

Reconstructing the Islamization of Science to Address Critical Issues in Modern Education

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Abstract

The rapid advancement of science and technology has transformed modern education while simultaneously creating critical challenges related to ethical degradation, epistemological dualism, technological disruption, and the declining integration of moral and spiritual values within educational systems. This study aims to reconstruct the Islamization of science as a contemporary educational paradigm capable of addressing these challenges through the integration of revelation, reason, and empirical scientific inquiry. The study employed a qualitative library research design using a conceptual and analytical approach. Data were collected from classical Islamic scholarship, contemporary books, and peer-reviewed journal articles published primarily between 2020 and 2025. The literature was analyzed using qualitative content analysis through data reduction, thematic categorization, interpretation, and synthesis to formulate an integrative framework for the reconstruction of the Islamization of science. The findings indicate that reconstructing the Islamization of science extends beyond philosophical discourse by providing practical implications for curriculum development, pedagogical innovation, digital literacy, ethical scientific research, and institutional leadership. The reconstructed framework promotes a holistic educational model that integrates scientific competence with ethical responsibility, spiritual awareness, environmental stewardship, and social justice. Furthermore, it encourages interdisciplinary collaboration and responsible technological innovation while preserving scientific rigor and academic excellence. The study concludes that the reconstruction of the Islamization of science offers a sustainable educational paradigm capable of producing graduates who are intellectually competent, morally responsible, spiritually grounded, and globally competitive in addressing the increasingly complex challenges of the twenty-first century.

Keywords

Islamization of Science; Islamic Epistemology; Modern Education; Holistic Learning; Science and Religion.



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INTRODUCTION

The rapid advancement of science and technology in the twenty-first century has transformed the landscape of modern education, bringing unprecedented opportunities

alongside complex intellectual and moral challenges. Artificial intelligence, biotechnology, digital learning environments, and data-driven educational systems have significantly enhanced knowledge production and accessibility. However, these developments have also intensified concerns regarding the separation between scientific progress and ethical responsibility. Modern educational systems in many Muslim societies continue to adopt scientific paradigms rooted predominantly in secular epistemology, where religion and science are frequently treated as separate domains of knowledge. This dichotomous approach has contributed to a fragmented educational framework in which students often excel in technical competencies while experiencing deficiencies in spiritual awareness, ethical reasoning, and moral responsibility. Consequently, scholars have increasingly emphasized the urgency of reconstructing the Islamization of science as an integrative paradigm capable of harmonizing revelation (wahy) and reason ('aql) to produce holistic human development. Such reconstruction is not intended to reject modern science but rather to critically reinterpret and integrate scientific knowledge within the worldview of Islamic values so that education simultaneously promotes intellectual excellence, ethical integrity, and spiritual consciousness (Al-Attas, 2022; Wan Daud, 2021; Hashim & Langgulong, 2023).

The concept of Islamization of science has evolved considerably since it was first articulated by pioneering Muslim thinkers such as Syed Muhammad Naquib Al-Attas and Ismail Raji Al-Faruqi. Contemporary scholars argue that the original framework requires reconstruction in response to emerging global issues, including technological disruption, ecological crises, moral degradation, educational inequality, and the ethical implications of artificial intelligence. Rather than merely incorporating Islamic terminology into existing curricula, reconstruction demands a comprehensive re-examination of epistemological foundations, research methodologies, educational objectives, and knowledge production processes. Modern education requires an integrated epistemology where empirical investigation is balanced by ethical reflection and theological insight. Such an approach encourages learners to understand scientific discoveries as manifestations of divine wisdom while maintaining rigorous standards of scientific inquiry. Therefore, reconstructing the Islamization of science represents an intellectual movement that seeks to reconnect scientific advancement with universal ethical principles rooted in the Qur'an and Sunnah, enabling education to address contemporary societal challenges more comprehensively (Haneef, 2020; Kamali, 2021; Osman Bakar, 2023).

Another critical issue motivating the reconstruction of Islamization of science is the growing crisis of values within educational institutions. Numerous studies have shown that increasing academic achievement has not necessarily been accompanied by improvements in honesty, social responsibility, environmental awareness, or empathy among students. The expansion of digital technology has facilitated information access but has simultaneously accelerated misinformation, cyberbullying, consumerism, and excessive individualism. These phenomena indicate that knowledge acquisition without moral guidance may produce technically competent individuals who lack ethical judgment. Islamic educational philosophy

proposes that education should cultivate balanced individuals who integrate intellectual, emotional, spiritual, and social dimensions. Accordingly, reconstructing the Islamization of science provides an alternative educational framework that emphasizes character formation alongside scientific competence, encouraging learners to employ scientific knowledge for the welfare of humanity rather than merely economic or technological advancement. This paradigm aligns with the contemporary discourse on sustainable education, ethical innovation, and responsible citizenship in an increasingly interconnected world (UNESCO, 2021; Abdullah, 2022; Salleh & Rahman, 2023).

Furthermore, globalization has intensified intercultural interactions, creating both opportunities for collaboration and challenges to religious identity. Educational institutions are expected to prepare graduates who possess global competitiveness while maintaining strong moral and cultural foundations. However, the dominance of Western positivistic paradigms in curriculum development often marginalizes indigenous and religious epistemologies, limiting the diversity of perspectives available to learners. The reconstruction of Islamization of science seeks to overcome this imbalance by promoting epistemological pluralism that respects scientific rigor while recognizing revelation as a legitimate source of knowledge. Such an approach encourages interdisciplinary dialogue among natural sciences, social sciences, humanities, and Islamic studies, thereby fostering innovative solutions to contemporary problems through integrated knowledge. This educational reconstruction is particularly relevant in Muslim-majority countries where educational reforms increasingly emphasize holistic learning, sustainable development, and ethical leadership in accordance with national educational aspirations and global educational agendas (Ahmed, 2021; Hassan, 2022; Bakar & Hashim, 2024).

Despite extensive discussions concerning Islamization of science, relatively limited research has specifically examined how its reconstruction can address the critical issues emerging within modern education. Much of the existing literature focuses on philosophical debates or historical developments without sufficiently exploring practical educational implications for curriculum design, pedagogy, scientific research, and institutional transformation. Consequently, there remains a significant research gap regarding the formulation of a contemporary framework that integrates Islamic epistemology with the demands of twenty-first-century education. This study therefore aims to reconstruct the Islamization of science as a comprehensive educational paradigm capable of responding to ethical dilemmas, technological disruption, environmental sustainability, and character development in modern educational settings. By synthesizing classical Islamic scholarship with contemporary educational theories, this research is expected to contribute both theoretically and practically to the development of an integrated educational model that nurtures scientifically competent, morally responsible, and spiritually grounded graduates capable of addressing the complex challenges of contemporary society (Kamali, 2021; Osman Bakar, 2023; Hashim & Haneef, 2024).

METHODS

This study employed a qualitative library research design using a conceptual and analytical approach to reconstruct the Islamization of science as a framework for addressing critical issues in modern education. The research collected data from primary sources, including the Qur'an, Hadith, and the seminal works of Syed Muhammad Naquib Al-Attas, Ismail Raji Al-Faruqi, and contemporary Muslim scholars on Islamic epistemology and educational philosophy, as well as secondary sources consisting of peer-reviewed journal articles, books, and conference proceedings published predominantly between 2020 and 2025. Data were gathered through systematic literature review procedures involving identification, screening, selection, and critical evaluation of relevant scholarly publications indexed in reputable databases such as Scopus, Web of Science, and Google Scholar. The collected literature was analyzed using qualitative content analysis, involving data reduction, thematic categorization, interpretation, and synthesis to identify major themes related to the epistemological foundations, educational implications, ethical dimensions, and contemporary reconstruction of the Islamization of science. To ensure the trustworthiness of the findings, source triangulation was applied by comparing perspectives from classical Islamic scholarship and contemporary educational research. The final stage involved developing an integrative conceptual framework that explains how reconstructing the Islamization of science can contribute to overcoming the challenges of technological disruption, moral decline, epistemological dualism, and the increasing demand for holistic education in the twenty-first century (Creswell & Poth, 2023; Snyder, 2020; Xiao & Watson, 2020).

FINDINGS AND DISCUSSION

Reconstructing the Epistemological Foundations of the Islamization of Science in Modern Education

The reconstruction of the Islamization of science begins with re-examining the epistemological foundations that shape knowledge production within contemporary education. Modern educational systems have been largely influenced by positivistic and secular paradigms, which prioritize empirical observation and rational inquiry while frequently excluding metaphysical and theological dimensions from scientific discourse. Although this paradigm has significantly contributed to technological innovation and scientific advancement, it has simultaneously generated an educational dualism that separates scientific knowledge from ethical and spiritual values. Consequently, learners often develop high cognitive competence without proportional moral consciousness, creating a gap between intellectual achievement and responsible human behavior. From the Islamic perspective, knowledge is not merely an accumulation of empirical facts but also a means of recognizing divine wisdom manifested throughout creation. Therefore, reconstructing the Islamization of science does not imply rejecting modern scientific methodologies; rather, it seeks to reposition revelation (wahy) and reason ('aql) as complementary sources of knowledge capable of

guiding scientific inquiry toward the realization of justice, human welfare, and environmental sustainability. Such reconstruction provides an alternative epistemological framework capable of addressing the ethical deficiencies that increasingly characterize modern educational systems while preserving scientific rigor and academic objectivity (Nasr, 2021; Hashim, 2022; Sahin, 2023).

The epistemological reconstruction also requires redefining the concept of science beyond its conventional empirical orientation. Contemporary scientific development has demonstrated that many global challenges—including climate change, social inequality, digital ethics, artificial intelligence, and biotechnology—cannot be solved solely through technical expertise. Instead, these issues demand ethical reasoning, philosophical reflection, and spiritual responsibility alongside scientific competence. Islamic epistemology recognizes that knowledge originates from multiple interconnected sources, including sensory experience, rational analysis, intuition, and divine revelation. These dimensions complement rather than contradict one another, enabling a more holistic understanding of reality. In educational practice, this perspective encourages students to critically evaluate scientific discoveries not only in terms of technological efficiency but also regarding their ethical implications for individuals, societies, and future generations. Consequently, the reconstruction of the Islamization of science emphasizes interdisciplinary integration in which natural sciences, social sciences, humanities, and Islamic studies collectively contribute to solving complex contemporary problems through balanced intellectual and moral reasoning (Alkouatli, 2021; Albarghouthi & Sahin, 2022; Kamali, 2024).

Another important dimension of epistemological reconstruction concerns the integration of worldview into curriculum development. Every educational system reflects a particular worldview that determines what is considered valid knowledge, valuable learning outcomes, and desirable human characteristics. In many contemporary institutions, curricula emphasize measurable academic performance, technological competence, and economic productivity, while moral development and spiritual formation often receive comparatively limited attention. The Islamic worldview proposes that education should cultivate *insan kamil*, or holistic human beings whose intellectual, spiritual, emotional, and social capacities develop harmoniously. Consequently, reconstructing the Islamization of science requires curriculum transformation that integrates scientific concepts with ethical reflection and Islamic values throughout the learning process rather than confining religious instruction to separate subjects. For instance, environmental science may incorporate Islamic principles of stewardship (*khalifah*), economics may integrate concepts of justice and social welfare, while medical education may emphasize compassion, dignity, and accountability alongside clinical competence. Such curriculum integration enables students to perceive scientific knowledge as inseparable from moral responsibility and public service (Sahin, 2022; Ahmed, 2023; Abdullah & Ismail, 2024).

The reconstruction of the Islamization of science also transforms the educational role of teachers. Within conventional educational models, teachers are frequently viewed primarily

as transmitters of information and facilitators of technical skills. However, Islamic educational philosophy conceptualizes educators as *murabbi*, *mu'allim*, and *muaddib*—individuals who simultaneously cultivate intellectual competence, moral integrity, and spiritual awareness. Reconstructing scientific education therefore requires teachers to integrate ethical dialogue, critical reflection, and value-based inquiry into scientific instruction. Rather than presenting science as a value-neutral discipline, educators encourage learners to analyze how scientific discoveries influence society, human dignity, environmental sustainability, and social justice. Such pedagogical transformation nurtures students' ability to connect theoretical understanding with responsible action, thereby strengthening both academic excellence and character formation. Furthermore, teachers themselves require continuous professional development that equips them with interdisciplinary competence encompassing scientific literacy, Islamic epistemology, digital pedagogy, and ethical leadership to effectively facilitate holistic learning within increasingly complex educational environments (Memon, 2021; Halstead, 2022; Alkoutli, 2024).

Digital transformation further reinforces the necessity of reconstructing the epistemological foundations of Islamic education. Artificial intelligence, machine learning, big data, and virtual learning environments have fundamentally reshaped educational practices, enabling personalized learning and broader access to knowledge. Nevertheless, these technological innovations also present significant ethical challenges, including algorithmic bias, misinformation, digital addiction, academic dishonesty, and declining interpersonal relationships. From the perspective of reconstructed Islamization of science, technological advancement should always remain subordinate to ethical objectives that prioritize human dignity and collective welfare. Educational institutions therefore need epistemological frameworks capable of evaluating technological innovation through both scientific evidence and moral principles derived from Islamic teachings. Students should be encouraged not only to master digital technologies but also to critically assess their social consequences, ensuring that innovation contributes positively to humanity rather than exacerbating injustice or moral decline. Consequently, integrating Islamic ethical principles into digital education becomes an essential component of educational reform in the twenty-first century (Williamson, 2021; Holmes et al., 2022; Zawacki-Richter & Qayyum, 2023).

Finally, reconstructing the epistemological foundations of the Islamization of science contributes to developing a sustainable educational paradigm that aligns scientific advancement with universal human values. Contemporary societies increasingly recognize that sustainable development depends not only upon technological innovation but also upon ethical leadership, environmental responsibility, intercultural dialogue, and social solidarity. Islamic epistemology supports these objectives by emphasizing balance (*mizan*), justice (*'adl*), mercy (*rahmah*), and stewardship (*khilafah*) as guiding principles for scientific inquiry and educational practice. Through an integrated epistemological framework, education becomes a transformative process that develops intellectually competent graduates who also possess moral resilience, spiritual awareness, and social responsibility. Such graduates are better

prepared to address global challenges while maintaining integrity, compassion, and accountability in their professional and personal lives. Therefore, reconstructing the Islamization of science is not merely a philosophical endeavor but a strategic educational response to the complex ethical, technological, and societal issues confronting modern education. By integrating revelation and reason within a coherent epistemological framework, modern education can produce individuals capable of advancing scientific knowledge while simultaneously promoting justice, sustainability, and the common good for humanity (UNESCO, 2021; Bakar, 2023; Sahin & Albarghouthi, 2024).

The Implementation of the Reconstructed Islamization of Science to Address Critical Issues in Modern Education

The successful reconstruction of the Islamization of science depends not only on philosophical reform but also on its practical implementation within modern educational systems. Contemporary education is confronted by numerous challenges, including ethical deterioration, technological disruption, environmental degradation, social inequality, and the increasing fragmentation of knowledge. These issues demonstrate that educational institutions can no longer rely exclusively on conventional teaching approaches centered on cognitive achievement and technical competence. Instead, schools and universities must develop educational models that integrate scientific knowledge with ethical reasoning, spiritual awareness, and social responsibility. The reconstructed Islamization of science offers a comprehensive framework through which educational institutions can cultivate graduates capable of responding to global challenges while maintaining strong moral principles. This implementation begins by positioning scientific learning as a means of serving humanity and fulfilling humanity's responsibility as khalifah (vicegerent) on Earth, thereby ensuring that scientific advancement contributes to justice, sustainability, and public welfare rather than merely economic growth or technological efficiency (Bakar, 2023; Sahin, 2023; Hashim & Ahmed, 2024).

One of the primary areas of implementation concerns curriculum reform. Many educational curricula continue to separate religious education from science, technology, engineering, and mathematics (STEM), creating a fragmented learning experience in which students rarely recognize the ethical implications of scientific knowledge. The reconstructed Islamization of science advocates an integrated curriculum where Islamic values are embedded across disciplines without compromising scientific objectivity. For example, environmental science may incorporate Qur'anic principles of environmental stewardship, economics can emphasize justice, fairness, and social welfare, while engineering education may explore ethical responsibilities related to sustainable technological development. Such curriculum integration encourages learners to understand that scientific innovation should always be accompanied by accountability toward society and the environment. Rather than viewing religion and science as competing perspectives, students are guided to appreciate their complementary roles in generating comprehensive solutions for complex global issues.

Consequently, curriculum integration strengthens interdisciplinary thinking while promoting ethical literacy alongside academic excellence (Albarghouthi, 2022; Abdullah & Ismail, 2023; UNESCO, 2024).

Pedagogical transformation constitutes another essential component of implementing the reconstructed Islamization of science. Traditional teacher-centered instruction often emphasizes memorization and examination performance without encouraging ethical reflection or critical engagement with real-world problems. Contemporary educational challenges require pedagogical approaches that foster inquiry, collaboration, creativity, and moral reasoning simultaneously. Through project-based learning, problem-based learning, reflective discussion, and interdisciplinary research, students become active participants in constructing knowledge while evaluating the ethical consequences of scientific discoveries. Within this framework, educators facilitate dialogue concerning the social, environmental, and spiritual implications of scientific advancement rather than presenting knowledge as morally neutral information. Such pedagogy nurtures critical thinking, empathy, responsibility, and lifelong learning, enabling students to apply scientific knowledge for the common good while remaining grounded in Islamic ethical values. Therefore, learning becomes a transformative process that integrates intellectual development with character formation and civic responsibility (Holmes et al., 2022; Alkouatli, 2023; Memon & Abdalla, 2024).

Digital transformation provides another strategic arena for implementing the reconstructed Islamization of science. Artificial intelligence, virtual learning environments, big data analytics, and digital communication technologies have revolutionized educational practices worldwide. While these innovations expand educational access and learning flexibility, they also generate new ethical concerns, including misinformation, plagiarism, cyberbullying, algorithmic bias, digital addiction, and threats to personal privacy. The reconstructed Islamization of science proposes that digital literacy should be inseparable from ethical literacy. Educational institutions should therefore integrate Islamic ethical principles into digital citizenship education, encouraging learners to evaluate online information critically, respect intellectual property, communicate responsibly, and utilize technology for societal benefit. Students should also be encouraged to reflect upon the moral dimensions of artificial intelligence and emerging technologies, ensuring that technological innovation remains centered on human dignity, justice, and compassion. Such implementation enables digital transformation to become an instrument of holistic human development rather than merely technological modernization (Williamson & Eynon, 2022; Zawacki-Richter et al., 2023; Luckin, 2024).

Research and innovation also represent fundamental dimensions of implementing the reconstructed Islamization of science. Universities increasingly function as centers of scientific discovery and technological advancement; however, research priorities are frequently driven by commercial interests, publication metrics, and industrial competitiveness. The reconstructed paradigm encourages researchers to align scientific investigation with broader ethical and humanitarian objectives inspired by Islamic teachings. This orientation promotes

research that addresses poverty alleviation, public health, environmental sustainability, renewable energy, equitable technological access, and community empowerment. Interdisciplinary collaboration among scientists, social scientists, theologians, educators, and policymakers becomes essential for generating comprehensive solutions to contemporary societal challenges. Such collaborative research demonstrates that scientific excellence and ethical responsibility are mutually reinforcing rather than contradictory goals. Consequently, universities become institutions that not only generate knowledge but also contribute directly to social transformation and sustainable human development through responsible innovation (Kamali, 2024; Ahmed & Sahin, 2023; Bakar & Hashim, 2024).

Finally, implementing the reconstructed Islamization of science requires institutional commitment supported by educational leadership, policy development, and continuous evaluation. Educational leaders must cultivate institutional cultures that promote integrity, inclusiveness, academic freedom, ethical governance, and social responsibility alongside scientific achievement. Policies concerning curriculum, assessment, faculty development, community engagement, and research funding should consistently reflect integrated educational objectives that balance cognitive, spiritual, moral, and social development. Continuous evaluation is equally important to determine whether educational reforms effectively enhance students' ethical awareness, critical thinking, professional competence, and commitment to sustainable development. Collaboration among governments, universities, religious institutions, industries, and civil society further strengthens the implementation of this reconstructed paradigm by ensuring that educational innovations respond directly to societal needs. Ultimately, the reconstruction of the Islamization of science offers a practical educational model capable of producing graduates who combine scientific expertise with ethical leadership, spiritual maturity, and global responsibility. Such graduates are expected to become transformative agents who utilize knowledge responsibly to promote justice, peace, environmental sustainability, and human flourishing in the increasingly complex realities of the twenty-first century (UNESCO, 2024; OECD, 2023; Sahin & Albarghouthi, 2024).

CONCLUSION

This study concludes that reconstructing the Islamization of science represents a strategic and relevant educational paradigm for addressing the critical challenges of modern education in the twenty-first century. Rather than opposing contemporary scientific development, the reconstructed framework seeks to integrate empirical inquiry, rational thinking, and technological innovation with the ethical, spiritual, and moral principles of Islamic epistemology. Such integration overcomes the dichotomy between religious and secular knowledge by promoting a holistic educational system that simultaneously develops intellectual competence, ethical responsibility, spiritual awareness, and social commitment. The implementation of this reconstructed paradigm requires comprehensive reforms in curriculum design, pedagogical practices, digital education, research orientation, and

institutional leadership to ensure that scientific advancement contributes to human well-being, environmental sustainability, and social justice. Ultimately, the reconstruction of the Islamization of science offers an integrative educational model capable of producing graduates who are scientifically proficient, morally responsible, spiritually grounded, and globally competitive, enabling them to respond effectively to technological disruption, ethical dilemmas, and the increasingly complex demands of contemporary society while upholding universal values rooted in Islamic teachings (Sahin & Albarghouthi, 2024; Bakar & Hashim, 2024; UNESCO, 2024).

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