

STRENGTHENING CHARACTER EDUCATION THROUGH DIGITAL LITERACY IN ISLAMIC EDUCATION: EVIDENCE FROM INDONESIA AND THAILAND

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Abstract

This study examines how integrating digital literacy within Islamic education strengthens character education outcomes at SMP Unismuh Makassar, Indonesia, and Phatnawitya School, Thailand. A convergent mixed-methods design guided by the Stake Countenance Model was used to evaluate antecedents, transactions, and outcomes. Quantitative data were collected from 230 students through a 25-item Likert-scale survey measuring digital literacy, Islamic education mastery as a moral-cognitive outcome, and learning habits/self-regulation as a moral-behavioural outcome. Qualitative evidence was obtained from classroom observations, teacher interviews, school documents, and student reflective journals. The findings show that Makassar students scored higher on mastery ($M = 85.27$) and learning habits ($M = 81.44$) than students in Thailand ($M = 77.86$ and $M = 74.32$). Institutional context significantly affected the combined outcomes (Wilks' Lambda = 0.621, $F = 52.883$, $p < 0.001$), explaining variance in mastery ($R^2 = 0.412$) and learning habits ($R^2 = 0.268$). Digital literacy predicted both mastery ($\beta = 0.721$, $p < 0.001$) and learning habits/self-regulation ($\beta = 0.387$, $p < 0.001$). Qualitative findings indicate that digital projects supported value internalization in Indonesia, while teacher-led ethical reflection strengthened adab, tolerance, and respectful communication in Thailand. The study concludes that digital literacy can strengthen character education when it is embedded in Islamic ethical guidance, institutional policy, teacher mediation, and repeated behavioural reinforcement.

Keywords: *Character Education; Islamic Education; Digital Literacy; Digital Ethics; Online Adab; Values-Based Learning.*



Abstrak

Penelitian ini mengkaji bagaimana integrasi literasi digital dalam Pendidikan Agama Islam dapat memperkuat pendidikan karakter peserta didik di SMP Unismuh Makassar, Indonesia, dan Phatnawitya School, Thailand. Penelitian menggunakan desain mixed methods konvergen dengan kerangka Stake Countenance Model yang mencakup dimensi antecedents, transactions, dan outcomes. Data kuantitatif diperoleh dari 230 peserta didik melalui angket skala Likert yang mengukur literasi digital, penguasaan materi Pendidikan Agama Islam sebagai aspek moral-kognitif, dan kebiasaan belajar/regulasi diri sebagai aspek moral-perilaku. Data kualitatif diperoleh melalui observasi kelas, wawancara guru, dokumen sekolah, dan jurnal reflektif peserta didik. Hasil penelitian menunjukkan bahwa peserta didik di Makassar memperoleh skor lebih tinggi pada penguasaan materi ($M = 85,27$) dan kebiasaan belajar ($M = 81,44$) dibandingkan peserta didik di Thailand ($M = 77,86$ dan $M = 74,32$). Konteks kelembagaan berpengaruh signifikan terhadap capaian gabungan (Wilks' Lambda = 0,621, $F = 52,883$, $p < 0,001$) serta menjelaskan variasi penguasaan materi ($R^2 = 0,412$) dan kebiasaan belajar ($R^2 = 0,268$). Literasi digital juga terbukti menjadi prediktor bagi penguasaan materi ($\beta = 0,721$, $p < 0,001$) dan kebiasaan belajar/regulasi diri ($\beta = 0,387$, $p < 0,001$). Temuan kualitatif menunjukkan bahwa proyek digital berbasis nilai memperkuat internalisasi karakter di Indonesia, sedangkan refleksi etis yang dimediasi guru memperkuat adab, toleransi, dan komunikasi santun di Thailand. Penelitian ini menegaskan bahwa literasi digital dapat menjadi strategi penguatan pendidikan karakter apabila diintegrasikan dengan nilai-nilai Islam, kebijakan sekolah, mediasi guru, dan pembiasaan perilaku secara berkelanjutan.

Kata Kunci: *Pendidikan Karakter; Pendidikan Agama Islam; Literasi Digital; Etika Digital; Adab Daring; Pembelajaran Berbasis Nilai.*

INTRODUCTION

The rapid development of digital technologies has transformed how students access information, communicate, and construct meaning in contemporary education (Shamsudinova et al., 2025). Smartphones, social media, and online learning platforms increasingly influence students' learning habits and moral choices, making digital spaces part of their everyday character formation (Ananto & Ningsih, 2020; Bamaga et al., 2025; Ravikumar et al., 2022; Shabur & Siddiki, 2024). This condition requires Islamic education to develop not only technical competence but also ethical judgment, self-regulation, and responsible participation in digital engagement.

Digital literacy is therefore no longer limited to operational ability. It includes the capacity to evaluate information critically, create meaningful content,

communicate respectfully, and participate responsibly in online spaces. Previous research shows that digital literacy can strengthen higher-order thinking when it is supported by reflective learning design (Çebi & Reisoglu, 2020). In moral and religious education, this competence becomes more urgent because students' values and identities are increasingly negotiated through online experiences (Fakhruroji, 2021). Value-based interaction in digital learning can support ethical reasoning when teachers provide structured facilitation and purposeful interpersonal engagement (Mehall, 2020).

This study uses the Stake Countenance Model to evaluate digital literacy integration through three interconnected dimensions: antecedents, transactions, and outcomes. The model is relevant because it allows evaluation to examine not only learning results, but also the institutional conditions and pedagogical processes that shape those results. Prior evaluation studies indicate that institutional context, readiness, and implementation processes are important in explaining differences in educational outcomes (Gopalan & Nelson, 2019; Shabazian, 2020). For this reason, the model is appropriate for analysing how schools integrate digital literacy into Islamic education for character strengthening.

The situational urgency of this study is supported by the growing risks faced by adolescents in digital environments. Students' online activity exposes them to misinformation that may weaken judgment and responsible decision-making (García-Moya et al., 2020). Online interaction may also increase vulnerability to cyberbullying and socio-emotional harm, which can affect students' social ethics and interpersonal behaviour (de Cámara et al., 2021). In addition, harmful or misleading digital content may influence attitudes and behaviour in ways that challenge the goals of moral education. These conditions require Islamic education to connect religious instruction with students' actual digital experiences.

However, previous studies indicate that many schools still separate religious learning from students' digital realities. Islamic education is often delivered normatively without sufficient connection to learners' online practices, thereby reducing its contextual relevance (Fahyuni et al., 2020; Zakiyyah, 2024). Conversely, digital learning is sometimes implemented as technical training without an explicit ethical framework (Nurlela et al., 2025). Teacher readiness also remains a major constraint because educators may lack pedagogical strategies for embedding Islamic values into digital activities in a coherent and sustainable way (Drake & Reid, 2020; Muassomah et al., 2022).

Several studies have offered important directions for integration. Digital learning can encourage reflective communication and ethical participation when students are guided through meaningful interaction (Mehall, 2020). Critical

evaluation tasks can help students assess content responsibly and align digital behaviour with moral values (Çebi & Reisoglu, 2020). Islamic-themed digital content production may reinforce religious identity and moral messaging, while guided online da'wah and moderated digital forums can cultivate responsibility, respectful engagement, and ethical dialogue (Haleem et al., 2022; Turk et al., 2022). Emotional regulation, interpersonal sensitivity, and peer learning also contribute to the internalization of values in digital learning contexts (Aderibigbe et al., 2023; Chanifah et al., 2021).

Despite these contributions, the existing literature still leaves an empirical gap. Many studies discuss digital Islamic education conceptually or focus on single-site implementation, while comparative evidence across different socio-religious contexts remains limited (Muhammad et al., 2021). There is also a need for evaluative studies that connect policy readiness, classroom transactions, and character-related outcomes within one analytical framework (Gopalan & Nelson, 2019; Shabazian, 2020). This gap is important because the success of digital literacy integration may depend not only on technology use, but also on institutional support, teacher mediation, cultural context, and the way Islamic values are embedded in learning activities.

To address this gap, the present study compares two contrasting institutional contexts: SMP Unismuh Makassar in Indonesia and Phatnawitya School in Thailand. SMP Unismuh Makassar represents a Muslim-majority context with a strong Islamic institutional identity and relatively established digital learning support, while Phatnawitya School represents a Muslim-minority context where Islamic education operates within multicultural dynamics and more limited digital infrastructure. This comparison is not intended to generalize statistically to all Islamic schools in both countries, but to provide analytical insight into how different institutional ecologies shape the integration of digital literacy and character education.

The novelty of this study is threefold. First, it examines digital literacy integration by prioritizing character education outcomes rather than focusing only on platform adoption or cognitive achievement. Second, it compares Muslim-majority and Muslim-minority settings to clarify which aspects of value-based digital pedagogy are transferable and which require contextual adaptation. Third, it operationalizes integration through the Stake Countenance dimensions of antecedents, transactions, and outcomes, thereby offering a replicable evaluation pathway for diagnosing readiness, monitoring implementation, and interpreting character-related results in Islamic education.

This study is guided by two research questions: (1) How does the integration of digital literacy within Islamic education strengthen students' character education

outcomes across moral-cognitive and moral-behavioural domains? (2) How do institutional contexts shape the implementation and effectiveness of digital literacy integration for character education in Islamic schools? Accordingly, the study aims to examine digital literacy integration as a context-sensitive strategy for strengthening character education across Indonesia and Thailand, framing technology not merely as an instructional tool but as a medium for nurturing Islamic ethical formation in the digital age.

RESEARCH METHODS

This study used a convergent mixed-methods comparative case study design. Quantitative and qualitative data were collected within the same general period and integrated during interpretation to explain both the magnitude of relationships and the mechanisms behind them. The Stake Countenance Model served as the evaluation framework by organizing the study around antecedents (institutional readiness), transactions (pedagogical implementation), and outcomes (student character-related results).

The research sites were selected purposively as contrasting cases. SMP Unismuh Makassar, Indonesia, was selected because it operates in a Muslim-majority environment with a strong Islamic institutional identity and more established digital learning infrastructure. Phatnawitya School, Thailand, was selected because it operates in a Muslim-minority and multicultural environment where Islamic education is closely connected to adab, tolerance, and social harmony. This purposive selection allows analytical comparison, although it also limits statistical generalization beyond the two sites.

Participants consisted of 230 students aged 13-15 years and 18 teachers. The Indonesian site involved 120 students and 10 teachers, while the Thai site involved 110 students and 8 teachers. Student participants had direct experience with Islamic education and digitally mediated learning. The gender distribution was approximately balanced, and most students came from lower-middle to middle socioeconomic backgrounds based on school-reported information. Teacher participants had experience in Islamic education and/or digital pedagogy.

Quantitative data were collected using a 25-item Likert-scale survey consisting of three constructs: digital literacy (10 items), Islamic education mastery as a moral-cognitive outcome (8 items), and learning habits/self-regulation as a moral-behavioural outcome (7 items). Items measured students' ability to access, evaluate, create, and communicate through digital content responsibly; their understanding and application of Islamic education concepts; and their consistency, discipline, time management, and task completion. The instrument was reviewed by

experts in Islamic education, educational evaluation, and digital pedagogy. A pilot check ensured clarity and contextual appropriateness, and all scales met acceptable reliability (Cronbach's $\alpha > 0.80$). Official Islamic education assessment records were also used as objective support for the mastery construct.

Qualitative data were obtained through teacher interviews, classroom and platform observations, curriculum and policy document analysis, and student reflective journals. These sources captured how digital tools were used, how teachers scaffolded ethical behaviour, how students responded to digital tasks, and how institutional context influenced implementation. The qualitative instruments were aligned with the Stake dimensions to ensure systematic coverage of antecedents, transactions, and outcomes.

Quantitative analysis involved descriptive statistics, assumption testing, multivariate testing, and regression analysis. A multivariate general linear model was used to examine the effect of institutional context on Islamic education mastery and learning habits/self-regulation simultaneously. Effect sizes were interpreted using R^2 and partial eta squared. Regression analysis estimated the contribution of digital literacy to both outcomes, and 95% confidence intervals were used to support interpretation. Qualitative data were analysed thematically through a hybrid approach: deductive coding based on the Stake dimensions and inductive coding for emergent themes such as ethical reflection, digital responsibility, tolerance, and contextual constraints. Three researchers coded the data independently and resolved disagreements through discussion; inter-coder reliability reached $\kappa = 0.82$. Mixed-method integration was conducted through triangulation and cross-case interpretation.

RESULTS AND DISCUSSION

Results

Quantitative Findings

The quantitative analysis examined whether digital literacy integration in Islamic education strengthens character education outcomes in two domains: moral-cognitive outcomes, represented by mastery of Islamic education material, and moral-behavioural outcomes, represented by learning habits/self-regulation. Table 1 presents the descriptive statistics by institution.

Table 1. Descriptive statistics of research variables

Variable	School	Mean	Std. Deviation	N
Mastery of Islamic Education Material	SMP Unismuh Makassar	85.27	9.43	120
Mastery of Islamic Education Material	Phatnawitya School	77.86	10.12	110
Learning Habits/Self-Regulation	SMP Unismuh Makassar	81.44	8.97	120
Learning Habits/Self-Regulation	Phatnawitya School	74.32	9.25	110

Students at SMP Unismuh Makassar obtained higher mean scores in both outcome domains. This pattern suggests that stronger institutional readiness, policy coherence, and access to digital platforms may support more consistent integration of character education through digital literacy. Figure 1 visualizes the comparative pattern across the two schools.

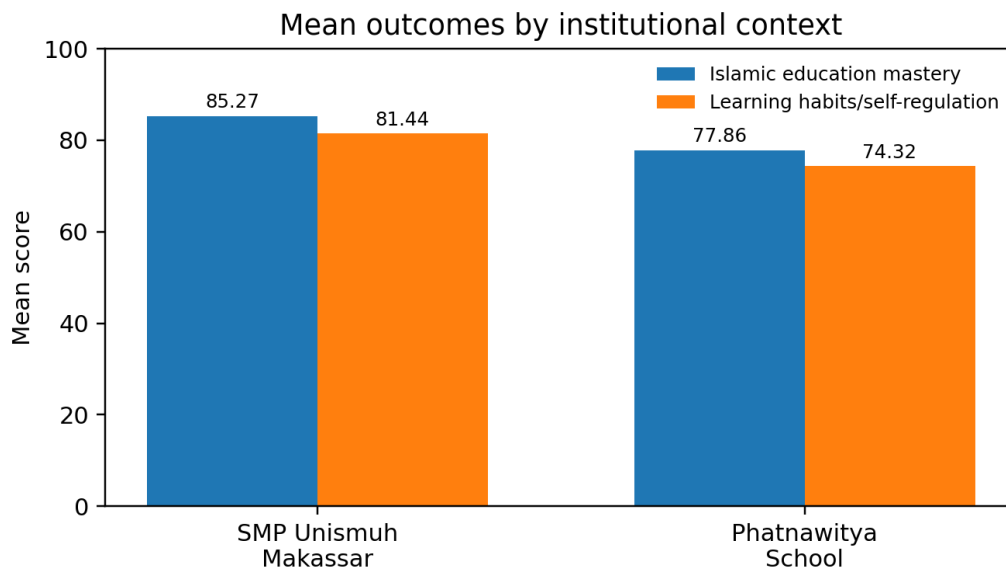


Figure 1. Comparative mean scores of student outcomes by institutional context

The model feasibility test showed an acceptable basis for inferential analysis, with a likelihood ratio of 0.115, approximate chi-square of 4.912, $df = 2$, and $p =$

0.106. The multivariate test indicated that institutional context significantly affected the combined dependent variables, as presented in Table 2.

Table 2. Multivariate test of institutional context

Effect	Wilks' Lambda	F	Hypothesis df	Error df	Sig.
Institution (School)	0.621	52.883	2	227	0.000

The result demonstrates that institutional context significantly affects the combined outcomes of Islamic education mastery and learning habits/self-regulation (Wilks' Lambda = 0.621, F = 52.883, p < 0.001). Separate effects are presented in Table 3.

Table 3. Separate effects of institutional context

Dependent Variable	R ²	F	Sig.
Mastery of Islamic Education Material	0.412	89.321	0.000
Learning Habits/Self-Regulation	0.268	56.118	0.000

Institutional context explained 41.2% of variance in mastery and 26.8% of variance in learning habits/self-regulation. Thus, the contextual effect was stronger for the moral-cognitive domain than for the moral-behavioural domain.

Table 4. Regression coefficients of digital literacy on outcomes

Dependent Variable	Intercept	X Coefficient	Sig.	Regression equation
Mastery of Islamic Education Material	25.472	0.721	0.000	Y = 25.472 + 0.721X
Learning Habits/Self-Regulation	42.336	0.387	0.000	Y = 42.336 + 0.387X

Digital literacy significantly predicted both outcomes, but its coefficient was stronger for Islamic education mastery ($\beta = 0.721$, p < 0.001) than for learning habits/self-regulation ($\beta = 0.387$, p < 0.001). Figure 2 illustrates the different slopes of the predictive relationships.

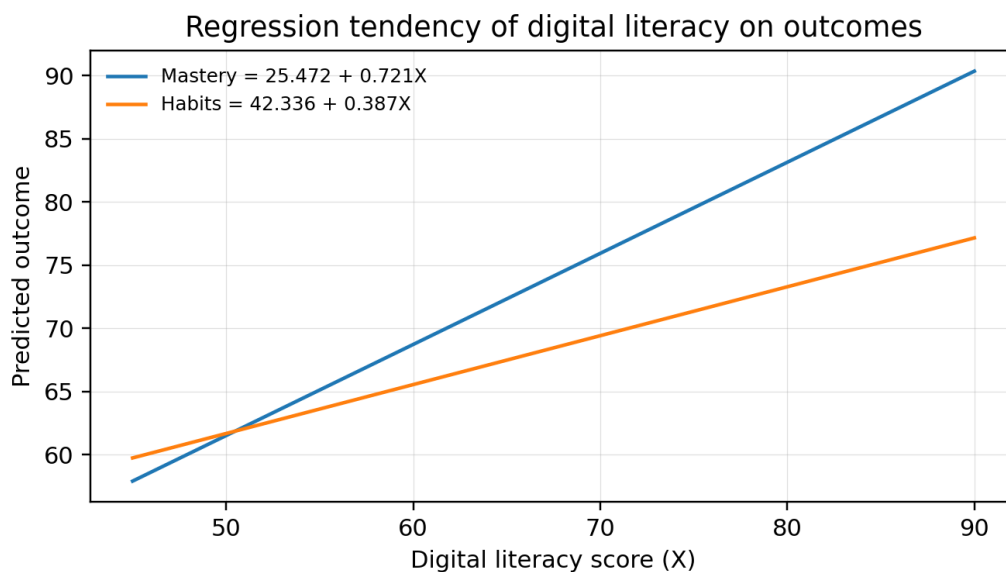


Figure 2. Regression tendency of digital literacy on moral-cognitive and moral-behavioural outcomes

Qualitative findings

Qualitative findings were organized using the Stake Countenance dimensions. In the antecedent dimension, SMP Unismuh Makassar demonstrated stronger infrastructure, platform access, and institutional support for digital learning. Teachers used platforms such as Google Classroom, Canva, multimedia resources, and Islamic learning applications. Phatnawitya School had more limited digital infrastructure and relied primarily on smartphones, projected slides, and basic multimedia resources; however, teachers reported strong commitment to moral guidance and contextual adaptation.

In the transaction dimension, Makassar teachers integrated Islamic-themed digital projects, video assignments, design tasks, and guided online discussions. These activities required students to produce digital content while considering honesty, responsibility, and ethical communication. At Phatnawitya School, learning was less tool-intensive but more dialogic. Teachers emphasized reflective discussion, adab in communication, respect for diversity, honesty in group work, and tolerance in multicultural interactions.

In the outcome dimension, students in Makassar frequently reported greater caution in posting, sharing, and producing digital content after completing value-based projects. Students in Thailand emphasized respectful communication, tolerance, and awareness of adab in online group interactions. Cross-case analysis

indicates two complementary pathways: production-based digital projects supported by stronger infrastructure in Makassar, and reflection-based ethical facilitation that compensates for limited tools in Thailand.

Table 5. Cross-case comparison of institutional pathways

Dimension	SMP Unismuh Makassar (Indonesia)	Phatnawitya School (Thailand)
Institutional support	High: infrastructure, policy alignment, platform access, and teacher training support	Moderate: limited tools, uneven access, and multicultural navigation
Pedagogical strategy	Structured project-based digital learning	Teacher-led reflective dialogue and guided discussion
Primary tools	Canva, editing software, online platforms, Islamic learning applications	Smartphones, projected slides, and basic multimedia
Dominant character emphasis	Digital responsibility, honesty, and Islamic identity expression	Adab, tolerance, interpersonal ethics, and harmonious interaction
Main pathway	Value internalization through production, feedback, and digital artefacts	Value internalization through reflection, teacher mediation, and contextual moral dialogue

Discussion

The findings confirm that digital literacy integration can strengthen character education in Islamic education, but the pathway and magnitude depend on institutional context. Quantitatively, the Makassar site showed higher mean scores in both mastery and learning habits/self-regulation. Qualitatively, this advantage was supported by stronger infrastructure, more frequent platform use, and structured project-based learning. This confirms that digital literacy becomes more educationally productive when schools provide institutional readiness and coherent pedagogical routines rather than merely introducing digital tools (Haleem et al., 2022; Shabazian, 2020).

A central finding is that digital literacy had a stronger effect on moral-cognitive outcomes than on moral-behavioural outcomes. This is theoretically meaningful. Digital literacy can immediately support cognitive mastery because students search, evaluate, organize, and produce religious content, thereby strengthening comprehension and value articulation. Digital projects such as da'wah videos, visual campaigns, and online discussions require students to translate Islamic concepts into concrete messages, which supports meaning-making and moral reasoning

(Çebi & Reisoglu, 2020). By contrast, behavioural outcomes such as responsibility, self-regulation, discipline, and adab require repeated practice, mentoring, feedback, family support, and school culture. Behavioural change is therefore slower and less dependent on digital literacy alone because moral formation depends on sustained supervision, role modelling, and habituation.

The Thailand case deepens this interpretation. Lower quantitative scores should not be interpreted as weak character education. Qualitative evidence shows that teachers consistently framed online interaction through adab, honesty, tolerance, and respectful communication. This suggests that in resource-constrained Muslim-minority settings, teacher mediation can provide an important ethical pathway even when digital production is limited (Aderibigbe et al., 2023). However, teacher mediation cannot be treated as a complete substitute for institutional support. It may be constrained by workload, training quality, and consistency of implementation. Sustainable character education therefore requires both relational guidance and scalable digital ethics routines (Drake & Reid, 2020).

These findings are consistent with recent studies showing that Islamic education can bridge religious values and digital ethics, but only when curriculum, teacher training, and parental collaboration are intentionally developed (Nurlela et al., 2025). Digital ethics in Islamic religious education requires more than moral instruction; it needs contextual case studies, ethical reflection, simulations, and project-based activities that connect Qur'anic and Prophetic values with real digital behaviour (Turk et al., 2022). In this sense, digital literacy functions as a moral-cultural practice, not only a technical competence.

The findings also have policy relevance. In Indonesia, digital literacy integration aligns with the broader orientation of Kurikulum Merdeka and character formation agendas, especially the dimensions of faith, noble character, critical reasoning, creativity, independence, collaboration, and global diversity in the Profil Pelajar Pancasila. In Islamic education settings, these dimensions can be linked with adab, amanah, tabayyun, responsibility, and respectful digital participation. For madrasah and Islamic schools, the logic also resonates with the Profil Pelajar Rahmatan lil 'Alamin, which emphasizes religious moderation, tolerance, and social harmony. In Thailand, where Islamic education operates within a Muslim-minority and multicultural context, the results highlight the importance of digital literacy as a medium for cultivating adab, tolerance, and peaceful coexistence. Thus, cross-context transferability requires adaptation rather than replication (Shabazian, 2020).

The study contributes to the literature in three ways. First, it offers empirical evidence that digital literacy integration strengthens both moral-cognitive and

moral-behavioural domains, with a stronger immediate effect on cognitive mastery. Second, it provides a comparative explanation of how Muslim-majority and Muslim-minority contexts produce different but complementary pathways of character strengthening (Aderibigbe et al., 2023). Third, it demonstrates the usefulness of the Stake Countenance Model for evaluating value-based digital pedagogy through the interaction of antecedents, transactions, and outcomes.

CONCLUSION

This study concludes that integrating digital literacy within Islamic education can strengthen character education outcomes in both Indonesia and Thailand. Quantitative evidence shows that digital literacy significantly predicts Islamic education mastery and learning habits/self-regulation, although the effect is stronger in the moral-cognitive domain. This indicates that digital literacy more directly reinforces students' understanding and articulation of Islamic values, while moral-behavioural formation requires sustained practice, mentoring, and institutional reinforcement.

The comparative findings show that institutional context matters. SMP Unismuh Makassar illustrates how stronger infrastructure, policy alignment, and project-based digital pedagogy can enhance mastery and digital responsibility. Phatnawitya School demonstrates that teacher-led reflection can strengthen adab, tolerance, and respectful communication even when digital facilities are limited. Therefore, character education is not determined by technology alone but by the interaction between institutional readiness, ethical scaffolding, teacher mediation, and school culture.

Practically, teachers should integrate digital ethics prompts into Islamic education activities, require students to evaluate sources through tabayyun principles, design digital projects that promote honesty and responsibility, and assess not only content quality but also ethical communication and source use. Schools should develop simple guidelines for Islamic digital ethics, provide teacher training in value-based digital pedagogy, and create feedback routines for monitoring students' online behaviour. Policymakers should support minimum digital infrastructure, integrate digital ethics into Islamic education curriculum guidance, and encourage collaboration among schools, families, and communities to reinforce responsible digital participation.

This study has limitations. The purposive selection of two schools limits statistical generalization, and the cross-sectional design cannot fully capture long-term behavioural change. Some behavioural outcomes were measured through self-report and school-based indicators, which may not fully represent actual online

conduct outside school. Future research should include more sites, longitudinal designs, direct behavioural indicators such as digital interaction logs or performance tasks, and broader comparison across different types of Islamic schools. Despite these limitations, the study provides evidence that digital literacy can serve as a strategic medium for strengthening character education when it is anchored in Islamic values and implemented through context-sensitive pedagogy.

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