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Islamic Religious Educators in Society 5.0: Challenges and Strategies for Digital Character Formation in Smart Classrooms

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Abstract

This article examines how Islamic religious education cultivates digital character within Society 5.0 smart classrooms. Using a library-based study with a descriptive-analytical approach, the review maps the literature onto internal factors (competence and pedagogical paradigm) and external curricular factors (infrastructure, content, and design), and then derives operational strategies. The findings indicate that the challenges are multidimensional. Internally, teachers face uneven information and communication technology competencies, a persistent teacher-centered paradigm, and cultural resistance. Externally, infrastructural disparities, curated digital Islamic religious education content scarcity, and curricula that rarely tether technology to Islamic values weaken classroom practice. This configuration heightens students' exposure to disinformation, cyberbullying, and soft radicalization; risks dehumanization; and reduces Islamic education teachers to mere device operators. The study proposes reorienting teachers as moral navigators and humanizers of technology, alongside implementing project-based learning and blended–flipped learning methods that explicitly integrate Islamic values into digital practice, so that technology consistently serves the formative aims of Islamic education.

Keywords: *Society 5.0; Islamic religious education; smart classroom; digital character; Project-Based Learning*

Introduction

The acceleration of educational digitalization is transforming classroom ecosystems into smart classrooms that integrate Learning Management Systems (LMS), computing devices, and online-offline interactions (Zhang et al., 2025). Consequently, Islamic religious education teachers have shifted from mere content delivery to digital role models and designers of ethically grounded learning experiences (Pradonansyah et al., 2025). Within the Society 5.0 landscape, learning can no longer be satisfied with targeting technological literacy alone (Shahidi Hamedani et al., 2024); the central challenge is the formation of a digital character firmly rooted in foundational Islamic ethical values, which must be explicitly tied to Islamic religious education learning objectives and everyday

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classroom practice (Zainudin et al., 2025). At the same time, curriculum innovations grounded in local wisdom reveal opportunities to contextualize Islamic values in students' digital practices (Fajrussalam et al., 2020). Nonetheless, these initiatives necessitate functional and quantifiable pedagogical frameworks that transcend declarations. This change means that teachers must be moral guides (*murabbi*) and technology facilitators, with a professional-spiritual identity constantly being worked out in practice (Succarie, 2024).

Several studies have mapped the landscape of Islamic education in the era of Society 5.0. Zainudin et al (2025) propose a spiral model of integration to align Islamic values with the *Kurikulum Merdeka*. Fajrussalam et al (2020) underscore the urgency of Islamic religious education curriculum innovation based on local wisdom. Succarie (2024) shows how context-specific Islamic teacher education can shape a faith-centred professional identity. At the level of practice and technology, Hidayat et al (2025) and Pradonansyah et al (2025) highlight smart-classroom adoption alongside persistent challenges in technological competence and in orchestrating devices and infrastructure.

Nevertheless, prior research remains fragmented, concentrating on either curricular frameworks (Zainudin et al., 2025), local-wisdom contexts (Fajrussalam et al., 2020), or specific technological adoption challenges (Hidayat et al., 2025). It has not yet systematically delineated internal (paradigm and competence) and external (infrastructure and content) challenges faced by Islamic religious education teachers, analyzed their implications for students' digital moral crises, or synthesized effective pedagogical strategies for smart classrooms. This study positions itself to fill that gap through a holistic, descriptive-analytical literature review.

This article aims to map the internal-external challenges of digital character formation in Islamic religious education smart classrooms and to synthesize role-revitalization and pedagogical strategies that are implementable at both classroom and ecosystem levels. This article argues that the primary constraint is not merely technical but reflects a pedagogical-ethical paradigm shift. Accordingly, the proposed strategies do not focus on stacking tools; instead, they emphasize revitalizing teachers' roles as moral navigators through a value-anchored digital pedagogy framework, so that technology consistently serves the core objective of Islamic education (moral and character formation).

Literature Review

The Society 5.0 era is characterized as a new human-centric paradigm wherein advancements in Artificial Intelligence (AI), Big Data, and the Internet of Things (IoT) are utilized to improve quality of life and tackle social issues (Martini et al., 2024). Industry 4.0 emphasizes the efficacy of automation, whereas Society 5.0 prioritizes the integration of cyber and physical environments to enhance the humanity of social

processes, such as education (Adel, 2024). Within this framework, IoT refers to an interlinked network of devices that collect, exchange, and analyze data in real time (Rathore et al., 2018). This ecosystem culminates in the educational sector through smart classrooms, a learning environment built on integrated information systems to improve the quality of instructional processes and interactions (Pardo-Baldoví et al., 2023). On this conceptual foundation, further inquiry is needed into how implementing Society 5.0 in smart classrooms generates opportunities and challenges.

The application of Society 5.0 in smart classrooms is commonly mapped onto three domains: AI-based personalized learning, platform-mediated collaborative learning, and data-driven instruction via analytics for real-time feedback (Leon et al., 2025). Such configurations expand cognitive access, accelerate differentiation, and streamline classroom management. However, a paradox emerges: optimizing technology simultaneously widens exposure to disinformation, hoaxes, and cyberbullying, while introducing risks of algorithmic bias and the dehumanization of learning interactions. Effectiveness, therefore, is determined not merely by technological sophistication but by an ethical-pedagogical framework that keeps technology at the service of education's human ends (Matar, 2025). The key question becomes: what role must educators, particularly Islamic religious education teachers, assume so that technology transforms without eroding the value dimension?

Teacher competence standards consist of four foundational pillars: instructional, professional, personal (character), and social (Arif et al., 2025). In the digital age, these jobs are evolving from mere content broadcasters to facilitators and innovators who create significant learning experiences enhanced by technology (Mufid et al., 2025). Within the digital ecosystem, the role spectrum of Islamic religious educators widens beyond content curation and process management to include serving as moral exemplars and digital mentors who guide students in navigating cyberspace responsibly (Kurniawan and Annisah, 2025). This expanded mandate logically requires a reassessment of competencies to ensure Islamic educational values remain safeguarded in practice.

The complexity of tasks in a Society 5.0 ecosystem necessitates a fifth technological (digital) competence integrated with the original four pillars (Arif et al., 2025). Its urgency is amplified by the dual expectation that Islamic religious educators master digital pedagogy and model virtuous technology use (Ma'mun et al., 2025). Here, a problem surfaces: whereas secular teacher education often culminates in a license to teach, Islamic teacher education ought to cultivate a purpose for teaching centered on faith and the common good (Succarie, 2024). In line with this, an Islamicized Technological Pedagogical Content Knowledge framework (TPACK-I) requires the integration of technology, pedagogy, and content, accompanied by the explicit safeguarding of Islamic values at every design decision and in all practices of digital instruction (Pradonansyah et

al., 2025). At this point, competence foundations converge with character foundations, particularly the notion of digital character.

In general scholarship, digital character is often aligned with digital citizenship: the capacity to participate responsibly in cyberspace based on ethics, safety, and adequate digital literacy (Martínez-Bravo et al., 2022). From the perspective of Islamic religious education, this concept aligns with the fundamental objective of character development (*tahdhib al-akhlaq*), guiding students to embody virtuous values in both the physical and digital realms (Budiyono et al., 2024). Thus, Digital competence is not a cosmetic add-on to the curriculum but a new medium for actualizing virtue. This congruence opens a pathway to marry the universal digital-citizenship framework with Islamic normative principles.

Islamic religious education integrates global frameworks and provides a normative-spiritual foundation through religious moderation (*wasatiyyah*), emphasizing balance, tolerance, and opposition to extremism (Jamilah, 2021). The execution of essential digital literacy is manifested in the validation of information to dismiss falsehoods (*tabayyun*), the management of the digital footprint as *amanah*, and the creation of constructive content informed by an ethos of *ihsan* (Suliman et al., 2023). Thus, digital character transcends mere technical proficiency; it serves as a conduit for enhancing students' religious motivation while ensuring that technological advancements in smart classrooms correspond with the objectives of Islamic education in cultivating character and virtue.

Method

This study employs a library research design with a qualitative, descriptive–analytical approach. This approach is the most appropriate given the study's focus on descriptively mapping the challenges faced by Islamic religious education educators and, second, analytically synthesizing role-revitalization strategies in the Society 5.0 era. Consistent with a literature-based design, the study relies entirely on secondary data drawn from published scholarly literature to identify patterns, gaps, and areas of theoretical consensus.

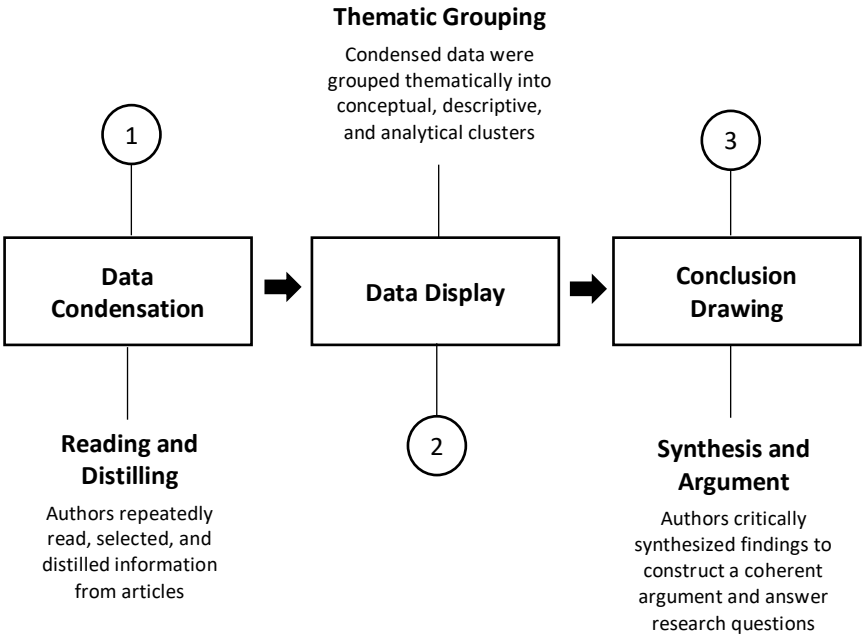
The data corpus comprises purposively selected international and national peer-reviewed journal articles from indexed academic databases, including Scopus, Google Scholar, and *Sinta*. Inclusion criteria were publication within the last decade to ensure currency and relevance to Society 5.0 and a specific focus on Islamic religious education, the Society 5.0 era, the digital era, smart classrooms, and digital character formation. Data collection was conducted through systematic keyword searching. Articles that passed title–abstract screening were retrieved in full text for analysis.

Data analysis adopted thematic analysis, carried out in three interactive operational stages. First is data condensation, in which the authors repeatedly read, selected, and distilled information from the collected articles. Second, data display, whereby condensed

data were grouped thematically into clusters aligned with the descriptive-analytical approach: a conceptual cluster (for the literature review), a descriptive cluster (to map challenges), and an analytical cluster (to synthesize strategies). Third, the conclusion drawing, in which the authors critically synthesize all findings to construct a coherent argument and answer the research questions.

Figure 1.

Thematic Analysis Process



Note. Figure processed by the authors (2025).

Results and Discussion

Internal Challenges of Islamic Religious Education Teachers: Digital Competence and Paradigm Shift

At present, the most fundamental obstacles for Islamic education teachers stem from uneven technological competence and digital literacy, often described as inconsistent technological competencies (Hendawi and Qadhi, 2024). This is evident in operational difficulties with basic smart-classroom devices (laptops, interactive projectors, smart screens), uncertainty in selecting platforms appropriate to specific learning goals, and limited capacity to leverage learning analytics for formative feedback (Mufid et al., 2025). Pedagogically, low levels of digital literacy translate into procedural rather than design-minded lesson planning, such that technology is treated as an add-on instead of being systematically integrated into learning flows and affective assessment. This condition produces a domino effect: value-oriented aims are difficult to translate into online activities, and the quality of interaction in cyberspace becomes fragile, particularly when teachers must make rapid decisions in smart classrooms (Pradonansyah et al., 2025).

Beyond technical issues, a teacher-centered mindset remains strong, where classroom decision-making relies on teacher control and one-way transmission (Bhardwaj et al., 2025). This orientation aligns with cultural resistance premised on fears that technology may erode the authenticity of Islamic values, distract students, or trigger misuse of social media (Sanusi, 2024). As a result, technology is frequently positioned as a mere presentation aid rather than a value-conscious educational medium. Simultaneously, technology is often regarded as a mere presentation tool rather than a valuable instructional resource. Islamic education teachers face a twofold expectation: to excel in digital pedagogy while acting as ethical role models in technology use, frequently without a sufficient decision-making framework (Ma'mun et al., 2025). From a teacher-education perspective, this intersects with the distinction between a license to teach and a purpose for teaching, emphasizing faith and public good as the core of pedagogical praxis (Succarie, 2024). At this juncture, the need for technological competence integrated with the other competency domains becomes increasingly evident (Arif et al., 2025).

Moreover, the internal problem is not merely a lack of skills but a lack of framing. Teachers struggle to convert digital tools into value-laden instructional practice without an integrative framework that ties technological, pedagogical, and content decisions to Islamic values (Pradonansyah et al., 2025). This framing gap traps instructional strategies at the level of tool operation rather than the design of learning experiences that explicitly cultivate Islamic digital character, such as verification (*tabayyun*), trustworthiness (*amanah*), and excellence (*ihsan*) (Permana and Hasanah, 2024). Consequently, routine classroom decisions, choosing platforms, structuring interactions, providing feedback, or assessing online participation, do not consistently align with the aims of Islamic education. This also explains why teacher performance often appears uneven despite participation in technical training. Thus, even if specific individual weaknesses are addressed, the transformative impact will remain limited if structural factors beyond the teacher, particularly infrastructure, content availability, and curricular design, do not provide adequate support.

External and Curricular Factors: Infrastructure, Content, and Learning Design

At the structural level, the preparedness of smart classrooms is influenced by the availability of devices, the dependability of connectivity, and the provision of ongoing technical assistance (Alfoudari et al., 2023). The literature highlights ongoing infrastructural inequalities between urban and rural schools, including unreliable internet access, insufficient gadgets (interactive projectors, smart screens and cameras), and inconsistent maintenance and device security (Hidayat et al., 2025). The lack of Information and Communication Technology (ICT) technicians or a school helpdesk places a dual load on Islamic education teachers, who are required to instruct while simultaneously addressing technological issues, hence diminishing inventive capabilities

to mere basic presentation usage (Thursina and Rusdi, 2024). Simultaneously, inflexible procurement regulations and inconsistent bring-your-own-device (BYOD) initiatives exacerbate student access disparities (Fioravanti et al., 2024). Collectively, these limitations inhibit the pedagogical potential of technology, rendering the sustainability of smart-classroom innovation challenging even post-teacher training (Pradonansyah et al., 2025).

Aside from hardware, a significant challenge is the accessibility and curation of high-quality, value-aligned digital content for Islamic education (Minarti et al., 2023). Educators frequently depend on resources dispersed throughout public platforms (such as brief films, infographics, and blogs) but encounter issues related to validity, licensing, and alignment of values, stemming from algorithmic recommendation biases and inadequate provenance verification of sources (Sanusi, 2024). The lack of curated repositories and pedagogical-normative information (learning objectives, cognitive levels and virtue indicators) hinders alignment with Islamic education outcomes and the principles of *tabayyun* and *amanah* (Nurhayati et al., 2025). Consequently, instructional time is consumed by content selection and verification, and the quality of learning experiences becomes inconsistent across classes. Even where infrastructure is adequate, a fragile content ecosystem means smart-classroom practice does not automatically carry educational value. This leads to a design question: how can curriculum and lesson design explicitly tether technology to the aims of Islamic education?

In this context, curriculum manuals and lesson plans frequently do not explicitly connect technology utilization with digital character development (Harris and Hofer, 2011). Learning outcomes are primarily cognitive, but affective markers such as *tabayyun*, *amanah*, and *ihsan* are seldom incorporated into rubrics for digital assignments. Without frameworks like TPACK-I, design decisions (platform choice, interaction types, feedback strategies and moderation mechanisms) remain untethered to Islamic values, allowing gamification to drift toward points chasing rather than virtue cultivation. This design gap makes it difficult for teachers to mobilize technology as a medium of Islamic education rather than a mere technical aid. Accordingly, misalignment across infrastructure, content, and curriculum configures a context that directly affects the quality of students' learning experiences and the overarching mission of Islamic education.

Implications for Learners and the Mission of Islamic Education: Moral Crisis and Dehumanization

Internal constraints (skills and attitudes) and external curricular constraints (infrastructure, content, and design) directly affect students' learning. Unfiltered information flows make students more likely to believe false information, hoaxes, and hate speech that are common on social media (Kurniawan and Annisah, 2025). In smart classrooms, teachers and students who are not very proficient at using technology encourage copy-paste learning and reading shallow materials that make it harder to read

deeply, think critically, and pay attention for long periods (Cladis, 2020). This process leads to information overload and decision fatigue, which means that people often make quick decisions about ethics in cyberspace, checking sources (*tabayyun*), or not sharing sensational news. As a result, the smart classroom could become a loud place that speeds up thinking but slows down the moral and intellectual reflection needed to build beneficial character.

When digital interactions are not designed and moderated with explicit value-consciousness, peer communication slides into cyberbullying, identity-based harassment, and polarization amplified by recommendation algorithms (Sagala and Kandedes, 2024). Weak critical literacy increases the likelihood of echo chambers and filter bubbles, facilitating soft radicalization and gradually strengthening intolerant attitudes through repeated exposure to homogeneous content (Nurhayati et al., 2025). At this point, the mission of Islamic education is impeded: rather than cultivating empathetic sensitivity and the *adab* of dialogue, cyberspace tends to normalize quick-response culture, call-outs, and performative self-assertion. The smart classroom loses its capacity as a safe, value-laden arena for civil discourse without firm pedagogical-ethical intervention (Murtiningsih and Sujito, 2025).

There are more signs of moral decay: a weakening sense of modesty (*haya'*) in digital self-expression; the normalization of self-image manipulation (excessive narcissism); and a drop in honesty (*ṣidq*) and responsibility in online assignments (Sagala and Kandedes, 2024). Weak provenance checking and a culture of forwarding without checking have harmed the integrity of information. Simultaneously, the creation of content prioritizes attracting attention over assisting (Kurniawan and Annisah, 2025). Influencer logic and virality metrics supplant moral authority, diminishing respect for educators and guardians. This trajectory contradicts *tahdhib al-akhlaq* and the notion of *insan kamil*, which require uniformity between conduct in physical and digital realms (Zainudin et al., 2025). In other words, the issue of digital character is not just a lack of skills but also a lack of virtues or the inability to turn values into consistent online habits (Dennis and Harrison, 2021).

The accumulation of these problems culminates in two strategic consequences. *First*, dehumanization of the learning process, technology sets the classroom tempo while pedagogical relationships, meant to cultivate meaning, empathy, and habituation of adab, are pushed to the margins. *Second*, role reduction of teachers, Islamic education teachers risk being recast as device operators and workflow managers rather than moral navigators who guide value-laden digital decision-making. If left unaddressed, the drift from the soul's formation to merely technical content transfer will harden, distancing the smart classroom from the aims of Islamic education. Hence, a suite of revitalization strategies is required, beginning with role reorientation and adoption of the TPACK-I framework,

followed by project-based pedagogical designs and ecosystem strengthening, so technology once again serves humanizing purposes and character formation.

Revitalizing the Role of Islamic Religious Education Teachers in Society 5.0 Era

The first step in revitalizing the role of Islamic religious education teachers in the Society 5.0 era is to reconfigure their professional identity from mere device managers to moral navigators, figures who guide every digital decision according to the aims of Islamic education, and humanizers of technology who ensure that tools consistently serve human dignity (Permana and Hasanah, 2024). This reorientation operates through three vantage points: the telos of Islamic education that affirms *akhlaq* formation as the primary outcome; the human-centered impact on learning processes and relationships; and the social usefulness of students' digital products/footprints. In the classroom, this identity is enacted when teachers serve as content curators (verifying provenance and value congruence) (Kessler, 2021), ethics mediators (mapping digital options to the principles of *tabayyun*, *amanah*, and *ihsan*) (Nurhayati et al., 2025), architects of interaction (designing respectful online dialogue), and models of digital hygiene (privacy, security, and responsible digital footprints) (Engeness, 2021). With this renewed identity, technology ceases to be the focal point and returns to its proper place as a medium for attaining ethical–spiritual competencies.

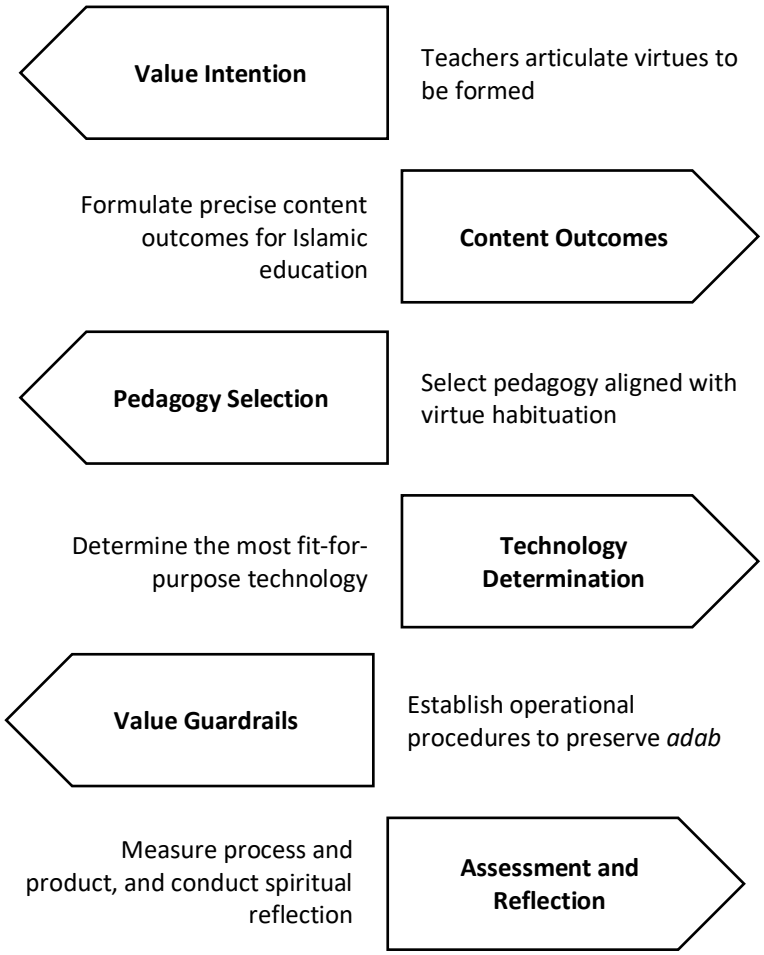
As a core strategy, the TPACK-I framework provides an operational decision map that explicitly binds technology, pedagogy, content, and Islamic values. Implementation begins with value intention, wherein teachers articulate the virtues to be formed, such as cultivating *tabayyun* when studying the Qur'an or Hadith. This is followed by formulating precise content outcomes for Islamic education (Arlinda, 2024), selecting pedagogy aligned with virtue habituation, such as PjBL or inquiry (Hinnant-Crawford et al., 2024), and determining the most fit-for-purpose technology (minimalist), such as LMS forums or micro-videos. Next, value guardrails are established as operational procedures that preserve *adab*: mandatory source verification, civility rules in dialogue, and citation standards as a form of scholarly *amanah*. The sequence closes with assessment and reflection: rubrics that measure both process and product (Coertjens et al., 2021), alongside sessions of spiritual reflection (*muhasabah*) to connect students' digital experiences with intention and character (Farhan, 2025). Every technical choice is automatically tethered to a moral compass through this structured flow.

At the classroom practice level, pedagogical strategies such as PjBL, blended-flipped learning, and gamification become effective when their success indicators are explicitly tied to *akhlaq* formation. PjBL, for instance, can direct students to produce valuable digital footprints by poster campaigns on *tabayyun* or short *da'wa* videos, where the end-to-end process teaches verification, and public responsibility. Flipped learning can place basic content consumption in the pre-class phase, such as micro-videos on honesty and rectifying intention, allowing synchronous time (face-to-face or virtual) to focus on

ethical coaching and civil dialogue practice (Tian and Tsai, 2021). Likewise, gamification should prioritize virtue attainment to evaluate student-produced content's quality and positive impact.

Figure 2.

TPACK-I Framework Implementation



Note. Figure processed by the authors (2025).

Naturally, these pedagogical strategies will remain fragile without a supportive ecosystem. The LMS must be configured to be value-safe at the technological layer by implementing content moderation queues and hate-speech filters. At the content layer, schools should build curated repositories of Islamic education materials equipped with pedagogical–normative metadata (learning objectives and virtue indicators) so that teachers do not start from scratch (Askar et al., 2025). At the collaboration layer, the tri-center synergy (school, home, and community) needs to be operationalized through a parental digital covenant between parents and students, joint literacy workshops with moderate communities, and clear incident-response SOPs, such as for cyberbullying or

hoaxes, to close dehumanization gaps while educating the learning community (Hutchison et al., 2020).

For sustainability, implementation should follow a pilot-evaluate-iterate cycle. Teacher-side indicators include improved TPACK-I competence, higher quality of value-anchored lesson designs, and consistent digital role modelling. Student-side indicators include a digital-character index, the quality of produced digital footprints, and analyses of substantive (not merely frequent) LMS participation. Assessment instruments should be varied, combining rubrics, reflective journals, and incident logs for ethical cases (Coertjens et al., 2021). These evaluation data then inform lesson study or action research to refine designs, prune unnecessary tools, and strengthen the interventions that most impact students' character.

Conclusion

This study indicates that instructors of Islamic religious education in Society 5.0 smart classrooms have several problems in imparting digital character education. These challenges originate from both internal and external causes within the classroom. The primary issues are the deficiency of digital competencies and the prevalence of conventional teaching methods. The issues are exacerbated by disparities in infrastructure and the absence of curated digital Islamic educational resources. The combined implications are profound: heightened student vulnerability to moral crises online, such as radicalization and dehumanization, and the risk that Islamic religious education teachers' roles are reduced to mere technical operators. As a response, the study recommends a role reorientation toward teachers as moral navigators, supported by a value-anchored digital pedagogy framework such as TPACK-I, together with implementing innovative methods, including Project-Based Learning (PjBL) and Flipped Learning.

The study substantially enhances understanding by offering a thorough synthesis that connects the Society 5.0 discourse, smart-classroom pedagogy, and the character-building objectives of Islamic education, which are usually considered separately. It enhances comprehension of how technology can be effectively integrated without undermining fundamental Islamic beliefs. The study's primary practical contribution is the development of operational pedagogical strategies that integrate universal digital citizenship with Islamic normative principles, such as verification (*tabayyun*) and trustworthiness (*amanah*), ensuring that technology consistently supports the fundamental objectives of Islamic education (moral and character development).

The study's primary limitation is its classification as a solely descriptive-analytical literature review. All the problems and solutions are theoretical combinations of what we already know and have not been tested in real Indonesian Islamic religious education smart classrooms. Therefore, further research is strongly recommended to validate and

assess the effectiveness of the proposed frameworks and strategies. Subsequent research should incorporate action research or multi-site case studies within educational institutions to apply the suggested pedagogical frameworks and assess their direct influence on students' digital character development.

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