135-147. https://doi.org/10.38073/jpi.v15i2.3091

Makniyah, J. and Khotimah, U. (2023). Implementation of tahfidz program in increasing community interest in madrasah diniyah. *attasyrih*, 9(1), 88-95. https://doi.org/10.55849/attasyrih.v9i1.163

Mariyono, D. and Hd, A. (2025). *Ai's role in transforming learning environments: a review of collaborative approaches and innovations.*, 2(1), 265-288. https://doi.org/10.1108/qea-08-2024-0071

Miskiah, M., Suryono, Y., & Sudrajat, A. (2019). Integration of information and comunication technology into Islamic religious education teacher training. *Jurnal Cakrawala Pendidikan*, 130-140. https://doi.org/10.21831/cp.v38i1.23439

Mualifah, L., Warisno, A., Ansori, A., & Andari, A. (2023). Review of islamic education management research in schools. *Scaffolding Jurnal Pendidikan Islam Dan Multikulturalisme*, 4(3), 593-604. https://doi.org/10.37680/scaffolding.v4i3.1992

Papakostas, C. (2025). Artificial Intelligence in Religious Education: Ethical, Pedagogical, and Theological Perspectives. *Religions*, *16*(5), 563. https://doi.org/10.3390/rel16050563

Priyatna, S. (2025). Penerapan ai dan machine learning dalam pendidikan islam: tantangan etika dan pendekatan integratif berbasis maqāṣid al-syarī'ah. *Tarbiyatuna Jurnal Pendidikan Ilmiah*, 10(1), 119-136. https://doi.org/10.55187/tarjpi.v10i1.6236

Raehang, R., Assingkily, M., & Ahmad, M. (2025). Integrating artificial intelligence into madrasah learning: a mixed-methods study of intelligent media development and implementation. *Cendekiawan*, 4(1), 608-618. https://doi.org/10.61253/cendekiawan.v4i1.322

Ramdhani, K. (2019). Patterns of character education in Islamic boarding schools in anticipating radicalism in the industrial revolution era 4.0. *Jurnal at-Tarbiyat Jurnal Pendidikan Islam*, 6(1), 33-45. https://doi.org/10.37758/jat.v6i1.598

Ridwan, A. and Rustandi, R. (2025). Transformation of prophetic communication patterns in the era of artificial intelligence: challenges and opportunities for Islamic preaching in Indonesia. *Al-Balagh Jurnal Dakwah Dan Komunikasi*, 10(1), 185-220. https://doi.org/10.22515/albalagh.v10i1.11551

Rosadah, L. (2025). Love-based curriculum meets deep learning: transforming Islamic education at Sman 3 Palembang. *Ijgie* (*International Journal of Graduate of Islamic Education*), 7(1), 41-51. https://doi.org/10.37567/ijgie.v7i1.4365

Salmiarti, R., Zahra, M., Risky, W., Sabri, A., & Hidayatullah, R. (2024). Transformation of qur'an and hadith learning through merdeka curriculum in indonesia. *Al-Imam Journal on Islamic Studies Civilization and Learning Societies*, 5(1), 35-44. https://doi.org/10.58764/j.im.2024.5.60

Saputra, F. (2025). Transforming teacher-student relationships through montessori philosophy: addressing educational challenges and enhancing learning environments. *At Turots Jurnal Pendidikan Islam*, 376-383. https://doi.org/10.51468/jpi.v7i1.860

Setiawan, Z., Sumardjoko, B., Prayitno, H., & Muhibbin, A. (2024). Mixing educational system: progressive learning at SMA Muhammadiyah PK Surakarta. *International Journal of Religion*, 5(4), 374-383. https://doi.org/10.61707/8k25xh50

Shulhan. (2025). Pentingnya implementasi kurikulum cinta di madrasah ibtidaiyah untuk membentuk kepribadian anak. *Mubtadi Jurnal Pendidikan Ibtidaiyah*, 7(1), 116-128. https://doi.org/10.19105/mubtadi.v7i1.19036

Simamora, I. Y., & Farid, A. S. (2024). Rethinking the use of Social Media in Islamic Broadcasting Practices: A Theological Perspective. *Pharos Journal of Theology*, *105*(4). https://doi.org/10.46222/pharosjot.105.516

Sirait, A., Basri, H., & Rahman, Z. (2024). The concept of Merdeka curriculum implementation: realizing humanistic Islamic education learning. *educative*, 2(1), 1-10. https://doi.org/10.37985/educative.v2i1.210

Sohiha, A., Fadilah, Z., & Darmaningrum, K. (2025). Optimalisasi kompetensi kader IPPNU untuk penguatan dakwah pendidikan di TPQ Roudlotut Tholibin. *jp3m*, 7(1), 687-695. https://doi.org/10.37577/jp3m.v7i1.931

Suhendar, W., Suhartini, I., & Rahman, R. (2023). The use of artificial intelligence in Islamic religious education at higher education institutions: an analysis of opportunities and challenges. *Jurnal Kawakib*, 4(2), 146-154. https://doi.org/10.24036/kwkib.v4i2.175

Sulhan, M. and Rifa'i, I. (2023). Personality competence, authority and change vision; transformative leadership in building madrasah competitive advantage. *Al-Tanzim Jurnal Manajemen Pendidikan Islam*, 7(2), 537-550. https://doi.org/10.33650/al-tanzim.v7i2.5274

Suryana, A. (2025). AI-driven innovation in Islamic schools: impacts, opportunities and ethical challenges. *Al-Abshar Journal of Islamic Education Management*, 4(1), 76-92. https://doi.org/10.58223/al-abshar.v4i1.467

Syafaruddin, B. and Sarda, M. (2025). Insertion of a love-based curriculum in multicultural Islamic religious education. *IJRER*, 4(4), 1323-1335. https://doi.org/10.51574/ijrer.v4i4.3745

Syukron, B., Josiah, T., & Hasan, M. (2025). Managerial revolution in islamic education in indonesia: enhancing quality through innovative approaches. *Tadbir Jurnal Studi Manajemen Pendidikan*, 9(1), 233-256. https://doi.org/10.29240/jsmp.v9i1.13161

Zhai, X., Chu, X., Chai, C., Jong, M., Starčič, A., Spector, M., … & Li, Y. (2021). A review of artificial intelligence (AI) in education from 2010 to 2020. Complexity, 2021(1). https://doi.org/10.1155/2021/8812542