

Human-Centered Digital Pedagogy in Islamic Religious Education: Integrating AI and Islamic Digital Literacy for Society 5.0

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ABSTRACT

Keywords:

Human-Centered Digital Pedagogy, Islamic Religious Education, Society 5.0, Artificial Intelligence, Islamic Intelligent Digital Pedagogy Framework (IIDPF).

Abstract: The transition toward Society 5.0, a human-centered super-smart society, shifts educational digitalization from technological competence to developing learners with cognitive, spiritual, and moral intelligence. Islamic Religious Education (IRE) plays a strategic role in this transformation, yet existing studies remain fragmented and largely techno-centric, addressing digital pedagogy, artificial intelligence (AI), and Islamic digital literacy separately. This study constructs a human-centered conceptual framework for IRE digital pedagogy aligned with Society 5.0 through library research using a descriptive-analytical approach. It synthesizes reputable national and international literature (2021–2026) supported by seminal theoretical perspectives. The findings indicate that learning management systems, blended learning, interactive media, gamification, game-based learning, and AI enhance IRE when guided by pedagogical objectives and Islamic values but may weaken spirituality when technology becomes an end. The proposed Islamic Intelligent Digital Pedagogy Framework (IIDPF) integrates technology, pedagogy, and Islamic values to cultivate learners with balanced digital, spiritual, and moral intelligence while providing practical guidance for educators and policymakers.

Kata Kunci:

Pedagogi Digital Berpusat pada Manusia, Pendidikan Agama Islam, Society 5.0, Kecerdasan Buatan, Islamic Intelligent Digital Pedagogy Framework (IIDPF).

Abstrak: Transisi menuju Society 5.0 sebagai masyarakat supercerdas yang berpusat pada manusia menggeser tujuan digitalisasi pendidikan dari sekadar penguasaan teknologi menuju pembentukan peserta didik yang cerdas secara kognitif, spiritual, dan moral. Pendidikan Agama Islam (PAI) memiliki peran strategis dalam transformasi tersebut, namun kajian yang ada masih bersifat parsial dan cenderung teknosentris dengan membahas pedagogi digital, kecerdasan buatan (AI), dan literasi digital Islam secara terpisah. Penelitian ini bertujuan menyusun kerangka konseptual pedagogi digital PAI yang berpusat pada manusia dan selaras dengan Society 5.0 melalui penelitian kepustakaan menggunakan pendekatan deskriptif-analitis. Analisis dilakukan terhadap literatur nasional dan internasional bereputasi periode 2021–2026 yang didukung teori-teori utama. Hasil penelitian menunjukkan bahwa Learning Management System, blended learning, media interaktif, gamifikasi, game-based learning, dan AI mampu meningkatkan kualitas pembelajaran PAI apabila diarahkan oleh tujuan pedagogis dan nilai-nilai Islam, tetapi berpotensi melemahkan dimensi spiritual ketika teknologi menjadi tujuan. Kerangka Islamic Intelligent Digital Pedagogy Framework (IIDPF) yang diusulkan mengintegrasikan teknologi, pedagogi, dan nilai-nilai Islam untuk membentuk kecerdasan digital, spiritual, dan moral secara seimbang serta menjadi acuan praktis bagi pendidik dan pembuat kebijakan.

Article History:

Received : 01-09-2026

Accepted : 30-10-2026



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A. INTRODUCTION

The civilizational shift from the Fourth Industrial Revolution toward Society 5.0 marks a fundamental philosophical transformation. Whereas Industry 4.0 is oriented toward automation and machine optimization, Society 5.0 is conceived as a human-centered society a super-smart society that places the human being, rather than technology, at the center and as the ultimate purpose of all digital innovation (Fukuyama, 2018; (Mintasih, Sukiman, Purnama, et al., 2024). Within this paradigm, artificial intelligence, big data, the Internet of Things, and cloud computing are judged not by their sophistication alone but by the extent to which they dignify and enhance human well-being. Consequently, the aim of education in the Society 5.0 era shifts from merely producing technologically literate individuals toward forming smart people: human beings who are cognitively, spiritually, and morally intelligent.

Islamic Religious Education (IRE), as a subject oriented toward the formation of character, morality, and spirituality, lies at the very heart of this human-centered agenda. The characteristics of Generation Z and Generation Alpha learners, who have grown up within a digital ecosystem, require IRE to move from conventional approaches toward digital pedagogy (Mintasih, Sukiman, Purnama, et al., 2024). However, the digitalization of IRE must not become trapped in the techno-centric logic inherited from the 4.0 era, which reduces learning success to the mastery of devices. It is precisely here that the relevance of Society 5.0 becomes crucial: it provides a philosophical frame in which technology is positioned as a servant of the formation of the whole human being, not the reverse.

In this context, digital pedagogy is not merely the use of technology as an aid; it is the integration of digital technology into instructional design, teaching strategies, teacher–student interaction, assessment, and knowledge construction (Nusantara & Sukandar, 2025). In IRE, this approach becomes a means of simultaneously improving the quality of learning and strengthening the internalization of Islamic values amid a torrent of digital information rife with religious disinformation (Muksin & Afandi, 2025).

Although scholarship on the integration of technology in IRE has grown, most studies remain fragmented focusing on learning media, e-learning, or blended learning in a piecemeal manner (Riyadi & Abdulghani, 2025; Ummah & Ramdhan, 2026) and tend to be techno-centric. Studies that holistically integrate the perspectives of digital pedagogy, artificial intelligence, Islamic digital literacy, and religious character formation within a single, human-centered conceptual framework remain relatively scarce. This is the gap that the present article seeks to address.

Against this background, this article aims to: (1) affirm the philosophical convergence between the human-centered principle of Society 5.0 and the anthropology of Islamic education; (2) formulate a concept of human-centered digital pedagogy for IRE; and (3) construct an original conceptual model the Islamic Intelligent Digital Pedagogy Framework (IIDPF) as an orientation for cultivating Islamically characterized smart people within a super-smart society. The novelty of the article lies in its explicit shift from techno-centric to human-centered logic, positioning the human being as *khalifah* vicegerent and *'abd* servant as the axis integrating technology, pedagogy, and Islamic values.

This article makes three principal contributions. First, a theoretical contribution: it extends the concept of digital pedagogy by integrating the human-centered education paradigm (Society 5.0) and Islamic values within a single framework, while offering a reinterpretation of smart people as a unity of digital, critical, and spiritual intelligence. Second, a pedagogical contribution: the IIDPF model can serve as a concrete reference for IRE teachers in designing AI-based learning that remains oriented toward character formation, so that technology is positioned to support educational aims rather than being treated as an end in itself. Third, a policy contribution: the framework provides direction for curriculum designers and Islamic-education policymakers in formulating regulations on Islamic digital literacy, strengthening teachers' digital competence, and governing digital ethics in educational institutions.

In sum, this study links the philosophical level *the human-centered paradigm*, the practical level *AI-based instructional design*, and the policy level *regulation and governance* within a single coherent trajectory, so that the digitalization of IRE does not stop at the adoption of technology but culminates in the formation of human beings of character.

B. METHOD

This study is a conceptual-integrative Systematic Literature Review (SLR) conducted in accordance with the PRISMA 2020 reporting principles (Page et al., 2021). An SLR approach was chosen so that the processes

of identification, selection, appraisal, and synthesis proceed systematically, transparently, and reproducibly, ensuring that the resulting conceptual framework rests on a curated body of evidence rather than on impressionistic reading (Ummah & Ramdhan, 2026). The procedure comprises six components: search strategy, database, inclusion and exclusion criteria, quality assessment, data extraction, and thematic analysis.

1. Search Strategy

The search was restricted to the 2021–2026 period and employed Boolean combinations of keywords (AND/OR) grouped into five thematic clusters (Table 1). Seminal theoretical works constructivism, connectivism, TPACK, and the concept of a human-centered society were searched separately as theoretical anchors and were exempt from the time restriction.

Table 1. Keyword Clusters and Boolean Search Strings

Cluster	Search String
Technology & AI	("artificial intelligence" OR "generative AI" OR "ChatGPT") AND education
Digital pedagogy	("digital pedagogy" OR "TPACK" OR "blended learning" OR "gamification")
Islamic context	("Islamic religious education" OR "Islamic education") AND (digital OR technology)
Paradigm	("Society 5.0" OR "super smart society" OR "human-centered")
Literacy & character	("digital literacy" OR "character education") AND Islam

2. Database

The search was conducted across five databases: Scopus and Web of Science to ensure coverage of reputable Q1–Q2 international journals, DOAJ, Garuda/SINTA to represent nationally accredited journals and the Indonesian IRE context, and Google Scholar as a supplementary search to capture the most recent 2024–2026 literature not yet fully indexed.

3. Inclusion & Exclusion Criteria

Selection criteria were established a priori to preserve objectivity (Table 2).

Table 2. Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Published 2021–2026 (seminal works exempt from the year limit)	Published before 2021, except seminal theoretical works
International journals indexed in Scopus Q1–Q2 or nationally accredited SINTA 1–3 journals	Non-scholarly sources: blogs, popular news, non-peer-reviewed opinion
Relevant to IRE, digital pedagogy, AI, or the Society 5.0 paradigm	Not relevant to the IRE focus or the human-centered orientation
Written in Indonesian or English; full text available	Other languages; abstract only; duplicate articles

4. Quality Assessment

Each candidate was appraised using a concise four-indicator rubric scored 1–3: (a) clarity of objectives; (b) methodological soundness; (c) source reputation and indexing (Scopus quartile / SINTA rank); and (d) thematic contribution. Only articles with adequate scores entered the synthesis, with priority given to recent Q1–Q2 journals such as Zawacki-Richter et al. (2019), Yusuf & Noor (2024), Al-Zahrani (2024), and Shahidi Hamedani et al. (2024). This step ensures that the findings rest on high-quality, verified literature.

5. Data Extraction

Data were extracted into a structured matrix to facilitate cross-source comparison Table 3.

Table 3. Data Extraction Elements

Element	Description
Identity	Author, year, source, quartile/indexing

Focus	Main topic and research question
Method	Research design (SLR, bibliometric, empirical, conceptual)
Key findings	Principal results relevant to IRE/Society 5.0
Theme	Emergent thematic category

6. Thematic Analysis

The synthesis employed Braun and Clarke's (2006) six-phase thematic analysis: (1) familiarization with the data; (2) generating initial codes; (3) searching for themes; (4) reviewing themes; (5) defining themes; and (6) reporting. This process yielded six themes that structure the Results and Discussion. The mapping of themes to key sources is presented in Table 4 as a synthesis matrix.

Table 4. Synthesis Matrix: Mapping of Themes to Key Sources

Theme	Key Sources
T1. Human-centered paradigm shift	Fukuyama (2018); Shahidi Hamedani et al. (2024); Maulidi et al. (2025)
T2. AI & personalization in IRE	Luqmi et al. (2024); Zawacki-Richter et al. (2019); Yusuf & Noor (2024); Al-Zahrani (2024); Abubakari et al. (2024)
T3. Islamic digital literacy & ethics	Muksin & Afandi (2025); Caroline et al. (2025); UNESCO (2021)
T4. Implementation (LMS, blended, gamification)	Ummah et al. (2026); Garrison & Vaughan (2008); Deterding et al. (2011); Hamari et al. (2014); Tarida et al. (2025)
T5. Teacher competence & challenges	Dadang et al. (2025); Mintasih et al. (2024); Nusantara & Sukandar (2025); Selwyn (2019)
T6. Integrative human-centered model	Author's synthesis (IIDPF)

7. Study Selection and PRISMA Flow

Applying the criteria above across the five databases yielded 520 initial records. After removing 50 duplicates, 470 records remained; title-and-abstract screening retained 180 records (290 excluded). Full-text assessment of these records identified 76 eligible articles (104 excluded), of which 42 met the quality-assessment threshold and were included in the synthesis. The complete selection process is summarized in the PRISMA flow diagram (Figure 1).

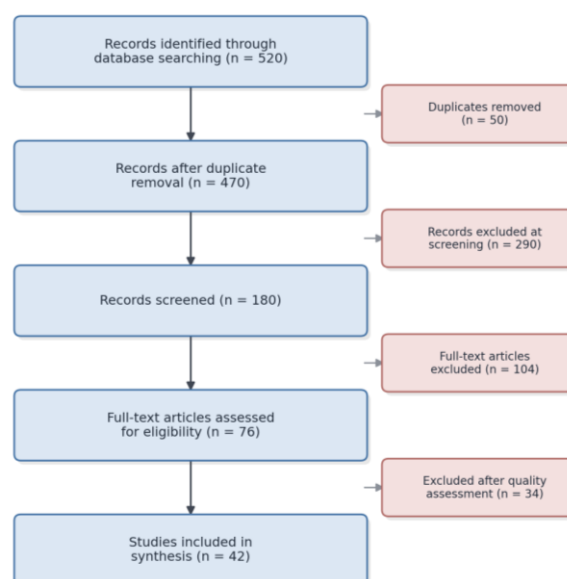


Figure 1. PRISMA Flow Diagram of the Study Selection Process

C. RESULTS AND DISCUSSION

1. Society 5.0 as a Human-Centered Society: Convergence with the Anthropology of Islamic Education

The concept of Society 5.0 was first articulated as a vision of a future society that balances economic advancement with the resolution of social problems through a system integrating cyberspace and physical space, with the human being at its center (Fukuyama, 2018; Shahidi Hamedani et al., 2024). Its two key terms are super-smart society and human-centered: technology may be highly intelligent, but its intelligence must ultimately serve human dignity.

This principle resonates strongly with the anthropology of Islamic education. In the Islamic view, the human being is both *khalīfah fil-ard* steward of the earth and *‘abd* a servant who worships, and the aim of education *ta’dīb* is the formation of a person of adab who rightly recognizes the proper place of things (Al-Attas, 1980; Putra & Yunianika, 2025).

Thus the Society 5.0 notion of human-centeredness finds its theological counterpart in the formation of the *insān kāmil* the complete human being. Within this frame, technology is *musakhkharāt* that which is made subservient for the benefit of humanity, not a master that enslaves.

This convergence yields a reinterpretation of the term smart people. In an Islamic super-smart society, “smart” is not confined to cognitive or digital intelligence but encompasses spiritual and moral intelligence simultaneously. This is the reorientation that constitutes the central thesis of this article, as summarized in Table 5.

Table 5. Reorientation of IRE from Society 4.0 Techno-Centric to Society 5.0 Human-Centered.

Aspect	Society 4.0 (Techno-Centric)	Society 5.0 (Human-Centered)
Primary focus	Automation & device mastery	Human dignity & wholeness
Role of technology	An end / marker of progress	A subservient means (musakhkharāt)
Role of the teacher	Potentially replaceable by tools	Facilitator & spiritual mentor (uswah)
Learning aim	Technological literacy	Smart people: cognitively, spiritually, morally intelligent
Measure of success	Efficiency & scores	Religious character & meaningfulness (insān kāmil)

2. The Concept of Human-Centered Digital Pedagogy in IRE

Human-centered digital pedagogy in IRE may be defined as a learning process that integrates digital technology in a pedagogical and Islamically grounded manner, with the formation of the whole human being as its highest aim. Unlike the purely technical use of technology, this approach treats technology as part of a strategy designed to achieve educational goals (Bower, 2017; Maulidi et al., 2025). Its principal characteristics are:

- Centered on the learner as a dignified subject student-centered, not an object of technology;
- Integrating digital technology pedagogically rather than as a gimmick;
- Fostering collaboration, active participation, and critical thinking;
- Developing Islamic digital literacy as the capacity to filter religious information;
- Instilling digital ethics (*adab* in the digital sphere) grounded in Islamic values;
- Supporting flexible, sustainable learning without sacrificing the spiritual dimension.

3. Theoretical Foundations

Constructivism. Learners construct their knowledge through experience and interaction (Vygotsky, 1978). In digital environments, they gain the opportunity to explore learning resources independently through

videos, virtual simulations, and various digital platforms consistent with the human-centered principle that values learner agency.

Connectivism. According to Siemens (2005), learning in the digital age occurs through interconnected networks of information; knowledge is distributed across diverse digital nodes, including artificial intelligence. This principle is pertinent to IRE, which increasingly draws on digital platforms as sources of religious knowledge while demanding the ability to appraise the credibility of information nodes.

The TPACK framework. Technological Pedagogical Content Knowledge (Mishra & Koehler, 2006) requires IRE teachers to master three competencies content, pedagogy, and technology—in an integrated manner. Within a human-centered frame, TPACK is extended with a fourth dimension, namely values Islamic values, so that the integration of technology remains subordinate to the aim of character formation (Dadang et al., 2025).

4. Implementation of Digital Pedagogy in IRE

The literature identifies six forms of implementation which, when given a human-centered orientation, are shown to strengthen IRE:

- a. **Learning Management Systems (LMS).** Platforms such as Google Classroom, Moodle, and Canvas enable more organized online management of materials, assignments, assessment, and religious discussion (Tarida et al., 2025).
- b. **Blended learning.** The combination of face-to-face and online instruction is the most widely applied model in IRE because it fuses the warmth of direct interaction—vital for exemplary modeling *uswah* with digital flexibility (Garrison & Vaughan, 2008; Ummah & Ramdhan, 2026).
- c. **Interactive learning media.** Videos, Islamic podcasts, infographics, and animations enhance motivation and present religious content more engagingly than conventional lecturing (Mintasih, Sukiman, & Purnama, 2024).
- d. **Gamification and game-based learning.** Gamification adopts game elements quizzes, points, rewards into learning, whereas game-based learning makes educational games the primary medium, giving learners direct experiential learning. In IRE, both are applied to Islamic history, Qur'an memorization, the fiqh of worship, and character strengthening, and are shown to significantly increase motivation, engagement, and knowledge retention (Deterding, S., Dixon, D., Khaled, R. y Nacke, 2011; Hamari et al., 2014).
- e. **Artificial Intelligence (AI).** Generative AI such as ChatGPT, Gemini, and Copilot opens opportunities for retrieving Islamic information, developing teaching materials, personalizing learning, and providing automated feedback (Luqmi et al., 2024; Yusuf et al., 2024; Zawacki-Richter et al., 2019) . Yet, consistent with the human-centered principle, its use demands teacher verification and guidance so that religious information remains accurate and rooted in authoritative sources AI is an assistant, not a replacement for scholarly authority or the teacher's role (Holmes et al., 2019; Selwyn, 2019). A SWOT appraisal in the IRE context affirms that AI offers efficiency alongside risks of dependency and disinformation (Abubakari et al., 2024), making a critical stance toward the AI "hype" imperative (Al-Zahrani, 2024).
- f. **Personalized learning.** Learning analytics and AI enable materials to be tailored to each learner's ability, needs, and learning style a concrete expression of the human-centered orientation that treats every learner as a unique person (Koswara et al., 2025; Mulyana & Maylawati, 2024).

5. Opportunities of Human-Centered Digital Pedagogy in IRE

- a. Expanded access to education, unbounded by space and time (Tarida et al., 2025);
- b. Increased learner engagement through interactive media;
- c. Strengthened Islamic digital literacy for filtering authentic religious information (Caroline et al., 2024) amid the proliferation of unverified digital content (Muksin & Afandi, 2025);
- d. Humane, differentiated personalized learning;

- e. Development of 21st-century competencies: critical thinking, creativity, communication, and collaboration (Nusantara & Sukandar, 2025).

6. Challenges and the Risk of Techno-Centrism

- a. The digital divide: inequitable access to devices and networks (Koswara et al., 2025);
- b. Teachers' digital competence, not yet evenly distributed for pedagogically sound technology integration (Dadang et al., 2025);
- c. Digital ethics: religious hoaxes, hate speech, digital radicalism, and cyberbullying (UNESCO, 2021); Muksin & Afandi, 2025)
- d. Religious disinformation from non-credible sources, requiring the teacher to act as both facilitator and filter;
- e. Technological dependency and the erosion of spirituality: the most fundamental risk when technology becomes an end techno-centric, the spiritual dimension and humane interaction may be eroded. The human-centered principle is precisely the antidote to this risk.

7. The Islamic Intelligent Digital Pedagogy Framework (IIDPF): The Proposed Model

The findings indicate that most prior studies emphasize technology, or address digital literacy and AI only partially, so that no model has yet integrated intelligent technology, pedagogical transformation, and Islamic character formation within a single, holistic, human-centered framework. As an original contribution, this article proposes the Islamic Intelligent Digital Pedagogy Framework (IIDPF).

The position of the IIDPF among established technology-integration models is presented in Table 6. The TPACK model (Mishra & Koehler, 2006) excels at integrating content, pedagogy, and technology but does not incorporate Islamic values; SAMR (Hamilton et al., 2016) offers stages of technology integration but does not address the spiritual dimension; and Techno-Humanistic Islamic Pedagogy (Maulidi et al., 2025) is already humanistic but not yet specific to IRE practice. The IIDPF is designed to address all three gaps simultaneously.

Table 6. Position of the IIDPF Relative to Existing Technology-Integration Models

Model	Technology	Human-Centered	Islamic Values	AI	Novelty
TPACK	✓	—	—	—	Content–pedagogy–technology integration
SAMR	✓	—	—	—	Four-level technology-integration ladder
Techno-Humanistic	✓	✓	✓	—	Humanistic Islamic learning (not IRE-specific)
IIDPF	✓	✓	✓	✓	Society 5.0 axis integrating AI + three intelligences for IRE

The IIDPF rests on a single core: the human being as khalifah and 'abd. Upon this core stand three mutually reinforcing pillars Technology, Pedagogy, and Islamic Values which synergistically form the three kinds of intelligence that characterize smart people in a super-smart society: digital intelligence, critical-collaborative intelligence, and spiritual-moral intelligence. The IIDPF thus integrates and refines the notion of Techno-Humanistic Islamic Pedagogy (Maulidi et al., 2025) into a single coherent model, as visualized in Figure 2 and detailed in Table 7.

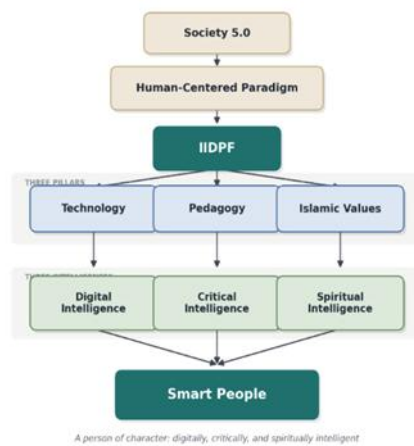


Figure 2. Conceptual Flow of the Human-Centered IIDPF toward the Formation of Smart People

Table 7. Structure of the Islamic Intelligent Digital Pedagogy Framework (IIDPF)

Pillar	Focus	Mechanism in IRE	Intelligence Formed
Technology	Harnessing intelligent technology	AI as assistant, LMS, interactive media, personalization	Digital intelligence
Pedagogy	Learner-centered strategies	Blended, PjBL, game-based learning, reflective learning	Critical-collaborative intelligence
Islamic Values	Internalization of Qur'anic-Prophetic values & adab	Ta'dīb, teacher modeling, Islamic digital ethics	Spiritual & moral intelligence
Core (Human-Centered)	The human being as khalifah & 'abd	Serves as the axis directing the three pillars	Outcome: insān kāmīl / smart people of character

This model affirms that the success of the digital transformation of IRE is determined not by the sophistication of technology but by the teacher's pedagogical capacity and the successful internalization of Islamic values in the digital environment. The ultimate aim of digitalizing IRE is not merely to enhance learners' technological competence but to form human beings who are digitally, spiritually, and morally intelligent simultaneously this is the embodiment of the *smart people* in the *super-smart society* envisioned by *Society 5.0*.

D. CONCLUSIONS AND SUGGESTIONS

Human-centered digital pedagogy is a fitting paradigm for IRE in the Society 5.0 era, for it philosophically unites the human-centered principle of a super-smart society with the anthropology of Islamic education, which regards the human being as khalifah, 'abd, and a prospective insān kāmīl. Its implementation through LMS, blended learning, interactive media, gamification, game-based learning, and AI is shown to enhance the effectiveness and engagement of learning, provided that technology is positioned as a means rather than an end.

The principal contribution of this article is the Islamic Intelligent Digital Pedagogy Framework (IIDPF), which integrates technology, pedagogy, and Islamic values upon a human axis to form smart people who are digitally, spiritually, and morally intelligent. The model's impact is both practical and strategic: it offers an actionable orientation for teachers, curriculum designers, and policymakers in realizing an IRE that is adaptive to the times without losing the dimensions of spirituality and character formation (Lickona, 1991). In doing so, the framework complements previous studies on socio-religious value internalization in

community-based Islamic education (Hakim & Syihabuddin, 2026) by extending these principles into the context of AI-supported digital pedagogy for Society 5.0. Future research is encouraged to test the IIDPF empirically through action research or experimental studies in educational institutions.

ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to the institutions that supported the completion of this study, particularly the Faculty of Islamic Education of Universitas Sunan Gresik, Universitas Tarbiyatut Tholabah Lamongan, Universitas Kiai Abdullah Faqih Gresik, and STAI Al-Hamidiyah Bangkalan for providing academic support and an encouraging research environment. The authors also extend their appreciation to fellow scholars and anonymous reviewers whose valuable insights and constructive feedback contributed significantly to the improvement of this manuscript. Finally, the authors are grateful to all researchers whose published works served as important references in developing the conceptual framework proposed in this article.

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