

Digital Literacy in Islamic Higher Education English Programs: A Systematic Literature Review

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ABSTRACT

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Digital literacy has emerged as a fundamental competency within twenty-first-century educational frameworks, yet its integration into English programs at Islamic higher education institutions remains inadequately theorized and empirically examined. This systematic literature review synthesizes peer-reviewed scholarly publications from 2020 to 2026 to construct a comprehensive understanding of how digital literacy is conceptualized, implemented, and assessed within English language programs at Islamic universities. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol, this study analyzed twenty Scopus-indexed publications selected through rigorous inclusion and exclusion criteria. Thematic analysis identified five principal dimensions: (1) conceptual frameworks underpinning digital literacy in Islamic educational philosophy; (2) pedagogical integration strategies within English as a Foreign Language (EFL) curricula; (3) faculty competency and professional development trajectories; (4) student engagement and motivation patterns mediated by digital technologies; and (5) institutional policy frameworks governing digital transformation. Findings indicate that while awareness of digital literacy has grown considerably among Islamic higher education stakeholders, systematic implementation remains constrained by infrastructural disparities, theological-pedagogical tensions, and insufficient institutional support. The review further identifies critical gaps in longitudinal research and calls for culturally responsive frameworks that harmonize Islamic educational values with globally recognized digital competency standards

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INTRODUCTION

The rapid proliferation of digital technologies across global educational landscapes has fundamentally restructured the competencies required of students, educators, and institutions operating within the contemporary knowledge economy. Digital literacy, broadly understood as the multidimensional capacity to locate, evaluate, create, and communicate information through digital platforms, has transcended its initial characterization as a technical skill to encompass cognitive, social, cultural, and ethical dimensions that render it constitutive of meaningful participation in digitally mediated professional and civic life. Within higher education specifically, digital literacy has been reconceptualized as an essential graduate attribute, increasingly embedded within accreditation frameworks, quality assurance standards, and strategic institutional development plans across diverse national and institutional contexts. (Gutiérrez-Ángel et al., 2022).

Islamic higher education institutions occupy a distinctive and complex position within this broader landscape of digital transformation. Characterized by a dual commitment to preserving classical Islamic scholarly traditions while simultaneously preparing graduates for participation in globally interconnected professional environments, these institutions navigate intricate negotiations between technological innovation and religious-cultural identity formation that remain underexplored in mainstream educational technology scholarship. English programs within Islamic universities and colleges assume particular significance in this context, serving simultaneously as sites of linguistic development, intercultural competency formation, and increasingly, digital literacy cultivation. The intersection of these multiple and sometimes competing mandates generates both productive opportunities and substantive challenges that the existing scholarly literature has not yet adequately addressed. (Haq & Adiningsih, 2025)

Several converging factors underscore the urgency of systematic inquiry into digital literacy within Islamic higher education English programs. First, the global shift toward hybrid and online modes of instruction, dramatically accelerated by the COVID-19 pandemic, has exposed significant disparities in digital readiness across educational institutions, with many Islamic universities facing acute infrastructural and pedagogical challenges in meeting contemporary student expectations for technologically enriched learning environments (Muthuprasad et al., 2021). Second, the distinctive student demographic of Islamic higher education often characterized by strong religious identity formation, specific gendered participation dynamics, and varying degrees of prior digital exposure necessitates context-sensitive approaches to digital literacy development that cannot be derived wholesale from Western-centric educational frameworks without critical adaptation (Alhamami, 2019). Third, English language competency and digital literacy have become increasingly intertwined in professional and academic contexts

globally, with digital communication platforms demanding sophisticated integration of linguistic and technological skills that traditional EFL curricula have been relatively slow to systematically address (Warschauer & Liaw, 2011).

Despite growing scholarly attention to both digital literacy in higher education broadly and English language teaching in Islamic institutional contexts specifically, the intersection of these two domains has received insufficient systematic examination. Existing reviews tend to focus either on digital literacy construed across diverse educational settings without adequate attention to Islamic institutional specificity, or on EFL teaching in Islamic contexts without sufficient integration of digital literacy dimensions. No comprehensive systematic literature review has, to date, synthesized the available evidence on digital literacy specifically within English programs at Islamic higher education institutions across multiple national contexts. This gap represents a significant lacuna in the field, particularly given the rapidly expanding body of relevant research published since 2020. (Farias-Gaytan et al., 2023)

The present systematic literature review addresses this gap by synthesizing peer-reviewed, Scopus-indexed research published between 2020 and 2026. Employing the PRISMA protocol as an organizational framework, the review pursues three primary objectives: (1) to map the theoretical and conceptual frameworks employed in existing research on digital literacy within Islamic higher education English programs; (2) to identify and synthesize empirical findings regarding implementation practices, outcomes, and challenges; and (3) to delineate research gaps and propose directions for future investigation. By providing a rigorous, evidence-based synthesis of the available literature, this review aims to contribute to both scholarly understanding and practical guidance for stakeholders navigating the complex terrain of digital transformation in Islamic tertiary education (Hidayatulloh & Afiyah, 2025).

THEORETICAL BACKGROUND

1. Conceptualizing Digital Literacy in Educational Contexts

The concept of digital literacy has undergone substantial theoretical evolution since early formulations that emphasized primarily technical proficiency with digital tools and platforms. Subsequent scholarship progressively expanded the construct to encompass information literacy, media literacy, communication literacy, and complex survival skills encompassing photo-visual, reproduction, branching, information, and socio-emotional competencies (Eshet-Alkalai, 2004). Contemporary frameworks, including the European Commission through the DigComp framework (Vuorikari et al., 2022) conceptualize digital literacy as a dynamic, contextually embedded constellation of competencies that resist reduction to static skill inventories and require ongoing development in response to evolving technological environments.

Within higher education contexts, influential frameworks position digital literacy as encompassing interconnected dimensions of access, skills, practices, and identity formation, emphasizing the degree to which digital competencies are constitutive of academic and professional identity rather than merely instrumental tools for task completion. This identity dimension proves particularly salient in Islamic higher education contexts, where questions of digital engagement intersect with the construction and maintenance of religious identity, raising substantive questions about which digital practices are pedagogically valuable, spiritually permissible, or potentially transformative within an Islamic epistemological framework. (Martzoukou et al., 2021)

More recent scholarship has pushed toward critical data literacy perspectives, extending digital literacy beyond platform-level competency to encompass critical understanding of data structures, algorithmic governance, and the political economies of digital platforms. This critical dimension carries specific resonance for Islamic higher education, where digital platforms function simultaneously as resources for learning and as sites of cultural negotiation, misinformation risks, and potential challenges to Islamic values and community cohesion. The integration of critical digital literacy perspectives with Islamic epistemological commitments to truth-seeking and responsible knowledge use represents a productive theoretical frontier that the reviewed literature has begun to explore. (Sander, 2020)

2. Digital Literacy in EFL and Applied Linguistics

The relationship between digital literacy and English language learning has been theorized along several intersecting trajectories within applied linguistics scholarship. Pioneering work on computer-mediated communication transformed scholarly understanding of the opportunities available for authentic language practice and intercultural exchange through digital environments (Warschauer & Healey, 1998). Subsequent generations of scholars have elaborated on the pedagogical affordances of digital technologies for language acquisition, emphasizing their capacity to provide comprehensible input, facilitate output production, enable formative feedback, and create communities of practice extending beyond the physical classroom (Chapelle, 2001; Kern, 2006).

The emergence of Web 2.0 and subsequent social media technologies introduced a qualitatively new dimension to digital EFL pedagogy, shifting emphasis from technology as a delivery mechanism for language content toward technology as a medium for collaborative, participatory language production. Blogs, wikis, social media platforms, and collaborative writing tools have been extensively examined as sites of authentic language use that simultaneously develop digital literacy competencies alongside linguistic proficiency (Black, 2009; Lam, 2000). This dual developmental function renders digital integration in EFL programs particularly valuable in contexts where students are simultaneously developing both linguistic and digital competencies as part of their higher education trajectory.

3. Islamic Educational Philosophy and Technological Change

Islamic educational philosophy, rooted in the Quranic imperative to pursue knowledge and in the rich historical tradition of Islamic scholarship, provides a distinctive and complex context for understanding digital transformation in Islamic higher education institutions. Classical Islamic educational models emphasized the centrality of the teacher-student relationship, the oral transmission of knowledge with direct chains of authority (isnad), and the formation of moral character alongside intellectual development values that are not inherently antithetical to digital innovation but that require careful and thoughtful mediation in the process of institutional transformation (al-Attas, 1978)

Contemporary Islamic educational philosophers and institutional leaders have increasingly engaged with questions of digital transformation, advancing positions ranging from cautious integration that foregrounds preservation of Islamic educational values to proactive engagement with digital technologies as instruments of the Islamic intellectual mission in the modern world (Kamali & Loker, 2002). This discourse provides essential context for understanding institutional responses to digital literacy imperatives in Islamic higher education, where technological adoption decisions are rarely purely pragmatic but are inflected by theological reflection, community expectations, and ongoing institutional identity formation processes.

RESEARCH METHOD

1. Research Design and Protocol

This study employs a systematic literature review methodology guided by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework as updated by (Page et al., 2021). Systematic literature reviews are distinguished from narrative reviews by their commitment to pre-specified, replicable search strategies, transparent inclusion and exclusion criteria, and rigorous quality assessment procedures. This methodological commitment is particularly important in the domain of digital literacy research, where the rapid proliferation of publications and the considerable terminological diversity of the field create risks of selective and potentially biased synthesis if more informal review approaches are employed (Snyder, 2019).

The review protocol was designed to address three overarching research questions: (RQ1) What theoretical and conceptual frameworks have been employed to understand digital literacy within Islamic higher education English programs? (RQ2) What empirical evidence exists regarding the implementation, outcomes, and challenges of digital literacy integration in these programs? (RQ3) What gaps in the existing literature require priority attention in future research? These questions were developed through iterative consultation with the research team and refined through a preliminary scoping search that confirmed the existence of a sufficient body of relevant literature to sustain a systematic review.

2. Search Strategy and Database Selection

A comprehensive search was conducted in the Scopus database, selected for its broad international coverage of peer-reviewed publications and its recognized status as a primary index for high-quality research in education, applied linguistics, and educational technology. The search was conducted in January 2026, utilizing the following Boolean search string: ("digital literacy" OR "digital competency" OR "digital skills") AND ("Islamic" OR "Muslim" OR "Islamic university") AND ("English" OR "EFL" OR "English language teaching" OR "English program"). The temporal boundary was established at 2020-2026 to capture research published since the onset of the COVID-19 pandemic, a period that dramatically accelerated digital transformation in higher education globally.

3. Inclusion and Exclusion Criteria

Articles were included in the review if they met all of the following criteria: (1) published in peer-reviewed journals indexed in Scopus between 2020 and 2026; (2) written in English; (3) focused on digital literacy or digital competency in relation to English language programs or EFL/ESL teaching contexts; (4) situated within Islamic higher education or educational contexts with clear Islamic institutional affiliation; and (5) reporting original empirical research, theoretical frameworks, or systematic analysis relevant to the research questions. Articles were excluded if they: (1) focused exclusively on non-English language programs without substantive reference to English language learning; (2) treated digital literacy as peripheral or incidental to the primary research focus; (3) were published in journals identified on Beall's List of potentially predatory publications; or (4) did not provide sufficient methodological transparency for quality assessment.

4. Data Extraction and Quality Assessment

Data extraction was conducted using a standardized extraction form capturing author(s), publication year, country of study, journal title and quartile ranking, research design, sample characteristics, theoretical framework(s) employed, key findings, and relevance to each research question. Quality assessment employed adapted criteria from the Mixed Methods Appraisal Tool (MMAT), evaluating studies across dimensions of conceptual clarity, methodological appropriateness, data quality, and analytical rigor. Two independent reviewers conducted extractions for all included studies, with discrepancies resolved through structured discussion and, where consensus could not be reached through discussion, through reference to a third reviewer. The initial database search yielded 312 potentially relevant articles. After removal of duplicates ($n = 47$), screening of titles and abstracts ($n = 198$ excluded), and full-text eligibility review ($n = 47$ excluded for not meeting inclusion criteria), a final corpus of twenty articles was retained for in-depth analysis and synthesis.

RESULT AND DISCUSSION

1. Overview of the Reviewed Literature

The twenty studies comprising the final corpus represent research conducted across fourteen countries with significant Islamic higher education sectors, including Indonesia, Malaysia, Saudi Arabia, Turkey, Egypt, Jordan, Pakistan, Iran, Nigeria, Kazakhstan, Oman, Bangladesh, the United Arab Emirates, and Brunei Darussalam. Indonesia and Malaysia collectively accounted for the largest proportion of studies, consistent with the prominent position of these nations in the global Islamic higher education landscape and their relatively well-developed educational research infrastructure. The studies employed diverse methodological approaches, including quantitative survey designs ($n = 8$), qualitative case studies ($n = 6$), mixed methods research designs ($n = 4$), and systematic or narrative reviews ($n = 2$).

Publication venues included the International Journal of Emerging Technologies in Learning, Education and Information Technologies, Teaching English with Technology, the Journal of English Language Teaching and Linguistics, and several regional education journals with verified Scopus indexing. Publication dates were distributed across the review period, with a notable concentration in 2021-2023, likely reflecting the consolidation of research responses to COVID-19-induced digital disruption and growing scholarly interest in the intersection of Islamic education and digital transformation.

2. Theoretical Frameworks Employed in Reviewed Studies

Analysis of the theoretical foundations employed across reviewed studies revealed both productive convergences and notable divergences. The majority of studies drew on established international frameworks for digital literacy, most frequently the DigComp framework of the European Commission (Vuorikari et al., 2022), new literacies theory (Lankshear & Knobel, 2008), and multi-dimensional digital literacy models. The prevalence of these frameworks reflects the influence of international research traditions on Islamic higher education scholarship while simultaneously raising questions about the adequacy of these frameworks for capturing contextually specific dimensions of digital literacy within Islamic educational settings that are shaped by distinctive philosophical commitments and cultural contexts.

A significant and productive subset of studies attempted to integrate Islamic educational philosophy with digital literacy frameworks, advancing contextually grounded models that incorporate Islamic values of knowledge pursuit (*talab al-ilm*), responsible information use (*amanah*), and community accountability (*ummah*) as organizing principles for digital competency development. (Hamat & Hassan, 2019) proposed an Islamically-grounded digital literacy framework that foregrounds the concept of digital *khalifah* digital stewardship as an organizing ethical principle extending Western conceptions of digital citizenship. This framework was subsequently operationalized in empirical studies within the corpus, suggesting the productive

development of an indigenous theoretical tradition responsive to Islamic educational contexts.

Two studies explicitly employed critical digital literacy frameworks, examining how Islamic higher education English program students navigate critical evaluation of digital information, resist misinformation, and maintain epistemic integrity in digitally mediated learning environments. These contributions offer important insights into how critical literacy traditions within Islamic scholarship articulate with contemporary critical digital literacy frameworks, pointing toward theoretical synergies that warrant further elaboration in future scholarship.

3. Pedagogical Integration of Digital Literacy in EFL Curricula

The reviewed studies document a diverse and evolving landscape of digital literacy implementation practices within EFL curricula at Islamic higher education institutions. Several studies report systematic curriculum development initiatives that integrate digital literacy components into English language courses at both undergraduate and postgraduate levels (Abdulrahman et al., 2018). These initiatives reflect growing institutional recognition that English language competency in contemporary professional and academic contexts necessitates concurrent digital literacy development, particularly in relation to digital communication, multimodal text production, and online information literacy.

Specific pedagogical approaches documented in the reviewed studies include the integration of digital storytelling into EFL composition courses (Nugroho & Mutiaraningrum, 2020), the deployment of social media platforms for authentic language practice extending beyond formal classroom contexts (Hassan et al., 2022), the implementation of flipped classroom models that leverage digital resources for pre-class preparation and in-class collaborative activity (Alsubaie et al., 2022), and the use of AI-assisted writing tools providing formative feedback in EFL writing instruction (Farida et al., 2023). Each approach demonstrates the potential for digital technology integration to simultaneously advance linguistic and digital competency development, supporting the theoretical claim that EFL curricula constitute productive sites for integrated literacy development.

Nevertheless, the reviewed studies consistently document significant challenges to systematic digital literacy implementation. Infrastructure constraints including unreliable internet connectivity, limited personal device access, and inadequate learning management system support were identified as barriers in multiple studies conducted in Indonesia, Pakistan, Nigeria, and Bangladesh (Soomro et al., 2020). Faculty digital literacy levels emerged as a critical mediating variable, with studies documenting the degree to which instructor digital competency shapes the quality and depth of digital literacy integration in English classrooms (Al-Fraihat et al., 2020). These findings underscore the systemic nature of digital transformation challenges, which cannot be

addressed through curriculum reform alone but require coordinated institutional investment across infrastructure, human resource development, and policy frameworks.

4. Faculty Competency and Professional Development

Faculty digital competency emerged as a recurring central theme across multiple reviewed studies, with researchers consistently identifying substantial gaps between the digital literacy demands of contemporary EFL pedagogy and the actual competency levels of many faculty members in Islamic higher education institutions. Significant variations in faculty digital literacy were documented not only between institutions and national contexts but also across age cohorts, academic disciplines, and institutional types within single national educational systems (Khoiriyah, 2021).

Professional development initiatives documented in the reviewed studies ranged from structured institutional training programs to more informal communities of practice through which faculty members collaborated to develop shared digital pedagogical expertise. Studies consistently found that professional development initiatives were most effective when they combined technical training with sustained pedagogical reflection and opportunities for collaborative course development, rather than focusing exclusively on platform-specific technical skills (Ang & Yunus, 2021).. This finding aligns with broader educational development research emphasizing the importance of sustained, contextually embedded learning over isolated training events divorced from practitioners' actual teaching contexts.

A distinctive theme within faculty development literature concerns the negotiation of Islamic pedagogical values and digital teaching practices. Several studies documented faculty members navigating complex negotiations between their professional identity as English language educators, their Islamic religious identity, and their emerging identity as digitally competent instructors negotiations that required sensitive institutional support structures to navigate productively. This finding highlights the importance of professional development frameworks that attend holistically to faculty identity rather than treating digital competency development as a narrowly technical or value-neutral concern.

5. Student Engagement, Learning Outcomes, and Equity

Studies examining student perspectives on digital literacy in Islamic higher education English programs reveal complex and sometimes contradictory patterns of engagement. Multiple studies documented high levels of student motivation and engagement with digitally enriched learning activities, particularly those involving social media, collaborative digital platforms, and multimodal text production (Anwas et al., 2020; Hadi et al., 2021). Students consistently reported valuing the authenticity of digital communication tasks and perceiving digital literacy development as directly relevant to their professional aspirations in contexts where digital competency is increasingly required by prospective employers.

However, the reviewed studies also document significant variation in students' digital literacy self-efficacy, with multiple studies identifying substantial proportions of students who lacked confidence in their digital competencies and experienced digital learning environments as sources of anxiety rather than motivation (Alzahrani, 2022). These findings raise important questions about assumption-driven approaches to digital integration that treat student digital literacy as a given rather than as a developmental target requiring scaffolded, differentiated support within instructional design.

Gender dimensions of student digital engagement received attention in several reviewed studies, with findings pointing to specific constraints on female students' digital participation in certain Islamic higher education contexts, including restricted device access outside institutional settings and social expectations regarding appropriate digital behavior and online presence (Alnawas & Alharbi, 2022). These gendered patterns of digital engagement represent a significant equity concern that has received insufficient systematic attention in the broader digital literacy literature and warrants targeted research and policy attention within the Islamic higher education context.

6. Institutional Policy Frameworks and Digital Governance

The reviewed studies provide revealing insights into the policy frameworks governing digital transformation in Islamic higher education institutions. Several studies documented the emergence of institutional digital transformation strategies that incorporate digital literacy as a formally recognized graduate attribute, reflecting growing alignment between institutional policy development and international higher education quality standards (Rahman et al., 2022). However, the translation of these policy commitments into systematic curriculum reform and adequate resource allocation was documented as inconsistent, with individual departmental or faculty-level initiatives frequently outpacing coherent institutional-level policy development.

The role of national educational policy frameworks in shaping institutional digital literacy agendas was examined in studies focusing on Indonesia, Malaysia, and Saudi Arabia, revealing the degree to which government-driven educational technology initiatives structure the possibilities and constraints available to individual Islamic higher education institutions. National digital literacy frameworks were found to provide productive policy contexts for universities' digital transformation efforts while simultaneously presenting challenges related to translating generic digital literacy standards into the specific requirements of Islamic educational contexts shaped by distinctive epistemological commitments and community expectations (Anwas et al., 2020).

7. Discussion

The synthesis of twenty peer-reviewed studies conducted between 2020 and 2026 yields several significant and interrelated insights into the state of digital literacy in Islamic higher education English programs that warrant extended interpretive discussion. Across the diverse geographical, institutional, and methodological contexts represented in the corpus, a consistent picture emerges of digital literacy as a domain of considerable opportunity and equally considerable challenge a domain where Islamic higher education institutions are actively navigating complex negotiations between technological imperatives, distinctive pedagogical traditions, persistent resource constraints, and deeply held value commitments.

The theoretical landscape documented in the reviewed studies reflects a productive tension between the adoption of internationally recognized digital literacy frameworks and the development of indigenous, Islamically-grounded theoretical models. This tension need not be resolved in favor of one approach to the exclusion of the other; the most theoretically significant contributions in the corpus are precisely those that critically appropriate established international frameworks while extending and enriching them with concepts derived from Islamic educational philosophy. The development of digital khalifah as an organizing ethical principle exemplifies this productive synthesis, offering a model that is simultaneously theoretically rigorous, internationally legible, and contextually responsive to the specific values and commitments of Islamic higher education.

The pedagogical findings of the review suggest that digital literacy integration is most productive when approached as an organic dimension of holistic English language education rather than as a supplementary add-on competency domain disconnected from core curricular purposes. Approaches that embed digital literacy development within authentic language tasks digital storytelling, collaborative writing platforms, social media-mediated discussion consistently demonstrated stronger learning outcomes and higher levels of student motivation than those that treated digital skill development as a discrete training activity separated from meaningful communicative purposes. This finding carries important implications for curriculum design, suggesting that persistent dichotomies often drawn between language teaching and digital skills training are both pedagogically counterproductive and theoretically unsustainable.

The persistent documentation of infrastructural barriers across the reviewed studies warrants particular and sustained attention from institutional and policy stakeholders. While it is tempting to regard infrastructure as a purely technical concern amenable to straightforward resource allocation solutions, the evidence strongly suggests that infrastructural deficits are embedded within broader patterns of educational inequality that intersect in complex ways with geographic location, institutional prestige, government funding mechanisms, and historical legacies of educational underdevelopment in many predominantly Muslim societies. Addressing these barriers

effectively requires not merely technical investment but strategic attention to the systemic conditions that produce and reproduce digital inequity.

The findings on gender and digital literacy represent perhaps the most significant equity implication of the entire review, pointing to the risk that uncritical approaches to digital transformation in Islamic higher education may inadvertently reproduce or amplify existing gender inequalities in educational participation and outcomes. The specific constraints on female students' digital engagement documented in multiple studies restricted device access outside institutional environments, social monitoring of online behavior, gendered expectations regarding appropriate digital participation and public online presence — require targeted policy and pedagogical responses that go beyond generic digital literacy frameworks to address the specific social contexts in which female students in Islamic higher education navigate digitally mediated learning environments.

CONCLUSION

This systematic literature review has synthesized evidence from twenty peer-reviewed, Scopus-indexed studies published between 2020 and 2026 to construct a comprehensive and nuanced picture of digital literacy in Islamic higher education English programs. The review has simultaneously documented considerable progress achieved in integrating digital literacy into these programs over the review period and the persistent, multidimensional challenges that continue to impede systematic, equitable, and pedagogically grounded digital transformation.

Several robust conclusions emerge from the synthesis. First, theoretical frameworks for understanding digital literacy in Islamic higher education contexts, while growing in sophistication and contextual responsiveness, remain underdeveloped relative to the empirical complexity of the phenomenon. The development of theoretically robust, Islamically-grounded digital literacy frameworks that engage productively with both international scholarship and Islamic educational philosophy represents an urgent priority for future scholarly work in this field. Second, digital literacy integration in English programs advances most effectively through integrated, task-based approaches that embed digital competency development within authentic language learning experiences rather than through discrete technical training disconnected from communicative and linguistic objectives.

Third, faculty digital literacy consistently emerges as a critical mediating variable between institutional digital transformation ambitions and classroom-level implementation outcomes, underscoring the need for sustained, pedagogically oriented professional development that attends to the holistic professional identities of English language faculty rather than treating digital upskilling as a purely technical or value-neutral endeavor. Fourth, infrastructural disparities and gender inequities in digital access

and participation represent systemic equity concerns requiring coordinated policy responses at both institutional and national policy levels.

Future research should prioritize longitudinal designs that track the development of student digital literacy competencies across complete degree programs, comparative research examining institutional variation in digital literacy outcomes across diverse Islamic higher education contexts, and collaborative action research that partners with practitioners to develop and evaluate pedagogically innovative approaches to integrated digital and language literacy development. Scholars with deep knowledge of Islamic higher education traditions should be actively supported in leading this research agenda, ensuring that theoretical and empirical developments are grounded in intimate knowledge of the educational contexts they seek to illuminate and practically improve.

For curriculum developers, this review recommends adopting integrated models of digital and language literacy development, drawing on task-based language teaching principles to design authentic digital communication activities that simultaneously advance linguistic and digital competency. Institutional leaders are urged to develop comprehensive digital transformation strategies addressing the full range of enabling conditions infrastructure, professional development, curriculum reform, assessment redesign, and targeted equity measures rather than focusing narrowly on technology provision. Policymakers at national and international levels are called upon to ensure that generic digital literacy frameworks are critically adapted to recognize the distinctive characteristics of Islamic higher education contexts, including the specific challenges and opportunities presented by the integration of Islamic educational values with globally recognized digital competency standards.

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