



Implementing Amin Abdullah's integrated-interconnected epistemology model in education

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Abstract

This study aims to analyze the implementation of Amin Abdullah's integrative-interconnective epistemology model in education at Muhammadiyah Boarding School (MBS) Yogyakarta, Indonesia. Employing a qualitative descriptive approach with a case study design, the study involved purposively selected participants consisting of the mudhir (head of the boarding school), vice director for education, school principal, vice principal for curriculum affairs, and teachers. Data were collected through in-depth interviews, participatory observations, and document analysis of curriculum documents, learning activities, institutional policies, and strategic development plans. The data were analyzed using thematic analysis through coding, categorization, theme development, and interpretation of findings. To ensure trustworthiness, source and method triangulation as well as member checking were employed. The findings reveal that MBS Yogyakarta has implemented an integrative approach through curriculum designs that combine Islamic studies and general sciences, interdisciplinary learning activities, and the development of an academic culture that promotes dialogue among diverse fields of knowledge. This implementation reflects the principles of Amin Abdullah's integrative-interconnective epistemology, which emphasizes collaboration between Islamic sciences, natural sciences, and social-humanities disciplines in addressing contemporary challenges. However, challenges remain, including the limited availability of educators with interdisciplinary competencies and the persistence of dichotomous perspectives among some teachers. Overall, MBS Yogyakarta demonstrates a practical model of integrative Islamic epistemology that can serve as a reference for the development of contextual, inclusive, and transformative Islamic education.

Keywords: Amin Abdullah, integrated-interconnected, Islamic education, Islamic epistemology

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INTRODUCTION

In the modern era, characterized by the rapid development of science, technology, and global interconnectedness, Islamic education faces increasingly complex epistemological challenges. One of the most persistent issues is the dichotomy between religious and general knowledge, which continues to influence the structure of educational institutions in many Muslim societies. This separation often results in fragmented educational experiences, where religious institutions focus primarily on Islamic sciences while public educational institutions emphasize scientific and technological knowledge (Mokodompit et al., 2025). Consequently, students frequently encounter difficulties in integrating Islamic values with the competencies required to address contemporary social and scientific challenges.

The challenge has become more significant as modern educational systems increasingly adopt rationalist and empiricist paradigms that emphasize objectivity and scientific verification

as primary sources of knowledge. Although these approaches have contributed substantially to scientific advancement, they may also encourage the marginalization of ethical, spiritual, and transcendental dimensions within educational practice (Hamid et al., 2026). Within Islamic education, this condition often manifests in the separation of textual-religious approaches from rational and empirical modes of inquiry, creating epistemological tensions that affect both curriculum development and educational orientation (Anggraini et al., 2025; Saputra & Suyanta, 2025).

In response to these challenges, M. Amin Abdullah proposed the concept of integrative-interconnective epistemology, which emphasizes dialogue and collaboration among religious sciences, natural sciences, and the social-humanities. Rather than positioning revelation and modern science as opposing sources of knowledge, this framework promotes their interconnection in order to generate more comprehensive and contextual understandings of contemporary issues (Abdullah, 2006; Khasanah et al., 2024). Recent studies have further highlighted the relevance of this approach in overcoming the dichotomy of knowledge and strengthening the responsiveness of Islamic education to global challenges (Rahmani et al., 2026).

One of the central metaphors employed by Amin Abdullah is the “spider-web” model, which illustrates the interconnected nature of scientific disciplines. In this framework, knowledge is understood as a dynamic network in which each discipline contributes to a broader and more holistic understanding of reality. The model rejects hierarchical distinctions between “religious” and “secular” sciences and instead promotes mutual enrichment among diverse fields of knowledge (Ulvani, 2024). Such an approach aligns with contemporary discussions on curriculum integration, interdisciplinary learning, and holistic educational development in Islamic institutions (Akbar & Heri, 2025).

In the Indonesian context, several Islamic educational institutions have attempted to implement integrative approaches by combining religious and general sciences within their curriculum and learning systems. One institution that reflects this effort is Pondok Pesantren Modern Muhammadiyah Boarding School (PPM MBS) Yogyakarta. As a modern Islamic boarding school, PPM MBS integrates the tradition of *tafaquh fi al-din* with contemporary scientific, technological, and social knowledge. This educational model positions PPM MBS as an example of an institution seeking to overcome the long-standing dichotomy between religious and general sciences through an integrative-interconnective educational framework. However, despite growing scholarly attention to integrative Islamic education, empirical studies examining how Amin Abdullah’s epistemological framework is implemented in curriculum design, teaching practices, and the epistemological orientations of educators and students remain limited (Qiso et al., 2025).

Based on this background, this study aims to examine the implementation of Amin Abdullah’s integrative-interconnective epistemology at PPM MBS Yogyakarta. Specifically, the study focuses on three aspects: (1) how the curriculum reflects integrative-interconnective principles, (2) how learning strategies facilitate the interconnection between religious and general sciences, and (3) how educators’ and students’ epistemological orientations are shaped through this educational approach. The findings are expected to contribute both theoretically and practically to the development of transformative, inclusive, and contextual Islamic education capable of responding to contemporary challenges and the globalization of knowledge.

RESEARCH METHOD

This study employed a qualitative descriptive approach with a case study design to examine the implementation of Amin Abdullah’s integrative-interconnective epistemology in education at PPM MBS Yogyakarta, Indonesia. A qualitative approach was selected because it enables researchers to explore meanings, values, and educational practices within their natural context,

particularly regarding how the concept of integrative-interconnective epistemology is translated into curriculum design, learning processes, and institutional culture (Creswell & Poth, 2023). The case study design was chosen because it allows an in-depth investigation of a specific institution that represents the phenomenon under study (Yin, 2017).

The research was conducted at PPM MBS Yogyakarta, a Muhammadiyah-based modern Islamic boarding school that integrates religious and general sciences within its educational system. This institution was purposively selected because it has consistently implemented educational programs reflecting the principles of integrative-interconnective epistemology as developed by Amin Abdullah and discussed in recent studies on Islamic educational reform and knowledge integration (Abdullah, 2007; Rahmani et al., 2026). Data collection was carried out from January to March 2025.

The participants consisted of ten key informants selected through purposive sampling based on their direct involvement in curriculum planning, educational leadership, and learning implementation. The participants included one *mudhir* (head of the Islamic boarding school), one vice director for education, one school principal, one vice principal for curriculum affairs, and six teachers representing both religious and general subject areas. The selection criteria included: (1) having at least two years of experience at PPM MBS Yogyakarta, (2) actively participating in curriculum development or instructional activities, and (3) possessing knowledge of the institution's efforts to integrate religious and general sciences. Purposive sampling was considered appropriate because it allows researchers to select information-rich participants who have direct experience with the phenomenon under investigation (Campbell et al., 2020).

Data were collected through semi-structured interviews, participant observation, and document analysis. Interviews explored participants' understanding of integrative-interconnective epistemology, its implementation in educational practice, and challenges encountered during its application. Participant observations were conducted in classroom learning activities, interdisciplinary programs, and school events to capture actual educational practices. Document analysis included curriculum documents, syllabi, lesson plans, institutional policies, strategic plans, and student activity guidelines. Documents were selected based on their relevance to educational policy, curriculum implementation, and evidence of knowledge integration. The evaluation criteria focused on authenticity, relevance, credibility, and consistency with the research objectives (Bowen, 2021).

Data were analyzed using thematic analysis procedures adapted from Braun and Clarke (2022), involving data familiarization, open coding, category development, theme identification, review of themes, and interpretation of findings. Interview transcripts, observation notes, and institutional documents were coded systematically to identify recurring patterns related to the implementation of integrative-interconnective epistemology. Similar codes were grouped into categories and subsequently developed into broader themes.

To ensure trustworthiness, the study employed source triangulation, method triangulation, member checking, and peer debriefing. Source triangulation was conducted by comparing information obtained from different participants, while method triangulation involved comparing findings from interviews, observations, and documents. Member checking was conducted by sharing summaries of interview findings with participants to verify accuracy and interpretation. Peer debriefing with fellow researchers was also undertaken to minimize researcher bias and strengthen analytical rigor. These strategies are widely recognized for enhancing credibility, dependability, and confirmability in qualitative research (Nowell & Albrecht, 2024).

This study adhered to qualitative research ethical principles by obtaining informed consent from all participants, ensuring confidentiality and anonymity, and reporting findings honestly and responsibly. Ethical considerations were implemented throughout the research process to protect participants' rights and maintain research integrity (Liang, 2019). Through these

procedures, the study sought to provide a credible and comprehensive understanding of how integrative-interconnective epistemology is implemented within an Islamic educational institution and its implications for the development of contemporary Islamic education.

RESULTS AND DISCUSSION

Based on interviews, observations, and document analysis conducted at PPM MBS Yogyakarta, it was found that the institution has implemented a systematic approach to knowledge integration within its curriculum and learning practices. This integration extends beyond the formal combination of religious and general subjects and encompasses pedagogical methods, ethical values, and epistemological orientations. Several forms of integrative-interconnective implementation were identified, including: (1) an integrated curriculum combining *tafaqquh fi al-din* with science, technology, and social-humanities subjects; (2) interdisciplinary projects requiring students to relate Islamic teachings to contemporary social issues; (3) collaborative curriculum development through regular discussions among teachers from different disciplinary backgrounds; and (4) extracurricular activities addressing contemporary themes such as environmental sustainability, human rights, and artificial intelligence from both Islamic and scientific perspectives.

These findings indicate that PPM MBS Yogyakarta has adopted the principles of integrative-interconnective epistemology proposed by Amin Abdullah. Within this framework, religious knowledge is not positioned as an isolated domain but is encouraged to interact with natural and social sciences in addressing contemporary societal challenges (Abdullah, 2007). Recent studies have similarly emphasized that the integration of Islamic and modern sciences contributes to the development of more contextual, adaptive, and holistic educational models capable of responding to the complexity of contemporary life (Rahmi et al., 2025; Rahmani et al., 2026). The curriculum structure at PPM MBS reflects this orientation by promoting meaningful connections between revelation-based knowledge and empirical inquiry.

The findings also demonstrate that teachers play a significant role as epistemological mediators who facilitate interdisciplinary dialogue in the learning process. For example, teachers integrate Qur'anic discussions on environmental stewardship with ecological concepts and contemporary environmental challenges. This practice reflects the growing trend of interdisciplinary Islamic education, which seeks to connect religious values with scientific literacy and global citizenship competencies (Zahroh et al., 2022). Such practices are further strengthened through institutional programs, including curriculum workshops, collaborative lesson planning, and continuous professional development activities aimed at enhancing teachers' interdisciplinary competencies.

Despite these achievements, several challenges remain. The limited availability of educators with interdisciplinary expertise and the persistence of dichotomous perspectives among some teachers and students continue to hinder the full realization of integrative-interconnective learning. Similar challenges have been identified in recent studies examining the implementation of knowledge integration in Islamic educational institutions, particularly regarding teacher preparedness, institutional culture, and the transition from discipline-based to interdisciplinary learning models (Rofiah et al., 2025; Saputra & Suyanta, 2025). These findings suggest that successful implementation requires not only curricular reform but also sustained efforts to develop epistemological awareness and collaborative academic cultures.

From the perspective of Islamic educational development, the model implemented at PPM MBS Yogyakarta demonstrates how philosophical concepts can be translated into educational practice. The integration of religious and general sciences promotes transformative learning by encouraging students to critically engage with social realities while maintaining a strong ethical and spiritual foundation. Recent scholarship has highlighted that transformative and integrative educational approaches are essential for preparing Muslim learners to navigate the challenges

of globalization, technological change, and social diversity (Sudirmanto et al., 2025; Indah, 2025).

Theoretically, the implementation of integrative-interconnective epistemology at PPM MBS Yogyakarta reflects a shift from a predominantly normative orientation toward a contextual and transformative epistemological framework. In this model, religious knowledge is not merely preserved but continuously interpreted and developed in dialogue with contemporary realities. This finding supports recent discussions on the reconstruction of Islamic epistemology, which emphasize the need for dynamic interactions between revelation, reason, and empirical experience in contemporary Islamic education (Arini et al., 2025; Rahmani et al., 2026).

Thus, the educational model implemented by PPM MBS Yogyakarta contributes to the development of an inclusive, dynamic, and responsive epistemological framework in Islamic education. Practically, this model can be applied through curriculum designs that systematically integrate religious and general sciences, interdisciplinary learning activities, and collaborative teaching approaches that connect Islamic perspectives with scientific and social issues. Furthermore, the model encourages educators and students to move beyond the traditional dichotomy between religious and secular knowledge by developing an epistemological orientation that views all branches of knowledge as interconnected sources for understanding and addressing real-world challenges. In this way, the PPM MBS Yogyakarta model provides a practical reference for Islamic educational institutions seeking to implement integrative-interconnective learning and strengthen the relevance of Islamic education in contemporary society (Rahmi et al., 2025; Hartono et al., 2025).

CONCLUSION

This research shows that PPM MBS Yogyakarta has implemented the epistemological integration-interconnection approach initiated by Amin Abdullah in its educational design and practice. This integrative concept is reflected in a curriculum that combines religious and general knowledge, a cross-disciplinary learning approach, and an academic culture that encourages dialogue between disciplines. The curriculum at PPM MBS Yogyakarta no longer pits religious knowledge against modern science, but rather connects the two within a framework of ethics, contextualization, and social responsibility.

The findings also indicate that the implementation of integration-interconnection at this institution is not merely symbolic, but has touched upon structural (curriculum), pedagogical (teacher strategies), and cultural (institutional values) dimensions. This approach aligns with the principles of transdisciplinary epistemology, which emphasizes the openness of science to dialogue and interaction across fields as a response to the complexities of the contemporary era.

However, challenges in implementing this model remain, particularly in terms of the availability of human resources capable of interdisciplinary thinking, as well as the need to continuously strengthen a critical and integrative culture among teachers and students. Therefore, teacher capacity development, contextual curriculum development, and strengthening interdisciplinary collaboration are crucial steps in perfecting the implementation of this model.

Overall, the integrative-interconnective educational model at Pondok Pesantren Modern Muhammadiyah Boarding School (MBS) Yogyakarta can serve as an applicable reference in the development of modern Islamic education that avoids being trapped in the dichotomy of knowledge but instead paves the way toward an Islamic epistemology that is inclusive, dynamic, and relevant to the challenges of the times. This also demonstrates that Amin Abdullah's theoretical ideas have high practical value when translated into the institutional context of Islamic education at the secondary level.

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DECLARATION

Author contribution

All authors contribute in the research and/or writing the paper, and approved the final manuscript.

<i>Muhammad Arif Darmawan</i>	Conceptualizing the research idea, leading the investigation, setting up the methodology, collecting data, analyzing the data, and writing the original draft.
<i>Zamahzari</i>	Assisting the investigation, reviewing the validity of the methodology, and assisting the data analysis.

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Conflict of interest

All authors declare that they have no competing interests.

Ethics declaration

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The use of artificial intelligence

We do not use any generative AI tools to write any part of this paper.

Additional information

Not available.

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