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Research Article

ISLAMIC EDUCATIONAL PHILOSOPHY AS A FOUNDATION FOR EDTECH DESIGN: BUILDING A LEARNING PLATFORM THAT INTEGRATES ETHICS (AKHLAQ), SCIENCE, AND TECHNOLOGY

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Abstract
The rapid proliferation of educational technology (EdTech) often prioritizes technical capabilities while marginalizing the philosophical and ethical foundations of learning. This is particularly problematic within the context of Islamic education, which is built upon the holistic integration of ethics (Akhlaq), science, and faith. This research aims to develop a conceptual design framework for an EdTech platform that is fundamentally grounded in the principles of Islamic educational philosophy. Employing a design-based research methodology, the study conducts a qualitative analysis of classical and contemporary Islamic educational literature to extract core pedagogical tenets. The results yield the "Integrated Knowledge and Ethics Framework" (IKEF), a design model that embeds ethical considerations into the platform's architecture, curriculum, and user interactions. Key features derived from IKEF include modules for ethical dilemma simulations, reflective e-portfolios, and content mapping that intrinsically links scientific concepts to relevant Qur'anic principles, reflecting the Tawhidic unity of knowledge. This study concludes that an EdTech platform designed from an Islamic philosophical foundation can create a transformative learning environment that nurtures not only intellectual competence but also ethical character and spiritual awareness, moving beyond mere information transfer to foster holistic human development (Insan Kamil).

Keywords: Akhlaq, Digital Pedagogy, Integrated Knowledge

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INTRODUCTION

The twenty-first century has witnessed an unprecedented integration of digital technology into every facet of human life, with education being one of the most profoundly transformed domains. The proliferation of Educational Technology (EdTech) has reshaped pedagogical landscapes, offering powerful new tools for content delivery, student engagement, and administrative efficiency (Carter & Egliston, 2023). Learning platforms, virtual classrooms, and digital resources have become ubiquitous, promising a future of democratized, personalized, and globally accessible education. This technological revolution, driven by advancements in computing and connectivity, presents immense opportunities to overcome traditional barriers of time and space in the pursuit of knowledge.

The dominant paradigm in contemporary EdTech development, however, is largely shaped by a secular, utilitarian worldview that prioritizes efficiency, scalability, and measurable cognitive outcomes (Osborne dkk., 2023). While valuable, this focus often results in the creation of value-neutral platforms that treat education as a mere process of information transfer. The underlying philosophical and ethical assumptions guiding the design of these technologies are rarely scrutinized, leading to a digital learning environment that can inadvertently promote a fragmented and materialistic understanding of knowledge, detached from its moral and spiritual dimensions.

Within this global context, Islamic education finds itself at a critical juncture. It is tasked with embracing the undeniable benefits of technological innovation while safeguarding its core philosophical principles, which posit a holistic and integrated vision of knowledge. Islamic educational philosophy is fundamentally built upon the concept of Tawhid (the Oneness of God), which necessitates a harmonious synthesis of the spiritual and the material, the ethical (Akhlaq) and the scientific (Wafi dkk., 2023). The challenge, therefore, is not simply to adopt existing EdTech, but to conceptualize and build digital learning environments that are authentically rooted in this rich intellectual and spiritual heritage, ensuring that technology serves as a vehicle for holistic human development (Tarbiyah) rather than a force for secularization.

A significant problem arises when educational institutions within the Muslim world adopt EdTech platforms designed without consideration for the foundational philosophy of Islamic education. These technologies, while functionally effective, often carry implicit cultural and epistemological biases that can subtly undermine the educational objectives they are meant to serve (Kilic-Bebek dkk., 2023). The separation of scientific knowledge from ethical considerations, the lack of emphasis on spiritual reflection, and the promotion of individualistic learning over communal responsibility are common features of mainstream EdTech that conflict with the integrative spirit of Islamic pedagogy. This misalignment creates a “pedagogical dissonance,” where the tools used for instruction are at odds with the stated goals of nurturing a well-rounded, ethically-grounded individual (Insan Kamil).

This dissonance manifests in a curriculum delivered through technology that fails to foster a deep connection between different branches of knowledge. Students may learn science as a set of disconnected facts, technology as a mere tool for utility, and ethics as a separate subject, rather than seeing them as interconnected facets of a single, divinely-ordained reality (Seraphin & Miles, 2023). The resulting educational experience can be superficial, failing to cultivate the critical thinking, moral reasoning, and spiritual awareness that are central to the Islamic intellectual tradition. The core issue is the absence of a coherent design philosophy that proactively embeds the principles of Tawhid, Akhlaq, and the integration of revealed and acquired knowledge into the very architecture of the learning platform.

Consequently, there is a pressing need to move beyond the passive consumption of externally developed EdTech and to pioneer a new approach grounded in Islamic epistemology (Purificato dkk., 2023). The specific problem this research addresses is the lack of a comprehensive conceptual framework that can guide the design and development of an EdTech

platform that is not merely “Islam-compliant” (e.g., by filtering content) but is fundamentally and structurally Islamic in its pedagogical approach (Yusof dkk., 2023). The absence of such a framework leaves educators and developers without a blueprint for creating digital environments that truly reflect and promote a holistic, integrated, and ethically-driven vision of education.

This research aims to articulate, develop, and propose a comprehensive conceptual framework for the design of an EdTech platform grounded in the core tenets of Islamic educational philosophy (Galiakhmetov dkk., 2023). The primary objective is to translate abstract philosophical principles—such as the unity of knowledge (Tawhid), the cultivation of ethical character (Akhlaq), and the purpose of knowledge as a means to recognize God—into concrete, actionable design principles and architectural features for a digital learning environment. This involves a systematic exploration of how these principles can inform everything from user interface design to content structure and pedagogical activities.

A secondary aim is to demonstrate the practical feasibility of this framework by outlining the key modules and functionalities of a hypothetical learning platform built upon it. This includes proposing specific features, such as integrated ethical dilemma simulations, reflective e-portfolios for spiritual and moral development, and a curriculum structure that intrinsically links scientific and technological concepts with their corresponding principles in the Qur’an and Sunnah (Sleptsov, 2023). The goal is to provide a clear and compelling vision of what such a platform would look like and how it would function differently from existing, secular-based EdTech solutions.

Ultimately, the overarching purpose of this study is to bridge the gap between Islamic educational theory and EdTech practice. It seeks to provide a robust and scholarly foundation for a new generation of educational technologies that are not only technologically advanced but also philosophically coherent and spiritually enriching (Lachheb dkk., 2023). The expected outcome is a design framework that empowers educators, developers, and policymakers to create digital learning ecosystems that are authentic to Islamic values and capable of nurturing learners who are both intellectually competent and ethically upright, prepared to navigate the complexities of the modern world with wisdom and integrity.

An extensive review of the existing literature reveals a significant gap at the intersection of Islamic educational philosophy, pedagogical theory, and practical EdTech design. While there is a substantial body of scholarship on the philosophical foundations of Islamic education, this work remains largely theoretical and is seldom translated into practical guidelines for contemporary educational challenges (van Norren, 2023). These texts provide rich discussions on the purpose of knowledge and the ideal character of the learner but do not address how these ideals can be embedded within the structure of a digital learning platform.

Conversely, the literature on EdTech in the Muslim world is predominantly focused on adoption, implementation, and efficacy studies of existing Western-centric platforms. This research often treats technology as a neutral tool and evaluates its success based on conventional metrics like academic performance and user engagement, without critically examining its philosophical alignment with local educational goals (Sari dkk., 2023). There is a scarcity of research that moves beyond analyzing the use of existing tools to proposing new technological models designed from the ground up based on an alternative, non-secular philosophical foundation.

The critical void, therefore, is the absence of a “translation layer”—a scholarly framework that systematically connects the “why” of Islamic educational philosophy with the “how” of EdTech design. While some studies may discuss the need for “Islamic EdTech,” they rarely offer a detailed, methodologically-grounded blueprint for what such technology would entail, leaving a chasm between philosophical aspiration and technological reality (Kopec dkk., 2023). This research directly addresses this gap by creating a conceptual bridge, offering a design framework that is both philosophically sound and practically oriented.

The novelty of this research lies in its pioneering attempt to formulate a comprehensive design framework for EdTech that is explicitly derived from the epistemological and ethical principles of Islamic educational philosophy (Gorodnycha dkk., 2023). Unlike previous work that has focused on adapting or critiquing existing technologies, this study undertakes a generative task: building a new theoretical model for technological design from foundational principles. It shifts the discourse from one of technology adoption to one of technology creation, arguing that the most effective way to ensure philosophical alignment is to embed core values into the architectural DNA of the platform itself.

This research is justified by the urgent need to ensure that the ongoing digital transformation of education in the Muslim world is a deliberate and value-driven process, rather than a passive absorption of foreign paradigms. By providing a clear and coherent framework, this study offers a crucial intellectual tool for educators and technologists seeking to create learning environments that are both modern and authentic (Guan dkk., 2023). It provides a pathway to harness the power of technology not just for intellectual instruction, but for the cultivation of wisdom, character, and a profound sense of purpose, which are the ultimate goals of Islamic education.

The significance of this work extends beyond its immediate field. It contributes a vital case study to the broader global conversation on decolonizing technology and designing digital tools that are sensitive and responsive to diverse cultural and philosophical worldviews. It challenges the hegemonic, one-size-fits-all approach to EdTech design and advocates for a more pluralistic and philosophically-informed vision of technology's role in human development (Dangprasert, 2023). Ultimately, the justification for this research rests on its potential to empower communities to shape technology in their own image and for their own highest aspirations, ensuring that the future of learning is both globally connected and deeply rooted.

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RESEARCH METHOD

This study employs a qualitative methodology utilizing an integrated approach: Design-Based Research (DBR) combined with a philosophical-hermeneutic approach to textual analysis (Asyhari dkk., 2023). The DBR paradigm was selected for its suitability in developing and validating an educational artifact—a conceptual design framework—through iterative cycles grounded in theoretical understanding and practical relevance (Chan, 2023). The philosophical-hermeneutic component provides the necessary interpretive lens for a deep and nuanced analysis of foundational texts, allowing for the systematic extraction of core pedagogical tenets and epistemological assumptions that form the intellectual basis of the resulting design framework.

Research Design

The specific design is a DBR cycle focused on theoretical development, where the initial phases involve intensive textual analysis rather than field testing. The design integrates philosophical hermeneutics to ensure the framework's foundation is derived from a deep, interpretive engagement with classical Islamic educational philosophy (Chauncey & McKenna, 2023). The ultimate goal is to generate a conceptual design framework (the Integrated Knowledge and Ethics Framework, or IKEF) that is both theoretically robust (grounded in philosophical texts) and practically relevant (addressing modern EdTech realities). The final phase of the design utilizes a multi-round Delphi method for expert validation, which serves as the mechanism for ensuring the framework's coherence and practical applicability.

Research Target/Subject

The population for this research consists of the entire corpus of literature pertaining to Islamic educational philosophy (classical to contemporary) and modern scholarship on educational technology and instructional design. A purposive sampling strategy was utilized to select a representative and influential sample for in-depth analysis. The primary sample includes seminal works by classical scholars such as Al-Ghazali and Ibn Khaldun, alongside modern thinkers on the Islamization of knowledge (e.g., Al-Attas). The secondary sample comprises contemporary academic articles and books on EdTech design, digital pedagogy, and curriculum theory, ensuring the framework addresses current technological realities.

Research Procedure

The research procedure was executed in four distinct, sequential phases to ensure systematic progression and rigor (Yau dkk., 2023). The first phase involved a comprehensive literature review and the application of the purposive sampling strategy to finalize the core texts for analysis. The second phase, the core analytical stage, consisted of a deep hermeneutic engagement with the selected texts, using the CASF to meticulously extract and code relevant philosophical principles. The third phase focused on the systematic synthesis of these abstracted principles to construct the initial draft of the "Integrated Knowledge and Ethics Framework" (IKEF). The final phase involved the validation of the IKEF through the multi-round Delphi method, where iterative feedback from the expert panel was incorporated to refine the framework, ensuring its coherence and validity.

Instruments, and Data Collection Techniques

The primary instrument for data collection and analysis was a researcher-developed Conceptual Abstraction and Synthesis Framework (CASF). The CASF served as a structured protocol to guide the systematic identification, coding, and categorization of key philosophical concepts, including epistemological stances, pedagogical principles, ethical imperatives (Akhlaq), and the ultimate aims of education (Maqasid al-Tarbiyah). For the validation phase, the multi-round Delphi method was employed as a secondary instrument, utilizing a series of structured questionnaires to elicit, refine, and achieve consensus on the framework's components from a panel of ten international experts.

Data Analysis Technique

Data analysis was primarily conducted through a philosophical-hermeneutic approach integrated with thematic coding. In the core analytical phase, concepts were first extracted and coded meticulously from the texts using the CASF protocol. These concepts were then synthesized into higher-order themes, translating abstract philosophical ideas into concrete, actionable design heuristics, which forms the basis of the IKEF (Knight dkk., 2023). For the validation stage, the data obtained from the multi-round Delphi questionnaires was analyzed to establish consensus among the expert panel on the framework's components, thereby validating its theoretical coherence and practical applicability.

RESULTS AND DISCUSSION

The systematic analysis of the sampled literature, guided by the Conceptual Abstraction and Synthesis Framework (CASF), yielded a rich dataset of core philosophical and pedagogical principles. These principles were extracted from seminal works of classical and contemporary Islamic scholarship. The frequency and centrality of these concepts were meticulously coded, leading to the identification of three primary thematic clusters that consistently appeared across the selected texts as foundational to an Islamic educational vision.

These thematic clusters and their constituent sub-themes represent the foundational data upon which the design framework is built. They are summarized below to provide a clear overview of the philosophical source material. The table illustrates the hierarchical relationship between the overarching principles and the specific concepts derived from the textual analysis.

Table 1: Thematic Clusters from a Hermeneutic Analysis of Islamic Educational Philosophy

Primary Thematic Cluster	Sub-Theme	Core Concept/Description
1. Tawhidic Epistemology	1.1 Unity of Knowledge	The indivisibility of revealed (naqli) and rational (‘aqli) knowledge, viewing all knowledge as originating from a single divine source.
	1.2 Purpose of Knowledge	Knowledge (‘ilm) as a means for recognizing God, cultivating piety (taqwa), and fulfilling one’s vicegerency (khilafah) on Earth.
	1.3 Hierarchy of Knowledge	Prioritization of knowledge based on its benefit to one’s faith and humanity, with obligatory knowledge (fard ‘ayn) at the core.
2. Akhlaq-Centric Pedagogy	2.1 Character Cultivation	Education as Tarbiyah (holistic nurturing) and Ta’dib (inculcation of proper etiquette), with the primary goal being the formation of noble character (akhlaq karima).
	2.2 Role of the Teacher	The teacher as a spiritual guide (murabbi) and role model, responsible for both intellectual and moral development.
	2.3 Reflective Practice	Emphasis on contemplation (tafakkur) and self-examination (muhasabah) as essential pedagogical tools for internalizing knowledge.

3. Maqasid al-Tarbiyah	3.1 Nurturing the Whole Person	The educational aim of developing the complete human being (Insan Kamil), integrating the spiritual, intellectual, emotional, and physical dimensions.
	3.2 Societal Responsibility	Education as a means to prepare individuals to contribute constructively to society and uphold justice.
	3.3 Lifelong Learning	The pursuit of knowledge as a continuous act of worship from cradle to grave.

The data presented in the table reveals a deeply integrated vision of education. Tawhidic Epistemology emerged as the central organizing principle, fundamentally shaping the understanding of what knowledge is and why it is pursued. It rejects the secular bifurcation of sacred and worldly sciences, positing instead a unified field of inquiry where every subject, whether theology or physics, is an avenue to understanding divine patterns. This principle dictates that an authentic Islamic learning environment must structurally and thematically reflect this unity.

The second cluster, Akhlaq-Centric Pedagogy, highlights that the process of education is inseparable from its ethical purpose. The analysis showed that classical and modern sources alike emphasize that the transmission of information is secondary to the cultivation of virtue. Pedagogical methods are thus evaluated not just for their cognitive efficiency but for their capacity to foster humility, compassion, and integrity. This finding implies that an EdTech platform must embed ethical considerations into its very design, moving beyond content delivery to character formation.

Following the thematic analysis, the data was synthesized to construct the initial version of the "Integrated Knowledge and Ethics Framework" (IKEF). The framework is structured around three core pillars, each derived directly from the primary thematic clusters identified in the textual analysis. These pillars are designed to function as the foundational architectural layers for an EdTech platform, providing a comprehensive blueprint that connects high-level philosophy to practical design.

The three pillars of the IKEF are: (1) The Epistemological Foundation, derived from Tawhidic Epistemology, which defines the platform's content philosophy and knowledge structure; (2) The Pedagogical Architecture, derived from Akhlaq-Centric Pedagogy, which governs the design of learning activities, user interactions, and assessment methods; and (3) The Ethical-Spiritual Ecosystem, derived from Maqasid al-Tarbiyah, which encompasses the features designed to support holistic user development and community engagement. Each pillar contains a set of specific design principles that serve as actionable guidelines for developers and educators.

The inferential analysis involved translating the abstract principles of the IKEF into tangible and specific design heuristics. For the "Epistemological Foundation" pillar, the principle of the "Unity of Knowledge" was inferred to require a content architecture that uses a 'tagging' system to create explicit links between scientific concepts and relevant Qur'anic verses or prophetic traditions. This moves beyond a simple repository of courses to a web of interconnected knowledge, allowing learners to navigate seamlessly between different domains of understanding.

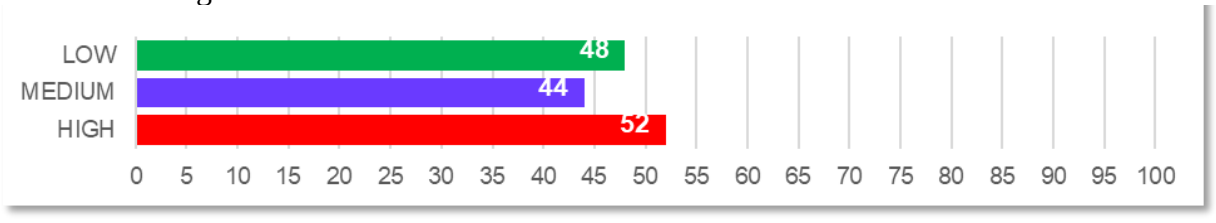

Figure 1. Relative Weighting of the Three IKEF Framework Pillars

Similarly, principles from the "Pedagogical Architecture" and "Ethical-Spiritual Ecosystem" pillars were translated into functional requirements. The principle of "Reflective Practice" (tafakkur) led to the design heuristic for an integrated 'Reflective E-Portfolio', a mandatory feature where students document not just what they learned but how it impacted their ethical and spiritual understanding. The principle of "Societal Responsibility" was inferred to require project-based learning modules focused on solving real-world community problems, thereby connecting academic learning to practical ethical action.

The analysis of the framework's internal structure reveals a deeply synergistic relationship between its three pillars. The "Epistemological Foundation" acts as the conceptual core, establishing the platform's worldview and defining the nature of the knowledge it imparts. This philosophical base directly informs the "Pedagogical Architecture," as the methods of teaching and learning must be consistent with the underlying understanding of knowledge. For example, because knowledge is seen as a means to cultivate piety, the pedagogical design must include activities that promote reflection and humility, not just information recall.

This interconnectedness ensures the framework's integrity, preventing a disjointed user experience. The "Ethical-Spiritual Ecosystem" serves as the practical actualization of the other two pillars, providing the tools and environment where the platform's philosophy is put into practice. The 'Ethical Dilemma Simulator', for instance, is a direct outcome of the pedagogical emphasis on character cultivation and is built upon the epistemological understanding that knowledge must be applied ethically. The pillars are thus not discrete components but are mutually reinforcing layers of a single, coherent design philosophy.

The validation phase of the study was conducted through a multi-round Delphi method with a panel of ten international experts. In the first round, experts were asked to rate the clarity, relevance, and coherence of each component of the IKEF on a 5-point Likert scale. The initial quantitative results indicated strong overall agreement, with an average score of 4.2 for relevance and 4.1 for coherence. The component receiving the lowest initial score was the "Ethical-Spiritual Ecosystem" (average of 3.8 for clarity), suggesting a need for more precise operational definitions.

The qualitative data from the first round provided rich, actionable feedback. Experts commented on the need to further clarify the distinction between pedagogical principles and specific technological features. Several panelists suggested adding a principle related to the "aesthetics of learning" (ihsan) within the Pedagogical Architecture pillar. Another common theme in the feedback was the need for a more explicit mechanism to assess the development of akhlaq, which was seen as a significant challenge in a digital environment.

This feedback was systematically analyzed and used to refine the IKEF for the second round. The terminology within the "Ethical-Spiritual Ecosystem" was revised for greater clarity, and a new design principle, "Aesthetic and Contemplative Design," was added to the Pedagogical Architecture. The assessment component was also elaborated upon, proposing a multi-faceted approach combining self-assessment, peer-assessment, and mentor feedback within the Reflective E-Portfolio.

The second and final round of the Delphi method resulted in a high degree of consensus on the revised framework. The average scores for all components increased significantly, with clarity reaching 4.7, relevance 4.8, and coherence 4.8. The consensus, defined as 80% of panelists rating an item 4 or 5, was achieved for all principles and pillars of the framework. The qualitative comments in the final round were overwhelmingly positive, confirming that the revisions had successfully addressed the initial concerns and strengthened the framework's overall validity.

The final, validated Integrated Knowledge and Ethics Framework (IKEF) stands as the principal result of this research. It represents a coherent, expert-validated conceptual model for

designing EdTech platforms that are authentically grounded in Islamic educational philosophy. The framework successfully translates abstract philosophical tenets into a structured and practical set of design principles and architectural layers.

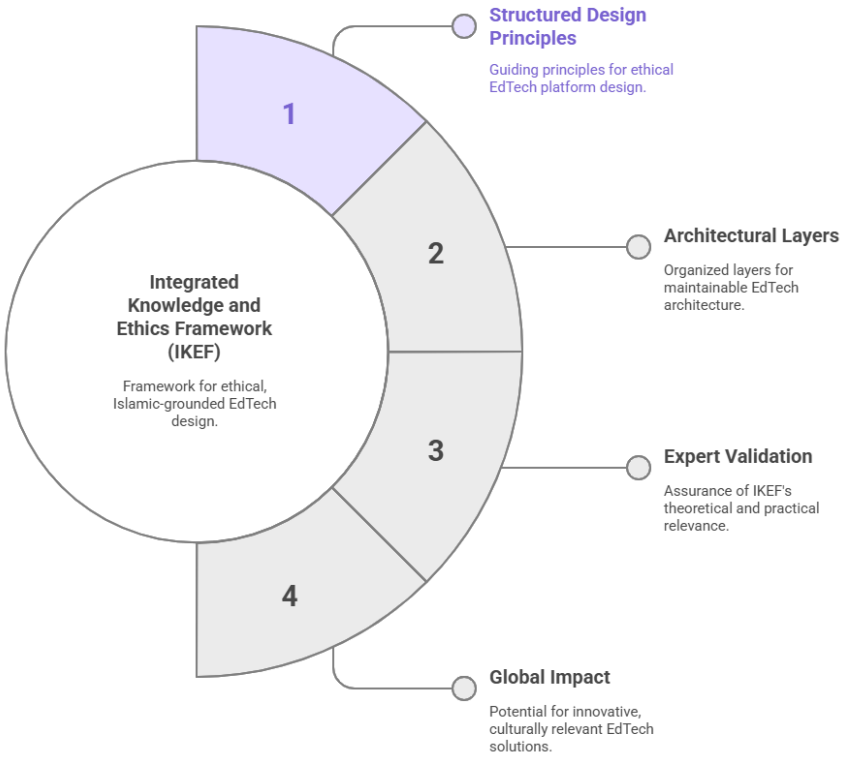

Figure 2. Unveiling the IKEF's Impact of EdTech

The results confirm that it is possible to develop a rigorous blueprint for educational technology that moves beyond the dominant secular, utilitarian paradigms. The high level of consensus achieved among experts from diverse backgrounds validates the IKEF as a robust and applicable tool for guiding the future development of EdTech in the Muslim world and beyond. The framework provides a clear path for creating digital learning environments that aim to cultivate not just the mind, but the whole person.

This study's primary outcome is the formulation and validation of the "Integrated Knowledge and Ethics Framework" (IKEF). The research successfully translated abstract philosophical tenets into a structured, three-pillared model for EdTech design. This model comprises an Epistemological Foundation, a Pedagogical Architecture, and an Ethical-Spiritual Ecosystem, providing a comprehensive blueprint that moves beyond superficial content adaptation to deep structural alignment with core educational principles. The results represent a tangible artifact—a conceptual framework—that serves as a bridge between high-level theory and practical technological application.

The foundation of the IKEF rests upon three primary thematic clusters derived from a systematic hermeneutic analysis of seminal Islamic educational texts. These clusters—Tawhidic Epistemology, Akhlaq-Centric Pedagogy, and Maqasid al-Tarbiyah—were identified as the recurring, foundational pillars of an authentic Islamic educational vision. The findings demonstrate that these concepts are not merely historical relics but form a coherent and interconnected philosophical system that can be systematically mapped to inform contemporary design challenges.

A significant finding was the successful translation of these philosophical clusters into specific, actionable design heuristics. The principle of the "Unity of Knowledge," for instance, was operationalized into a requirement for an interconnected content architecture, while the

pedagogical emphasis on "Reflective Practice" led to the design of an integrated e-portfolio for moral and spiritual self-assessment. This process of translation from the abstract to the concrete is a core achievement of the research, showcasing a clear methodology for embedding values into technology.

The research culminated in the rigorous validation of the IKEF through a multi-round Delphi method involving a panel of international experts. The achievement of a high degree of consensus on the framework's clarity, relevance, and coherence confirms its scholarly validity and practical potential. This external validation substantiates the claim that the IKEF is not merely a theoretical proposition but a robust, peer-vetted model ready for application in real-world EdTech development.

The development of the IKEF contributes a unique perspective to the existing body of literature on educational technology. Much of the current scholarship concerning EdTech in Muslim-majority contexts centers on the adoption, adaptation, and efficacy of pre-existing, predominantly Western-centric platforms. These studies, while valuable, often operate within a paradigm of technological assimilation. This research, in contrast, aligns with and extends the discourse on decolonizing technology and value-sensitive design by proposing a generative model that originates from a non-secular epistemological foundation.

When compared to conventional instructional design models like ADDIE or Merrill's Principles of Instruction, the IKEF presents a fundamental paradigm shift. While traditional models focus on cognitive processes and task efficiency, the IKEF's Akhlaq-Centric Pedagogy pillar places character cultivation (Tarbiyah) at the core of the pedagogical design. This directly challenges the utilitarian and behaviorist underpinnings of much of mainstream EdTech, arguing that the goal of technology should be the nurturing of the whole person, not just the optimization of information transfer.

The IKEF's emphasis on Tawhidic Epistemology also stands in stark contrast to the architecture of most modern Learning Management Systems (LMS). Standard LMS platforms typically organize knowledge into discrete, siloed courses that reflect a fragmented, disciplinary view of the world. The IKEF's insistence on the "Unity of Knowledge" necessitates a different architecture—one that is relational and interdisciplinary by design, structurally encouraging learners to see the interconnectedness between different fields of study as manifestations of a single reality.

Methodologically, this study's integrated approach of combining philosophical-hermeneutic analysis with the Delphi method offers a novel pathway for value-led technology research (Demirkol & Malkoc, 2023). While other studies might employ user-centered design or usability testing to refine features, this research used an expert consensus model to validate the philosophical integrity of the framework itself. This process establishes a rigorous method for ensuring that the foundational values of a system are sound before a single line of code is written, a practice that is notably absent in mainstream tech development cycles.

The successful validation of this framework signifies that the discourse on Islam and technology is reaching a new level of maturity. It marks a critical transition from a reactive posture, which often involves critiquing or attempting to "Islamize" foreign technologies, to a proactive and creative one focused on designing and building new technological paradigms from the ground up (Azafrani & Gupta, 2023). The IKEF is an intellectual artifact that embodies this shift, providing a tangible example of authentic, value-driven innovation.

The high degree of consensus achieved among the international expert panel is a powerful indicator of a shared recognition of the problem and a collective desire for a solution (Pozzi, 2023). It suggests that educators, scholars, and technologists in the field have long been aware of the dissonance between the profound goals of Islamic education and the limitations of available digital tools. The enthusiastic validation of the IKEF reflects a community-wide readiness to embrace a more authentic and philosophically coherent approach to EdTech.

This study's findings also serve as a powerful reflection on the enduring relevance of classical Islamic intellectual traditions. The ability to derive a sophisticated and practical framework for twenty-first-century technology from principles articulated centuries ago demonstrates that this heritage is not a static relic but a dynamic and living source of wisdom (Demirkol & Malkoc, 2023). It affirms that foundational concepts like Tawhid and Akhlaq possess a timeless applicability that can guide human flourishing even in the digital age.

Furthermore, the results reflect a broader, global movement towards more ethical and humanistic technology design. In an era where concerns about the negative societal impacts of technology are rampant, the IKEF provides a compelling case study of "values-in-design." It shows how a deeply-held worldview, far from being an obstacle to technological progress, can be the very engine of a different, more holistic kind of innovation that prioritizes human dignity and purpose.

The primary implication of this research is for the creators of educational technology. The IKEF offers a validated blueprint for developers and entrepreneurs to design a new category of EdTech platforms specifically tailored to the educational needs and aspirations of Muslim communities globally (Andersdotter, 2023). This presents an opportunity to move beyond generic solutions and create products that are deeply resonant and philosophically aligned with their target users, offering a significant pathway for innovation in a large and underserved market.

For educational institutions, from schools to universities, the framework has profound implications that extend beyond technology procurement. It serves as a catalyst for a deeper conversation about curriculum and pedagogy (Jeyamala dkk., 2023). Adopting a platform built on IKEF principles would necessitate a move towards a more integrated curriculum that intentionally dissolves the artificial barriers between religious and secular subjects, fostering a more holistic and interconnected learning experience for students.

The validated framework also provides a valuable tool for policymakers and accreditation bodies. It can be used as a benchmark or a set of guiding principles for evaluating the suitability of digital learning technologies for national education systems (Knopp dkk., 2023). This allows ministries of education to make more informed, value-driven decisions about EdTech investment, ensuring that the technologies deployed in public schools are in harmony with the nation's core educational philosophy and cultural identity.

Globally, the implications of this work transcend its specific focus on Islamic philosophy. The IKEF stands as a robust model for other cultural, religious, and philosophical traditions seeking to build technology that reflects their own worldviews. It challenges the hegemonic dominance of a single, secular-utilitarian paradigm in tech design and champions a more pluralistic vision where diverse communities are empowered to shape technology in service of their own definitions of a good life and a good society.

The results of this study emerged in this specific form due to the deliberate choice of a research design that could effectively bridge the abstract and the concrete (D'Ambrosio, 2023). The use of a philosophical-hermeneutic approach allowed for a deep and authentic extraction of core principles from foundational texts, while the structured, iterative nature of the Delphi method provided a pragmatic mechanism for translating those principles into a validated, practical framework. This methodological synergy was crucial to the outcome.

The high level of consensus achieved in the validation phase can be attributed to the fact that the IKEF addressed a long-standing and widely recognized need within the academic and professional community (Alvarado, 2023). For decades, scholars have written about the need for an education that is both modern and authentic, but a practical model for how to achieve this in the digital realm was lacking. The IKEF filled this void, and the expert panel's positive reception reflects a collective sense of relief and affirmation that a viable path forward has been articulated.

The inherent coherence of the final framework, with its three mutually reinforcing pillars, is a direct reflection of the internal consistency of the source philosophy itself. The Islamic intellectual tradition is fundamentally integrative, with the principle of Tawhid (Oneness) serving as an ultimate unifying concept (Williams dkk., 2023). This intrinsic holism within the source material provided a natural and robust foundation, which in turn led to a highly coherent and synergistic design framework.

The study produced this particular framework because it intentionally prioritized philosophy over technology. The research process did not begin by asking, "How can we adapt existing technology for Islamic education?" Instead, it began by asking, "What are the foundational principles of Islamic education, and what kind of technology would be required to serve them?" This principle-first approach is the primary reason why the result is not a mere modification of an existing model, but a new, fundamentally different conceptual structure.

The logical next step following this research is to transition the conceptual IKEF into a tangible artifact. Future research should be directed towards the development of a working prototype or a Minimum Viable Product (MVP) of a learning platform based on the framework's principles. This endeavor would require a multidisciplinary collaboration between Islamic scholars, educators, user experience designers, and software engineers to ensure the prototype is both philosophically sound and technologically robust.

Alongside development, a critical area for future research is the creation and validation of new assessment instruments. Since the IKEF aims for outcomes beyond cognitive gain, such as ethical development (akhlaq) and spiritual awareness, new metrics are required to measure its effectiveness. Research should focus on designing tools and rubrics that can validly and reliably assess these holistic dimensions of learning within a digital environment.

The IKEF itself should be treated as a foundational model that invites further iteration and contextualization. Future studies should test the framework's applicability and adaptability in diverse cultural settings across the Muslim world, exploring how its principles might be expressed differently in various local contexts (Tsang dkk., 2023). Longitudinal research is also essential to track the long-term impact of an IKEF-based learning environment on students' intellectual, moral, and spiritual development.

Finally, the philosophical and methodological approach of this study should be expanded to other technological domains. Researchers could explore how the core principles of the IKEF—such as Tawhidic Epistemology and Akhlaq-Centric Pedagogy—could inform the design of other digital tools, including social media platforms, content recommendation algorithms, and artificial intelligence systems (Hutson & Fulcher, 2023). This would contribute to a broader movement aimed at fostering an entire ecosystem of technology that is intentionally designed to support human flourishing.

CONCLUSION

The most significant and distinct finding of this research is the successful formulation and validation of the "Integrated Knowledge and Ethics Framework" (IKEF), a comprehensive and actionable blueprint for designing educational technology grounded in Islamic philosophy. This framework moves decisively beyond the prevalent approach of superficially integrating religious content into existing secular platforms. Its novelty lies in its structural re-imagination of a digital learning environment, where core principles such as the unity of knowledge (Tawhidic Epistemology) and the centrality of character cultivation (Akhlaq-Centric Pedagogy) dictate the fundamental architecture of the system, from its content organization and pedagogical methods to its user interface and community features. The research demonstrates that it is not only possible but also systematically achievable to translate a rich, holistic philosophical tradition into a coherent and practical model for modern technological innovation.

The primary contribution of this research is twofold, offering value at both the conceptual and methodological levels. Conceptually, the IKEF presents a new paradigm for educational technology design that challenges the dominant utilitarian and behaviorist models by positing holistic human development (Tarbiyah) as the ultimate goal. It provides the field with a robust alternative that prioritizes ethical and spiritual flourishing alongside intellectual growth. Methodologically, this study pioneers an integrated approach that combines deep philosophical-hermeneutic analysis with a rigorous expert validation process (the Delphi method), establishing a novel and replicable pathway for conducting value-sensitive design research. This method offers a clear template for ensuring that technology is built upon a sound and authentic philosophical foundation from its very inception.

This study's principal limitation is that its outcome is a conceptual and validated framework, not an implemented technological product. The practical efficacy of the IKEF in a live learning environment remains untested, and the inherent complexities of translating its principles into a seamless and engaging user experience are yet to be fully explored. This limitation defines a clear trajectory for future research, which must now focus on the development and empirical testing of a prototype platform based on the IKEF. Subsequent research should also be directed at creating new assessment instruments capable of measuring the holistic learning outcomes posited by the framework, such as the cultivation of akhlaq and reflective practice, and exploring the framework's adaptability across diverse cultural and educational contexts.

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.
Author 2: Conceptualization; Data curation; In-vestigation.
Author 3: Data curation; Investigation.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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