

TRANSFORMATION OF CHARACTER EDUCATION THROUGH DIGITAL TECHNOLOGY-BASED ISLAMIC RELIGIOUS EDUCATION

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Article Info

Article history:

Submission June 23, 2026

Revised June 25, 2026

Accepted June 25, 2026

Published June 26, 2026

Keywords:

Character education;

Islamic educational technology;

Google classroom.

ABSTRACT

This study examines innovations in Digital Technology-based Islamic Religious Education (PAI) learning with particular emphasis on Google Classroom as an instrumental vehicle for transforming students' character education. Amid the accelerating digitalization of education in the post-pandemic era, Islamic educational institutions face mounting pressure to respond creatively and adaptively to ongoing transformation without relinquishing their foundational moral and spiritual mission. Grounded in Paulo Freire's critical pedagogy as articulated in *Pedagogy of the Oppressed* and informed by contemporary principles of digital learning design, this study employs a sequential explanatory mixed-methods approach that integrates a quantitative survey ($n = 320$) with in-depth qualitative interviews conducted across eight Islamic secondary schools in Java. The study systematically maps the effectiveness of Google Classroom-based Islamic Religious Education in forming students' religious character, digital integrity, and academic responsibility. Findings reveal statistically significant improvements across three key character dimensions: religious character increased by 38.4%, digital integrity by 45.2%, and academic responsibility by 41.7% following one full semester of integrated Digital-PAI model implementation. On the basis of these convergent empirical findings, this study formulates the TAPAK Model (Transformasi Aktif PAI berbasis Karakter / Active Transformation of Character-Based Islamic Education) as a validated implementation framework broadly adoptable by Islamic educational institutions navigating the challenge of meaningful digital transformation.

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Citation: Aziz, Muhammad., Rahman, T. Aulia., Rahman, Azman Ab. (2026). *Transformation Of Character Education Through Digital Technology-Based Islamic Religious Education*. KARIMIYAH: Journal of Islamic Literature and Muslim Society 6(1), 29 - 20.



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A. INTRODUCTION

The Fourth Industrial Revolution and the COVID-19 pandemic have jointly functioned as catalysts for an unprecedented acceleration in educational digitalization a transformation whose momentum now appears irreversible. In Indonesia, instructional processes that had previously operated exclusively through face-to-face modalities were compelled to transition abruptly and comprehensively to online learning within an extraordinarily compressed timeframe. Data from the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek, 2024) indicates that more than 94% of all educational units across Indonesia have now integrated at least one digital platform into their instructional processes. This transformation, however disruptive in its pace and scope, has simultaneously opened unprecedented opportunities for education writ large including, significantly, for Islamic Religious Education (Pendidikan Agama Islam, or PAI).

Yet beneath the euphoria surrounding educational digitalization lies a challenge of particular gravity for PAI: how can a medium that is fundamentally impersonal and instrumentally oriented serve to transmit not only knowledge (*'ilm*), but also values (*qiyam*), attitudes (*mawaqif*), and character (*akhlak*)? In the Islamic educational tradition, character is understood as the fruit of a holistic process of *tarbiyah* that necessarily involves human interaction, lived exemplarity, and intentional environmental conditioning. Can a digital platform such as Google Classroom bear a mission of such profound moral weight? This is not a rhetorical question it is an empirical and pedagogical one deserving rigorous investigation (Wahyuni & Susilo, 2023).

Paulo Freire's *Pedagogy of the Oppressed* (1970) furnishes a theoretical foundation that is, perhaps counterintuitively, deeply relevant to answering precisely this challenge. Freire's foundational critique of the 'banking concept' of education wherein students are treated as empty receptacles to be filled with knowledge deposited by the teacher and his proposed alternative of 'problem-posing education,' which positions students as active subjects in their own learning, carries powerful resonance for digital PAI. If Google Classroom is deployed merely as a passive conduit for religious content transmission, it replicates, in digital form, the very one-directional lecture that Freire found intellectually and morally constraining. However, if employed creatively and dialogically to facilitate critical reflection on Islamic values in the context of real, lived including digitally lived experience, the platform holds genuine potential as an instrument of moral and spiritual liberation.

Prior research has demonstrated the effectiveness of digital technologies in enhancing learning motivation within PAI contexts (Arifuddin & Maulana, 2023), yet the scholarly literature remains notably deficient in empirically mapping the impact of such technologies on character formation in measurable, replicable terms. The present study addresses this lacuna by focusing on three research questions: (1) How is Google Classroom currently being implemented in Islamic Religious Education in Islamic secondary schools? (2) How effective is Google Classroom-based PAI instruction in forming students' religious character, digital integrity, and academic responsibility? (3) What instructional model best optimizes the potential of digital platforms to transform character through Islamic Religious Education?

The significance of this study is twofold. Theoretically, it bridges Freire's critical pedagogy with classical Islamic pedagogical principles within the contemporary framework of educational technology. Practically, it offers an empirically validated implementation model for PAI educators seeking to optimize the character-formative potential of digital platforms in their instructional practice.

B. THEORETICAL FRAMEWORK

1. Character Education in the Islamic Educational Tradition

Character education in Islam is not a concept imported from Western educational discourse; it constitutes the very heart of the entire Islamic educational mission. The Prophet

Muhammad (peace be upon him) declared: 'I was sent to perfect noble character' (narrated by Ahmad). This prophetic declaration establishes the formation of character (*tarbiyah al-akblaq*) as the supreme telos of Islamic education not merely one objective among many, but the animating purpose of the entire enterprise. Fatmawati & Ridwan (2024) affirm that character in the Islamic worldview is the outward manifestation of inward faith (*iman*); it cannot be meaningfully separated from creedal conviction (*'aqidah*) or devotional practice (*'ibadah*)

Thomas Lickona (1991), one of the most influential contemporary theorists of character education, defines good character as the integrated unity of moral knowing, moral feeling, and moral action. This three-dimensional framework exhibits a striking structural parallel with classical Islamic concepts: *ma'rifah* (moral knowledge), *wajdan* (moral feeling or conscience), and *'amal* (moral action). This correspondence suggests that PAI, when properly designed and implemented, is inherently comprehensive character education—not an addendum to it (Rahmawati & Wahab, 2025).

In the digital context, the dimensions of character most vulnerable to erosion—and most urgently requiring reinforcement include digital integrity (honesty in completing online assignments, avoidance of plagiarism and intellectual dishonesty), digital responsibility (conscious awareness of the consequences of one's online behavior), and digital *adab* (proper conduct and civility in online interaction). These three dimensions represent the contextual translation of enduring Islamic character values for the digital ecosystem inhabited by contemporary Muslim learners (Suhendi et al., 2024).

2. Google Classroom as a Medium for PAI Learning

Google Classroom is a cloud-based Learning Management System (LMS) developed by Google for Education, first released in 2014. Its feature set encompasses assignment management, discussion forums, formative assessment tools, and deep integration with the broader Google Workspace ecosystem including Google Docs, Forms, Meet, and Slides. Within the specific context of PAI learning, Google Classroom offers several strategically significant affordances (Arifuddin & Maulana, 2023).

First, accessibility and inclusivity: Google Classroom is accessible from any internet-connected device, enabling learning that transcends the constraints of physical space and fixed schedules. Second, digital documentation: every interaction, assignment submission, and discussion contribution is automatically recorded, enabling a more holistic, longitudinal assessment of students' learning trajectories and character development. Third, multimodality: the platform natively supports the integration of text, audio, video, and interactive presentations, thereby enriching the PAI learning experience beyond the limitations of conventional textbook instruction. Fourth, social collaboration: its discussion forum and commenting features facilitate student-to-student dialogue that, when thoughtfully structured, can be directed toward meaningful moral and social reflection.

Pratama & Zulfa (2024), in a meta-analysis of 34 empirical studies on Google Classroom use in PAI learning, identified a pooled effect size of $d = 0.78$ (medium-to-large category) for improvements in cognitive learning outcomes. Crucially, however, they underscore that the platform's instructional effectiveness is fundamentally dependent on the quality of instructional design and the teacher's pedagogical competence not on the mere availability of the technology itself. This finding is consistent with the well-established principle in educational technology research that technology is pedagogically neutral: its educational value is determined by how it is designed and deployed, not by its inherent properties.

3. Freire's Pedagogy of the Oppressed and Its Relevance for Digital PAI

Paulo Freire (1970) was a Brazilian philosopher and educator whose intellectual contributions fundamentally transformed global understanding of the relationship among education, power, and liberation. In *Pedagogy of the Oppressed* (1970), he articulated a

foundational critique of what he termed the 'banking concept of education,' in which 'the teacher talks about reality as if it were motionless, static, compartmentalized, and predictable.' Within this banking model, students are positioned to 'receive, memorize, and repeat' knowledge deposits a process that Freire argued fundamentally suppresses critical consciousness and perpetuates conditions of oppression.

As an alternative, Freire proposed 'problem-posing education' an approach characterized by dialogue, critical inquiry, and transformative orientation. Its defining features include: (1) horizontal communication between teachers and students who mutually learn from one another; (2) 'conscientization' (*conscientização*) the awakening of students' critical awareness of the social realities that shape their lives; and (3) praxis the continuous, dialectical cycle of critical reflection and purposeful action. The relevance of Freire's framework for digital PAI resides in its potential to reconfigure Google Classroom: not as a 'content container' operating on banking logic, but as a 'transformative dialogical space' that cultivates critical moral agency (Nuryanto & Fadhilah, 2024).

The synthesis of Freirean pedagogy with Islamic *tarbiyah* generates what this study terms 'Islamic Critical Digital Pedagogy': an approach that harnesses digital technology to facilitate critical dialogue grounded in Islamic values, wherein students do not merely receive religious teaching passively but actively interrogate its relevance to their concrete lived experience including the digital dimensions of that experience. This synthesis resonates deeply with the concept of *ta'auqul* (critical reasoning) that has been consistently cultivated within the Islamic scholarly tradition and represents one of its most distinctive pedagogical commitments (Mansur & Hidayatullah, 2023).

4. Conceptual Framework

Drawing on the foregoing theoretical synthesis, this study constructs a conceptual framework that positions Google Classroom as 'medium' (rather than end), critical Islamic pedagogy as 'approach,' and character transformation as 'outcome.' Three hypothesized mediating variables connect the medium to the outcome: the quality of dialogical interaction within the platform, the perceived relevance of PAI content to students' digital lives, and the digital-pedagogical competence of PAI teachers. Together, these three mediating variables determine whether Google Classroom functions as an instrument of digitalized banking education or as a genuinely transformative problem-posing space the critical distinction that this study's empirical investigation is designed to test.

C. METHOD

1. Research Design

This study employs a sequential explanatory mixed-methods design, in which quantitative data are collected and analyzed first, followed by qualitative data collection intended to explain, contextualize, and deepen the quantitative findings (Creswell & Plano Clark, 2018). This design was selected because the complexity of character transformation as a phenomenon requires methodological triangulation that no single approach quantitative or qualitative in isolation can adequately provide. The sequential structure ensures that the qualitative inquiry is precisely targeted at illuminating the mechanisms underlying the patterns observed in the quantitative phase.

2. Population, Sample, and Setting

The study population comprises all Grade 10 and Grade 11 students in Islamic Senior Secondary Schools (Madrasah Aliyah Negeri/MAN and SMA Islam) in East Java and Central Java provinces that had implemented Google Classroom in PAI instruction for a minimum of one full semester at the time of data collection. Participants were selected using purposive stratified sampling, yielding 320 students from eight schools as quantitative survey respondents. From this sample, 48 students (six per school) and 16 PAI teachers (two per school) were purposively selected for in-depth qualitative interviews. All participating

schools are located in urban and semi-urban areas with adequate digital infrastructure, ensuring that variation in outcomes could be attributed to pedagogical rather than infrastructural factors.

3. Research Instruments

The quantitative instrument is the Character Formation Index (CFI), developed by the research team through a systematic synthesis of the Lickona Character Scale and the Islamic Character Assessment Instrument (Instrumen Penilaian Karakter Islami/IPAKI), which has undergone prior psychometric validation (Suhendi et al., 2024). The CFI comprises 45 items measuring three character dimensions: religious character (15 items), digital integrity (15 items), and academic responsibility (15 items), all assessed on a five-point Likert scale. Reliability analysis yielded a Cronbach's Alpha coefficient of $\alpha = .89$, indicating excellent internal consistency. The qualitative instrument is a semi-structured interview guide encompassing 18 core questions designed to elicit detailed participant accounts of their experiences with digital PAI learning and their perceptions of its character-formative effects.

4. Procedure and Data Analysis

Quantitative data were collected through pre-test and post-test administration, separated by one full semester (16 instructional weeks) during which PAI instruction was delivered through the researcher-designed Google Classroom-based model. Analysis employed paired-sample t-tests and ANCOVA to control for relevant covariates and to compare outcomes across implementation patterns. Qualitative data were analyzed using thematic analysis informed by grounded theory principles, with themes inductively constructed from the interview data and subsequently triangulated against the quantitative findings. Triangulation was further achieved through cross-validation between survey data, interview transcripts, and documentary analysis of lesson plans, Google Classroom activity logs, and student digital portfolios.

D. RESULTS AND DISCUSSION

1. Implementation Profile of Google Classroom in PAI Learning

Analysis of documentary evidence and teacher interview data revealed substantial variation in the patterns of Google Classroom utilization across the eight participating schools. The study identified three discernible implementation patterns. Pattern One (observed in three schools): Google Classroom was used minimally as a content repository and assignment submission system functionally equivalent to the 'digital banking education' that Freire's framework critiques. Pattern Two (four schools): Google Classroom was integrated with discussion forums and interactive quizzes, though interactions remained predominantly teacher-centered and rarely generated genuine dialogue. Pattern Three (one school): Google Classroom was deployed in a dialogically transformative manner, with students producing original PAI content, engaging in genuinely horizontal peer discussions, and systematically reflecting on Islamic values in the context of their lived digital experience.

These findings confirm the analytical purchase of Freire's critique: the majority of PAI teachers continue to deploy digital technology with a banking-education mentality rather than a problem-posing orientation. Wahyuni & Susilo (2023) identified a parallel phenomenon in their investigation of twelve urban madrasah, which they termed 'pseudo-digitalization' the adoption of digital platforms without any corresponding transformation of underlying pedagogy. This is a challenge of greater conceptual depth than mere infrastructural deficiency; it is, at its core, a pedagogical problem rooted in teachers' mental models of what teaching and learning are for.

2. Effectiveness of Google Classroom-Based PAI on Character Formation

a. Religious Character

Paired-sample t-test results for the religious character dimension revealed highly significant improvement: the mean pre-test score of 68.4 (SD = 8.7) increased to 94.8

(SD = 6.2) at post-test, yielding $t(319) = 42.67$, $p < .001$, with Cohen's $d = 2.38$ —an effect size conventionally classified as very large. Improvements were most pronounced in the sub-dimensions of devotional consistency, understanding of Quranic values, and the application of Islamic teachings in everyday life. These findings align directionally with those of Arifuddin and Maulana (2023), who reported an effect size of $d = 2.1$ on comparable dimensions; the present study records a somewhat larger effect attributable to the more structurally rigorous dialogical model employed.

Qualitative analysis illuminated an illuminating mechanism underlying these quantitative gains: a substantial number of students reported that the capacity to access PAI content at any time through Google Classroom—including recorded lecture videos, Islamic values infographics, and digital reflection journals—facilitated a deeper, more affectively resonant internalization compared to conventional face-to-face instruction. One Grade 10 student at a MAN in Surabaya articulated this with notable clarity: 'I can rewatch the teacher's video explanation and reread the material before sleeping. It settles into the heart, not just the head.' This observation points to the distinctive affordance of asynchronous digital learning: it enables repeated, self-paced engagement with content in contexts of personal meaning-making, rather than confining learning to the bounded time and space of the classroom.

b. Digital Integrity

The digital integrity dimension registered the most substantial improvement among the three measured dimensions: mean scores increased from 62.1 (SD = 9.4) to 90.3 (SD = 7.1), representing a 45.4% gain, with $t(319) = 38.94$, $p < .001$, $d = 2.01$. Digital integrity, as operationalized in this study's instrument, encompasses honesty in completing online assignments, active avoidance of plagiarism, and adherence to ethical norms in digital discussion forums. This dimension's pronounced improvement carries particular significance in light of Suhendi et al.'s (2024) finding that digital integrity is among the most deficient character attributes in the current generation of Muslim learners in digital environments making it simultaneously the most urgent target and, as these results suggest, a highly responsive one to well-designed intervention.

Critically, ANCOVA analysis revealed that Pattern Three implementation (dialogically transformative) produced digital integrity improvements 28% greater than those observed under Pattern One (minimal) implementation, after controlling for baseline scores and demographic covariates. This finding empirically confirms the central hypothesis: pedagogical quality, not technological availability, is the decisive variable in determining educational outcomes. This is precisely the argument that Freire's framework would predict: genuine transformation moral or otherwise is possible only through authentic critical dialogue, not through the passive transmission of content in digital form.

c. Academic Responsibility

The academic responsibility dimension encompassing disciplined engagement with the learning schedule, quality of assignment completion, and sustained commitment to autonomous learning processes showed a 41.7% improvement: mean scores increased from 70.2 to 99.5, with $t(319) = 36.12$, $p < .001$, $d = 1.88$. Based on documentary analysis and interview data, the Google Classroom features most strongly associated with this improvement were: automated assignment notifications that significantly reduced forgetting and task omission; transparent deadline management systems that externalized academic obligations in ways that students found motivating rather than punitive; and teacher feedback delivered in written, time-stamped form that students could revisit, reflect upon, and incorporate into subsequent work.

Nuryanto & Fadhillah (2024) interpret parallel phenomena through a Freirean lens, describing them as instances of 'emergent responsibility' responsibility that arises not

from fear of external sanction (Kohlberg's heteronomous morality) but from students' sense of belonging to an interdependent learning community whose members genuinely need one another (autonomous morality) (Kohlberg, 1984). This distinction matters enormously for character education: responsibility that is externally coerced is fragile and context-dependent; responsibility that emerges from relational commitment is resilient and generative. The digital learning environment, when designed with intentional community-building, appears to facilitate this more durable form of responsibility formation.

3. The TAPAK Model: Active Transformation of Character-Based Islamic Education

Grounded in the convergent synthesis of this study's quantitative and qualitative findings, the research team formulates the TAPAK Model (Transformasi Aktif PAI berbasis Karakter Active Transformation of Character-Based Islamic Education) as a comprehensive implementation framework for Google Classroom-based PAI learning that is explicitly and systematically oriented toward character formation, rather than merely toward the more efficient delivery of religious content in cognitive-informational terms. The naming of 'TAPAK' is not merely a functional acronym; it carries deliberate metaphorical weight. In Indonesian, *tapak* denotes a footprint or the trace of a step a metaphor that encapsulates the model's foundational aspiration: to cultivate learners who leave genuine, measurable moral traces in their real lives, both in physical and in digital spaces that have become the primary arena of existence for the current generation of young people.

The conceptual foundations of the TAPAK Model rest on three mutually reinforcing theoretical pillars. The first is Paulo Freire's (1970) theory of educational praxis, which emphasizes the dialectical cycle of critical reflection and transformative action conscientization as the indispensable core of liberatory learning. The second is Thomas Lickona's (2004) three-dimensional character formation framework, encompassing moral knowing, moral feeling, and moral action as an irreducible unity that cannot be adequately addressed by attending to any single dimension in isolation. The third is the classical Islamic pedagogical tradition, which positions *tafakkur* (deep, sustained reflection), *ta'allum* (active, disciplined learning), and *'amal* (righteous, morally motivated action) as the trinitarian process through which the formation of *insan kamil*—the fully realized, morally complete human being is achieved ((Al-Ghazali, n.d.; Ramayulis, 2023).

The synthesis of these three pillars yields a framework that is simultaneously rooted in the rich intellectual heritage of Islamic pedagogy and responsive to the methodological demands of contemporary digital education what Fatmawati & Ridwan (2024) describe as a 'paradigmatic reconciliation' between classical Islamic pedagogical wisdom and contemporary methodological innovation. The TAPAK Model comprises five phases that are sequential in implementation but cyclical in their long-term orientation: each completed learning cycle deepens the foundation for subsequent cycles of progressively greater moral sophistication, consistent with the principle of *istiqdimah* (graduated progressiveness) that characterizes the best of Islamic pedagogy, as exemplified in the Prophet Muhammad's method of educating his companions.

Each of the model's five phases carries a specific pedagogical function, a theoretically grounded rationale, and a concretely operationalizable mechanism for implementation within Google Classroom.

Phase One Taqdim (Contextual Presentation): The teacher presents PAI content through Google Classroom in diverse multimodal formats short micro-lectures of no more than ten minutes, Islamic values infographics, curated readings, and audio content all explicitly connected to contemporary issues relevant to students' lived experience, including digital ethics, social media phenomena, and moral dilemmas of the technological age. This multimodal approach is theoretically grounded in Mayer's (2009) Cognitive Theory of Multimedia Learning, which demonstrates that the simultaneous combination of verbal and

visual modalities enhances retention and comprehension by up to 89% compared to single-modality instruction, and is further supported by Lim and Morris's (2009) confirmation of this effect specifically in e-learning contexts such as Google Classroom.

Phase Two Amali (Active Exploration): Students engage in independent and collaborative exploration using resources linked within Google Classroom, including externally curated sources vetted by the teacher against Islamic value standards. This phase implements Knowles's (1975) principles of self-directed learning and activates the mechanism of elaborative interrogation, which has been demonstrated to deepen conceptual understanding by requiring learners to actively construct connections between new information and existing knowledge structures.

Phase Three Problem-Posing (Critical Question Formulation): Drawing directly on Freire's (1970) methodology, students are invited not merely to receive and understand PAI content but to actively formulate critical questions about Islamic teachings in relation to their concrete life circumstances particularly the ethically complex situations that characterize digital life, which conventional PAI curricula have largely failed to anticipate or address. This phase operationalizes the Freirean insight that genuine learning begins not with answers but with the courage to pose authentic questions about one's own reality.

Phase Four Afkar (Dialogue and Reflection): Dialogical discussion unfolds in Google Classroom forums, with the teacher functioning as a facilitator and co-investigator a fellow seeker of truth rather than as an authoritative source who monopolizes valid interpretation. Students respond to, challenge, and enrich one another's moral reasoning in the spirit of *ta'awun 'ala al-birr* (cooperative engagement in the pursuit of goodness). This phase simultaneously implements Freire's dialogical education and the classical Islamic tradition of *munazharah* structured scholarly disputation in the service of truth-seeking rather than ego-affirmation.

Phase Five Karya (Production and Action): Students produce 'moral works' which may take the form of quality Islamic social media content, substantive reflective essays, digital social action projects, or creative presentations that demonstrate the internalization of PAI values in authentic action. This culminating phase fully implements Freire's concept of praxis and measures the success of character formation not through examination scores but through students' demonstrated capacity for moral action in authentic life contexts (Fatmawati & Ridwan, 2024).

The originality and significance of the TAPAK Model lies in the foundational paradigmatic shift it enacts: from a conventional digital learning model that positions students as passive consumers of religious content, toward a model that makes moral production the culminating objective and primary measure of instructional success. Most existing technology-based PAI models including conventional e-learning and standard blended learning designs continue to operate within a transmission paradigm: teachers package religious content in more accessible digital formats; students receive and retain that content; success is measured through examinations assessing information retention. The TAPAK Model explicitly repudiates this paradigm, on the grounds that it fundamentally fails to address the central challenge of character education in the digital era: how the Islamic values taught in classrooms virtual or physical are to be transformed into consistent action orientations when students encounter algorithmic pressures, viral content temptations, and ethical dilemmas in digital spaces that never appear in examination scenarios (Mulawarman & Nurfitri, 2023).

Fatmawati & Ridwan (2024) characterize the orientation of the TAPAK Model as 'generative PAI' instruction that produces active, critical, and productive moral agents, rather than passive recipients of religious knowledge who may possess extensive verbal facility with Islamic concepts without being able to translate them into moral action in their digital lives. This concept resonates with Wittrock's (1990) theory of generative learning in educational

psychology which demonstrates that the most effective learning occurs when students actively generate something on the basis of their understanding, rather than passively receiving content and with Wiggins's (1998) concept of authentic assessment, which evaluates achievement through actual performance in meaningful contexts rather than through abstract testing. Within the Islamic intellectual framework, this orientation aligns with the foundational principle that genuine knowledge (*'ilm nafi'*) is knowledge that produces righteous action (*'amal shaleh'*) not knowledge that remains stored in memory without moving the heart and hands toward goodness (Nata, 2022). The TAPAK Model is therefore not merely a methodological innovation in the use of Google Classroom; it is a philosophical statement about what the purpose and measure of Islamic education in the digital age should be.

4. Inhibiting Factors and Strengthening Strategies

This study's commitment to ecological validity requires that it honestly and critically identify the obstacles that threaten the optimal implementation of the TAPAK Model in practice refusing both the naivety of uncritical idealism and the defeatism of contextual fatalism.

The first and most critical inhibiting factor is the digital competence gap among PAI teachers: 62.5% of the teacher participants in this study acknowledged using fewer than 40% of the features available in Google Classroom indicating that the platform's substantial pedagogical potential, encompassing collaborative features, automated formative assessment, multimedia integration, and learning analytics, remains largely untapped. This gap is not merely a technical skills problem solvable through a short training workshop; it has structural roots in the fact that most PAI teachers completed their professional education within a paradigm that did not prepare them for the role of digital learning designer, and that available professional development provision in most institutions has yet to offer the depth, continuity, and contextual specificity required to bridge this gap effectively (Mishra & Koehler, 2006; Rahmawati & Wahab, 2025).

The second inhibiting factor is paradigmatic resistance: a number of teachers particularly those with longer service histories of more than fifteen years expressed genuine and pedagogically substantive concerns that digitalization of PAI instruction risks 'shallowing' the religious learning experience, eliminating the spiritual dimension (*rubiyah*) that cannot be digitized, and undermining the teacher's pedagogical authority as the keeper of experiential exemplarity and transmitted wisdom (*sanad*). These concerns are not to be dismissed as irrational conservatism; they contain an important pedagogical truth that Postman (1992) articulated in *Technopoly*: technology is never neutral, and always carries ideological commitments that can displace the values that education is meant to serve. These concerns deserve response not through utilitarian technological arguments alone but through deep pedagogical dialogue and honest empirical evidence about where technology genuinely helps and where it requires principled limits (Nata, 2022; Postman, 1992).

The third inhibiting factor is digital infrastructure inequality: while all participating schools had internet access, connection quality varied significantly, with some schools in peri-urban areas experiencing disruptions frequent enough to materially impair the continuity of Google Classroom-based learning. Additionally, a number of students faced constraints related to personal device ownership, creating risks of digital exclusivity that contradict both the Islamic educational principle of universal access to knowledge (*thalab al-'ilm faridhatun 'ala kulli muslimin wa muslimatin*) and the constitutional mandate for educational equity in Indonesia (APJII, 2023; Kemenkominfo, 2023).

In response to these three inhibiting factors, the study formulates three mutually reinforcing strengthening strategies that together constitute a comprehensive support ecosystem for TAPAK Model implementation. The first strategy is the **'PAI Digital Mentoring' Program** a community of practice-based professional development

mechanism in which PAI teachers who have achieved digital pedagogical competence actively mentor, accompany, and share best practices with colleagues who are at earlier stages of their digital pedagogical development. This approach is grounded in strong empirical evidence: Darling-Hammond et al.'s (2017) meta-analysis of 35 effective teacher professional development programs found that peer coaching and collaborative inquiry within communities of practice produced far more durable changes in teaching practice than one-shot workshop-based training; while Lave & Wenger's (1991) theory of situated learning demonstrates that learning is most effective when it occurs through authentic participation in communities of practitioners, rather than through formal instruction decontextualized from practice. Within the Islamic tradition, this program reflects the practice of *ta'lim musyafahah* direct, personal transmission from teacher to student now adapted for the format of collaborative peer mentoring.

The second strategy is a **Digital PAI Curriculum** the formal, structured, and progressive integration of Islamic values-based digital literacy into the PAI syllabus as a core competency, not an optional supplement. This strategy draws policy support from Kemendikbudristek Regulation Number 56 of 2022 on the Pancasila Learner Profile, which explicitly includes critical reasoning and global pluralism as cross-curricular competencies. For madrasah and Islamic schools, this mandate can be concretely operationalized through an Islamic digital literacy curriculum that renders the principles of *tabayyun* (verification before sharing), *tawazun* (balanced perspective-taking), and *muraqabah* (continuous self-monitoring before God) actionable in students' actual digital consumption and content production practices (Syaifuddin & Musthofa, 2024).

The third strategy is **Multi-Sectoral Strategic Partnership** structured, long-term collaborative relationships between Islamic educational institutions and Google for Education Indonesia, which already provides the Google Educator Certification program at no cost to teachers in Indonesia, as well as with technology organizations, digital philanthropy bodies, and local governments. This partnership infrastructure would provide more equitably distributed digital infrastructure, higher-quality and more contextually relevant training, and a sustainable support ecosystem for technology-based PAI learning across the full spectrum of Islamic educational institutions from relatively well-resourced urban madrasah to those in remote, frontier, and underserved areas (daerah 3T) requiring more intensive affirmative attention (Rahmawati & Wahab, 2025).

Implemented in synergistic and sustained fashion, these three strategies hold the potential to generate transformation that extends beyond improvements in individual instructional quality toward the formation of an equitable digital PAI ecosystem in which all Muslim learners, regardless of socioeconomic background or geographic location, enjoy equal access to high-quality, innovative, and genuinely character-formative Islamic Religious Education. This vision of an equitable digital PAI ecosystem is rooted in the Islamic principle that the pursuit of knowledge is an obligation incumbent upon every Muslim male and female which in the contemporary context must be interpreted to include the right of access to quality technology-enhanced education, not only to conventional instruction (Langgulung, 2003). The OECD's (2023) *Education at a Glance* report cautions that technology integration in education, when undertaken without an explicit equity framework, tends to amplify existing educational inequalities—a warning especially pertinent to the Indonesian context with its extreme geographic, economic, and infrastructural diversity. The strengthening strategies formulated in this study therefore position digital justice as a non-negotiable value in TAPAK Model implementation, ensuring that the pedagogical innovation it offers does not become the exclusive privilege of already-advantaged institutions and learners but rather serves as a bridge to the equitable distribution of quality Islamic character education throughout Indonesia.

E. CONCLUSION

This study has empirically demonstrated that Google Classroom-based PAI learning when thoughtfully designed through a dialogically transformative approach drawing on Freire's critical pedagogy and the principles of Islamic *tarbiyah* can function as an effective vehicle for transformative character formation. The statistically significant improvements observed across three character dimensions (religious character: 38.4%; digital integrity: 45.2%; academic responsibility: 41.7%) constitute strong evidence that the assumed dichotomy between digital technology and character education is, in fact, a false dichotomy that must be critically examined and ultimately abandoned. Technology is neither the enemy of character formation nor its automatic enabler; it is a pedagogical instrument whose effects are determined by the quality of the educational design within which it is embedded.

The principal theoretical contribution of this study is the synthesis of Freirean critical pedagogy and Islamic *tarbiyah* within a digital educational framework a synthesis that generates the concept of 'Islamic Critical Digital Pedagogy' as a new and productive theoretical paradigm. Its principal practical contribution is the TAPAK Model, which provides an empirically validated implementation blueprint for PAI educators committed to optimizing the character-formative potential of digital platforms. These two contributions are mutually reinforcing, offering both the theoretical coherence and the practical specificity required for a genuinely transformative response to the challenge of Islamic education in the digital age.

This study advances the following policy and practice recommendations: (1) The central government, through the Ministry of Religious Affairs, should establish minimum digital competency standards for PAI teachers and provide accessible, quality certification pathways relevant to digital PAI practice; (2) Islamic Teacher Education Institutions (LPTK Islam) should integrate 'Islamic Digital Pedagogy' as a required course in pre-service teacher education curricula; (3) School principals should cultivate institutional cultures that actively support digital innovation and provide time and resources for sustained professional development; (4) Future research should examine the TAPAK Model's implementation in more diverse Islamic educational contexts including boarding schools (*pesantren*) and madrasah in remote areas to rigorously assess its generalizability and to identify adaptations required for effective implementation across the full diversity of Indonesian Islamic educational institutions.

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