

Transforming Islamic Higher Education through Artificial Intelligence: A Conceptual Framework for Educational Management and Learning Innovation

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Abstract

- Purpose** : This study aimed to develop a conceptual framework explaining how artificial intelligence (AI) drives institutional transformation in Islamic higher education through the integration of educational management, learning innovation, research development, and Islamic ethical governance.
- Method** : The study employed a conceptual research design using a Systematic Literature Review (SLR), thematic synthesis, and conceptual synthesis. Relevant literature on artificial intelligence, higher education transformation, educational management, university governance, and Islamic higher education was reviewed following PRISMA 2020 principles. Thematic analysis involved open coding, axial coding, and selective coding, while Dynamic Capabilities Theory was used to interpret the relationships among the identified dimensions.
- Results** : The synthesis identified six interconnected dimensions of AI-driven institutional transformation: strategic leadership, institutional readiness, intelligent governance, learning innovation, research ecosystem transformation, and Islamic ethical governance. These dimensions were integrated into an AI-Driven Institutional Transformation Framework for Islamic Higher Education, positioning AI as a catalyst that reconfigures governance, learning, research, and organizational capacity while remaining guided by Islamic ethical principles.
- Conclusion** : AI-driven transformation in Islamic higher education requires more than technological adoption. Sustainable transformation depends on the integration of technological capability, institutional readiness, strategic leadership, academic innovation, and Islamic ethical governance. The proposed framework provides a theoretical foundation for future empirical testing and practical guidance for responsible AI-based institutional transformation.

Keywords: artificial intelligence; Islamic higher education; institutional transformation; educational management; learning innovation; conceptual framework.

1. Introduction

Artificial intelligence (AI) has evolved from a mere technological innovation into a transformative force that reconfigures how organizations generate knowledge, make decisions, and create value across various sectors of life. In higher education, AI is no longer understood simply as a tool to support learning but as a strategic infrastructure that influences institutional governance,

academic resource management, data-driven decision-making, research productivity, and the design of more adaptive and personalized learning experiences (Katsamakos et al., 2024). The rapid development of generative AI since the emergence of ChatGPT in late 2022 has further accelerated these changes by prompting universities worldwide to restructure academic policies, quality assurance systems, leadership models, and curriculum development mechanisms to align with an increasingly complex digital ecosystem (McDonald et al., 2025). In this context, AI is no longer positioned as an enabling technology, but as the primary driver of institutional transformation, fundamentally altering the logic of higher education delivery (Katsamakos et al., 2024). This shift marks a paradigm change from administrative digitalization toward the formation of an intelligent university—an institution that leverages data intelligence, predictive analytics, and AI-based systems to enhance organizational adaptability, decision-making quality, and the sustainability of academic innovation (Jiang & Abdullah, 2026). Therefore, the discourse on AI in higher education can no longer be confined to issues of technology implementation in the classroom but must be understood as part of a structural transformation that fundamentally reshapes the future of higher education institutions (Alshahrani et al., 2024; Barus et al., 2026).

This transformation further indicates that AI has shifted the focus of higher education discussions from technology adoption to more fundamental questions: namely, how institutions respond to paradigm shifts in governance, leadership, knowledge production, and the creation of academic value. Recent literature shows that most universities no longer face the question of whether AI should be adopted, but rather how AI can be strategically integrated into the entire organizational system without compromising academic integrity, scholarly autonomy, or the institution's ethical responsibilities (Jin et al., 2024; McDonald et al., 2025). This shift positions AI as a factor reshaping the relationship between humans, technology, and organizations, such that the success of transformation is determined not only by the sophistication of the technology used but also by the institution's readiness to build adaptive leadership, accountable governance, a collaborative academic culture, and evidence-informed decision-making mechanisms (Çanga, 2026; Jiang & Abdullah, 2026). Thus, the transformation of higher education in the AI era is a multidimensional and systemic institutional process involving interactions between organizational capacity, policy, values, human resources, and sustainable innovation—not merely the digitalization of academic activities (Gomes et al., 2025; Katsamakos et al., 2024). This perspective demonstrates that discussions on AI must shift from a technology-application-oriented approach toward one that positions AI as a catalyst for organizational change and a paradigm shift in higher education delivery (Barus et al., 2026; Zou & Wang, 2026). This conceptual shift serves as a crucial foundation for understanding how similar transformations should be examined in the context of Islamic higher education institutions, which possess distinct institutional characteristics, epistemological missions, and value orientations compared to conventional universities.

Amidst the acceleration of global digital transformation, Islamic higher education institutions face greater complexity than general higher education institutions due to their dual mandate: serving as centers for the development of knowledge while simultaneously preserving intellectual traditions and Islamic values. The transformation driven by artificial intelligence not only demands improvements in the efficiency of academic governance but also raises fundamental

questions about how technology can be integrated without displacing epistemological identity, the Islamic mission, and the institution's moral responsibility (Alpaydın & Kültür, 2022; Azra, 2019; Mumin, 2019). Unlike secular universities, which generally position AI as an instrument for improving organizational performance, Islamic universities are required to ensure that AI adoption remains aligned with the principles of *maqāṣid al-sharī'ah*, the development of academic *adab* (ethics/character), scientific integrity, and the formation of graduate character (Al-Attas, 1992; Azra, 2015; Hidayatullah & Arif, 2022; Nata, 2023). At the same time, increasing global competition, the internationalization of higher education, the digitalization of academic services, and demands for enhanced research productivity compel Islamic universities to develop more adaptive and innovative institutional capacities (UNESCO, 2023; Waskito, 2023). These conditions indicate that AI transformation within Islamic higher education is not merely a matter of technology adoption but involves a process of reconstructing the institutional paradigm that simultaneously encompasses leadership, governance, academic culture, quality assurance systems, human resource development, and value orientation (Jiang & Abdullah, 2026; Katsamakas et al., 2024). Consequently, understanding AI solely as a learning innovation yields a perspective too narrow to explain the ongoing dynamics of change within the Islamic higher education ecosystem.

Although academic attention to AI in higher education has increased significantly in recent years, research trends remain dominated by approaches oriented toward the utilization of technology in learning activities, such as the use of generative AI to enhance teaching effectiveness, personalized learning, assessment, AI literacy, and technology acceptance among faculty and students (Crompton & Burke, 2023; Zawacki-Richter et al., 2019). Other studies have begun to examine issues of AI governance, academic ethics, data privacy, and scientific integrity as consequences of the expanding implementation of AI within university environments (Barus et al., 2026; Çanga, 2026). However, these studies generally remain partial because they view AI as an object of implementation for specific functions rather than as a force reconfiguring the entire institutional paradigm of higher education (Alshahrani et al., 2024; Katsamakas et al., 2024; Zou & Wang, 2026). This limitation becomes particularly evident in the context of Islamic higher education, where the available research is largely focused on integrating AI into Islamic Religious Education learning, developing digital literacy, or discussing AI ethics from an Islamic perspective, while efforts to build a comprehensive conceptual framework explaining the institutional transformation of Islamic universities remain extremely limited (Ajizah et al., 2025; McCarthy et al., 2025; Rosyid et al., 2026; Syamsudduha et al., 2026; Zhou & Schofield, 2024). In other words, the current literature has not adequately explained how AI influences the interrelationships among strategic leadership, institutional governance, learning innovation, research ecosystem transformation, and ethical governance based on Islamic values as an integrated system. This conceptual void constitutes the primary rationale for this study's development of a framework for the institutional transformation of Islamic higher education in the age of artificial intelligence.

An analysis of the developing literature reveals at least three fundamental limitations preventing the discourse on artificial intelligence in Islamic higher education from developing into a comprehensive institutional transformation framework. *First*, the fragmentation gap: research tends to examine AI separately in the contexts of learning, digital literacy, governance, ethics, and technology acceptance, and thus has not sufficiently explained the interconnections among these

dimensions as an interrelated institutional system (Jin et al., 2024; Katsamakas et al., 2024; McDonald et al., 2025). *Second*, the contextual gap: AI transformation models and frameworks are predominantly developed based on the experiences of general universities in developed countries, while the epistemological characteristics, governance structures, and institutional missions of Islamic universities—which integrate academic functions, character formation, and the internalization of Islamic values—have not received adequate attention (Achruh et al., 2024; Sibawaihi et al., 2024; Syukur et al., 2024). *Third*, the theoretical gap: there is a lack of conceptual models that explain the mechanisms by which AI transforms the operational paradigms of Islamic universities through interactions among strategic leadership, institutional readiness, academic governance, learning innovation, research ecosystems, and ethical governance based on Islamic values (Chan, 2023; Gomes et al., 2025; Katsamakas et al., 2024). Consequently, most research remains at the level of technology implementation, without providing a theoretical explanation of the institutional transformation process driven by AI (Alshahrani et al., 2024; Jin et al., 2024). Understanding AI as a catalyst for organizational change is far more important than viewing it merely as a digital tool, because the success of higher education transformation is ultimately determined by the institution's ability to build a new configuration of technology, leadership, governance, academic culture, and value systems.

Addressing these gaps, this study posits that artificial intelligence should be positioned not as an object of pedagogical innovation but as an institutional transformation driver that reconfigures the operational paradigm of Islamic universities comprehensively. This perspective shifts the focus of discussion from technical questions about how AI is used to more fundamental questions about how AI changes the way Islamic universities are managed, generate knowledge, build academic culture, and fulfill their mission in the context of an intelligence-based society. Accordingly, this study aims to develop an AI-Driven Institutional Transformation Framework for Islamic Higher Education—a conceptual framework that integrates six main dimensions of institutional transformation: strategic leadership, institutional readiness, intelligent governance, learning innovation, research ecosystem transformation, and ethical governance based on Islamic values. Unlike previous studies that generally position AI as an instrument for enhancing the effectiveness of specific functions, the framework proposed in this study positions AI as a catalyst for change that forms new relationships between technology, organization, and values. Thus, this article not only expands the discourse on AI in Islamic higher education but also offers a conceptual model that can serve as a foundation for theory development, empirical research, and the formulation of transformation policies for Islamic higher education in the era of artificial intelligence.

2. Method

This study constitutes conceptual research oriented toward theory-building, with the aim of formulating a conceptual framework concerning the institutional transformation of Islamic higher education in the era of artificial intelligence. Unlike conceptual research that merely presents a narrative review, this study employs a Systematic Literature Review (SLR) as a methodological approach that is systematic, transparent, and replicable for identifying, evaluating, and synthesizing relevant scholarly evidence (Page et al., 2021; Zawacki-Richter et al., 2019). Thus, the

SLR in this study is not positioned as an end in itself but rather as a methodological foundation for building conceptual synthesis and generating a theoretical model that explains the mechanisms of AI-based institutional transformation in Islamic higher education.

The development of the conceptual framework was conducted through a thematic synthesis process, as developed by Thomas and Harden, which allows conceptual themes from various studies to be integrated into analytical themes as the basis for forming a new theoretical model (Thomas & Harden, 2008). Furthermore, the interpretation of these themes was guided by Dynamic Capabilities Theory as developed by Teece, so that the relationships among dimensions in the resulting framework are not only based on the emergence of themes in the literature but also possess a theoretical foundation that explains how Islamic universities build adaptive capabilities in responding to AI-driven transformation (Teece, 2007).

The literature review process followed the principles of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines, which include four main stages: identification, screening, eligibility, and inclusion (Page et al., 2021). Literature searches were conducted in the Scopus, Web of Science, Dimensions, and Crossref databases to obtain reputable publications addressing artificial intelligence, higher education transformation, university governance, educational management, and Islamic higher education. The search utilized combinations of keywords such as artificial intelligence, generative AI, higher education, digital transformation, educational management, university governance, Islamic higher education, Islamic university, institutional transformation, and learning innovation. The review focused on scholarly articles published in English, primarily within the 2020–2026 timeframe, to ensure representation of the most recent developments in AI in higher education.

The articles obtained were then selected based on pre-established inclusion and exclusion criteria. Inclusion criteria comprised: (1) articles having undergone a peer-review process; (2) discussion of AI in the context of higher education, institutional transformation, educational governance, or Islamic higher education; (3) presentation of empirical findings, conceptual contributions, or systematic reviews relevant to the research objectives; and (4) availability of full text. Conversely, articles focusing on primary and secondary education, non-scholarly publications, proceedings without peer review, editorials, and articles exclusively addressing the technical aspects of AI algorithm development were excluded from the analysis as they were not relevant to the research focus.

The data meeting the criteria were analyzed using thematic synthesis, a synthesis technique aimed at identifying recurring patterns, themes, and conceptual relationships across various studies. The analysis proceeded through three stages: open coding to identify key concepts, axial coding to group related concepts, and selective coding to establish inter-theme relationships into a coherent conceptual structure (Thomas & Harden, 2008). This approach enabled diverse findings from the literature on leadership, governance, learning, research, institutional readiness, and AI ethics to be synthesized into a unified institutional transformation model.

The final stage of the research employed conceptual synthesis to develop the AI-Driven Institutional Transformation Framework for Islamic Higher Education. At this stage, the synthesized themes were not treated as independent categories but were analyzed based on their causal, functional, and systemic interrelationships to form a conceptual framework explaining how

AI acts as a driver of Islamic higher education transformation. Thus, the research findings extend beyond literature mapping to generate a conceptual model that provides a theoretical contribution to the study of Islamic higher education transformation while offering a foundation for future empirical research and policy formulation.

3. Result

Evolution of AI in Higher Education: From Digitalization to Institutional Transformation

The results of the synthesis of the literature indicate that the evolution of Artificial Intelligence (AI) in higher education has been marked by a significant shift from operational digitalization toward institutional transformation. In the early phase, the application of digital technologies in universities was primarily directed toward enhancing administrative efficiency through the implementation of Learning Management Systems (LMS), Enterprise Resource Planning (ERP), digital libraries, academic information systems, and various information technology-based services. During this phase, digitalization was understood as an effort to optimize operational processes without altering the fundamental governance structures or institutional paradigms. AI had not yet played a strategic role in decision-making, organizational development, or knowledge creation, but rather functioned as a support tool for enhancing the effectiveness of academic services (Benavides et al., 2020; OECD, 2023; UNESCO, 2023).

The development of machine learning, big data analytics, and particularly generative artificial intelligence since late 2022 has driven more fundamental changes in the higher education system. Various studies show that AI has begun to be used not only to support the learning process but also for institutional data analysis, strategic planning, research management, quality assurance, student services, and data-driven decision-making. Consequently, AI has undergone a functional shift from an operational technology to a strategic capability influencing various core university functions in an integrated manner (Gomes et al., 2025; Jiang & Abdullah, 2026; Katsamakas et al., 2024).

The literature synthesis also reveals a change in the orientation of higher education transformation. Whereas digitalization in the previous decade emphasized process efficiency and infrastructure modernization, AI implementation promotes the formation of institutional management models that are more adaptive, predictive, and data-intelligence-based. Universities are no longer merely using technology to support academic activities but are beginning to integrate AI into governance mechanisms, strategic decision-making, learning innovation, research development, and continuous quality management. These findings indicate that the evolution of AI in higher education represents a shift from digital transformation toward institutional transformation—changes that not only impact technology but also affect organizational structures, academic processes, and the institution's overall adaptive capacity (Katsamakas et al., 2024; OECD, 2023; Suradji et al., 2025; Syukur et al., 2024; UNESCO, 2023).

Emerging Dimensions of AI-Driven Institutional Transformation

The results of thematic synthesis of the literature indicate that the institutional transformation of higher education in the era of artificial intelligence does not occur partially but rather through a series of interrelated dimensions. Although previous studies have employed diverse terminologies, the synthesis of recurring themes reveals six main dimensions that consistently emerge as

foundations of institutional transformation: strategic leadership, institutional readiness, intelligent governance, learning innovation, research ecosystem transformation, and Islamic ethical governance. These six dimensions do not stand alone but form a system that determines a university's ability to integrate AI into academic and organizational functions sustainably (Gomes et al., 2025; Katsamakas et al., 2024; UNESCO, 2023).

The first dimension is strategic leadership, which refers to the capacity of university leaders to articulate a transformation vision, establish policy directions, allocate resources, and create an organizational culture that supports responsible AI adoption. The literature synthesis demonstrates that the success of AI transformation is significantly influenced by leadership commitment to managing organizational change, fostering cross-unit collaboration, and integrating digital innovation into institutional strategy. Without adaptive leadership, AI implementation tends to remain limited to sporadic technological projects that fail to generate sustainable institutional change (Jiang & Abdullah, 2026; Katsamakas et al., 2024; Teece, 2007).

The second dimension is institutional readiness, encompassing organizational readiness in terms of digital infrastructure, human resource quality, data governance, internal regulations, innovation culture, and organizational capacity to manage change. The literature shows that institutional readiness is a primary prerequisite for effective AI implementation, as it determines a university's ability to adopt new technologies while mitigating associated risks, including digital competency gaps, data security issues, and organizational resistance to change (Barus et al., 2026; Gomes et al., 2025; OECD, 2023; Sibawaihi et al., 2024).

The third dimension is intelligent governance, the transformation of university governance through the utilization of AI to support data-driven decision-making, strategic planning, quality assurance, risk management, and improved academic service effectiveness. Various studies indicate that AI enables institutions to develop governance systems that are more predictive, responsive, and adaptive compared to conventional administrative models. This shift expands AI's function from a mere automation tool to an instrument supporting strategic decision-making at the institutional level (Benavides et al., 2020; Gomes et al., 2025; Jiang & Abdullah, 2026; Sibawaihi et al., 2024).

The fourth dimension is learning innovation, encompassing the transformation of instructional design through material personalization, intelligent tutoring systems, adaptive assessment, learning analytics, and the integration of generative AI in teaching and learning processes. Synthesis results show that learning innovation is the most extensively discussed dimension in the higher education AI literature. However, the research findings also demonstrate that the effectiveness of such innovation is heavily influenced by the quality of institutional governance, leadership, and organizational readiness, meaning that learning cannot be separated from the broader context of institutional transformation (Crompton & Burke, 2023; McDonald et al., 2025; UNESCO, 2023; Zawacki-Richter et al., 2019).

The fifth dimension is research ecosystem transformation, referring to changes in the research ecosystem through the utilization of AI to support literature searching, data analysis, identification of research trends, development of scientific collaboration, and dissemination of research results. The literature synthesis shows that AI contributes to increased research productivity and efficiency while simultaneously transforming patterns of knowledge production through collaboration

between researchers and artificial intelligence systems. Therefore, AI not only affects the research process but also reconfigures the scholarly ecosystem within universities (Gomes et al., 2025; Katsamakos et al., 2024; Sibawaihi et al., 2024; Suradji et al., 2025; UNESCO, 2023).

The final dimension is Islamic ethical governance, which emerges as a distinctive characteristic in the context of Islamic higher education. Unlike general AI governance models in universities, which tend to emphasize regulatory aspects, data privacy, and accountability, the literature on Islamic higher education highlights the importance of integrating Islamic values such as *maqāṣid al-sharī'ah*, trustworthiness (*amanah*), justice (*'adl*), public welfare (*maṣlahah*), and moral responsibility in every stage of AI development and utilization. This finding indicates that AI transformation in Islamic universities is determined not only by technological and organizational readiness but also by the institution's ability to balance digital innovation with the ethical-scholarly mission that constitutes its identity (Achruh et al., 2024; Ajizah et al., 2025; Syukur et al., 2024).

Based on these synthesis results, the six dimensions described above are regarded as the main components shaping the institutional transformation of Islamic higher education in the era of artificial intelligence. These findings subsequently serve as the foundation for the development of a conceptual framework explaining the interrelationships among dimensions as an integrated transformation system.

AI-Driven Institutional Transformation Framework for Islamic Higher Education

Based on the results of thematic synthesis, this study develops an AI-Driven Institutional Transformation Framework for Islamic Higher Education – a conceptual framework that explains how artificial intelligence drives institutional transformation through systemic interactions between leadership, organizational readiness, governance, academic innovation, research ecosystems, and Islamic values. Unlike AI implementation models that typically position technology as an instrument for improving specific functions, the framework proposed in this study positions AI as a transformation catalyst affecting the entire Islamic higher education ecosystem.

The synthesis results indicate that institutional transformation begins with the existence of Artificial Intelligence Capability – the institution's ability to leverage AI technology, data, digital infrastructure, and human resources as a foundation for organizational change. This capability does not automatically produce transformation but first influences the level of Institutional Readiness, reflecting organizational preparedness in terms of leadership, governance, internal regulations, innovation culture, digital competencies, and change readiness. The higher the level of institutional readiness, the greater the likelihood of AI being effectively integrated into academic and managerial processes.

Institutional readiness subsequently becomes a prerequisite for the formation of Strategic Leadership – leadership capable of translating AI potential into vision, policies, strategic priorities, and organizational change management. Within this framework, strategic leadership functions not only as a decision-maker but also as a bridge between technological innovation and institutional transformation. Through such leadership, AI begins to be integrated into various core university functions, generating changes in three main institutional domains: Intelligent Governance, Learning Innovation, and Research Ecosystem Transformation.

Intelligent Governance describes governance transformation through the utilization of AI to support data-driven decision-making, quality assurance, risk management, academic services, and strategic planning. Simultaneously, Learning Innovation represents changes in the educational process through learning personalization, adaptive assessment, learning analytics, and the use of AI to enhance the quality of learning experiences. Meanwhile, Research Ecosystem Transformation signifies changes in the research ecosystem through AI utilization in literature searching, data analysis, scientific collaboration, research trend identification, and knowledge dissemination. These three domains do not develop in isolation but mutually reinforce each other in building more adaptive and innovative institutional capacity.

In the context of Islamic higher education, the entire transformation process is enveloped by the Islamic Ethical Governance dimension. Synthesis results indicate that Islamic values do not function as an additional component but as a normative principle guiding the entire AI transformation process to remain aligned with the aims of Islamic education. Therefore, this dimension serves as an ethical framework ensuring that AI utilization upholds the principles of *maqāṣid al-sharī'ah*, *amanah*, justice ('*adl*), public welfare (*maṣlahah*), accountability, and respect for human dignity. Thus, technological innovation is measured not only by efficiency and productivity but also by its contribution to character formation, the development of meaningful knowledge, and the institution's social responsibility.

Based on the interrelationships among these dimensions, this study views institutional transformation as a process that occurs in gradual and interdependent stages. AI provides technological capabilities that drive institutional readiness; institutional readiness strengthens strategic leadership; leadership directs the transformation of governance, learning, and research; and Islamic values serve as an ethical foundation that ensures the transformation direction remains consistent with the identity and mission of Islamic universities. The final outcome of this process is the formation of a Transformative Islamic Higher Education—Islamic universities capable of leveraging artificial intelligence to enhance academic quality, strengthen governance, develop scholarly innovation, and expand social contributions without abandoning the value orientation that constitutes their fundamental character.

4. Discussion

Artificial Intelligence Reconfigures the Paradigm of Islamic Higher Education

The results of conceptual synthesis indicate that artificial intelligence can no longer be understood as a technological innovation that merely enhances the efficiency of learning or academic administration. Rather, AI has evolved into an institutional force that reconfigures the operational paradigm of Islamic universities comprehensively. This shift marks a fundamental transition from a process-oriented digitalization approach toward institutional transformation that affects how universities build governance, develop leadership, generate knowledge, manage research, and fulfill their Islamic educational mission. Thus, AI is no longer merely an object of innovation but a factor reshaping the organizational logic of the university.

This transformation demonstrates that the success of AI implementation is determined not by the level of technological sophistication possessed by the institution but by the university's ability to integrate such technology into the overall organizational system. This finding reveals that

institutional transformation occurs through close interactions among strategic leadership, organizational readiness, governance, learning innovation, research ecosystem transformation, and ethical governance grounded in Islamic values. Consequently, AI does not produce change automatically but functions as a catalyst accelerating institutional reorganization processes when supported by adequate organizational capacity.

This interpretation simultaneously broadens the perspective on Islamic higher education transformation. Hitherto, AI discourse has tended to position technology as a solution to learning problems, whereas this study's findings show that real change occurs at the institutional level. Islamic universities are entering a new phase where AI not only affects academic activities but also changes leadership patterns, decision-making mechanisms, knowledge governance, and the relationship between technological innovation and Islamic values. In other words, AI has triggered a reconfiguration of the Islamic university paradigm from a digitalization-oriented institution toward one that builds adaptive capacity through the integration of technology, organization, and ethics.

Based on this interpretation, this study proposes Proposition 1: Artificial Intelligence functions as an institutional transformation driver, not merely as educational technology, in the context of Islamic higher education. This proposition asserts that AI's impact lies not in its technological capabilities alone but in the institution's capacity to reconfigure governance, leadership, learning, research, and value systems into an integrated ecosystem. Thus, the transformation of Islamic higher education in the AI era constitutes an institutional paradigm shift, not simply a process of technology adoption.

Explaining AI-Driven Institutional Transformation through Dynamic Capabilities Theory

The findings of this study are strongly supported theoretically by the Dynamic Capabilities Theory developed by Teece, Pisano, and Shuen (Teece et al., 1997) and further expanded by Teece (2007). This theory posits that organizational success in facing rapidly changing environments is determined not solely by resource or technology ownership but by the organization's ability to sense change, seize opportunities, and transform organizational capabilities continuously. In the context of Islamic higher education, AI cannot be understood as a factor that automatically generates institutional transformation. Instead, AI provides strategic opportunities that will yield change only if the institution possesses dynamic capabilities to integrate technology, human resources, governance, and organizational culture into an adaptive system.

Based on this framework, the Artificial Intelligence Capability identified in this study represents the sensing stage—the university's ability to recognize changes in the external environment, technological developments, and strategic opportunities arising from the AI revolution. At this stage, AI is viewed as a source of information, knowledge, and analytical capacity enabling the institution to understand global higher education dynamics more rapidly and accurately. However, the ability to sense change does not automatically produce transformation unless followed by organizational readiness to respond to these opportunities.

The subsequent stage, seizing, is reflected through Institutional Readiness and Strategic Leadership. The study's findings indicate that institutional readiness is not limited to the availability of digital infrastructure but also encompasses human resource competencies, data governance,

innovation culture, internal policies, and the organization's capacity to manage change. Strategic leadership then plays a role in translating the opportunities offered by AI into vision, policies, investments, and institutional priorities. Thus, leadership is no longer understood as an administrative function but as a strategic mechanism determining whether AI will become a fleeting innovation or develop into a transformational force for the institution.

The final stage, transforming, materializes through the reconfiguration of core university functions, encompassing Intelligent Governance, Learning Innovation, and Research Ecosystem Transformation. These three dimensions demonstrate that AI transformation does not stop at technology adoption but produces structural changes in decision-making mechanisms, learning delivery, knowledge production, quality assurance, and academic service development. From the Dynamic Capabilities perspective, such changes represent a reconfiguration of organizational resources to enable the institution to maintain relevance and competitiveness in a continuously changing environment.

Nevertheless, this study demonstrates that the application of Dynamic Capabilities Theory in the context of Islamic higher education requires conceptual expansion. This theory was fundamentally developed within business organizational contexts emphasizing competitive advantage creation through resource reconfiguration. In contrast, this study's findings show that Islamic university transformation is directed not only toward enhancing organizational effectiveness but also toward preserving scholarly identity, moral responsibility, and the Islamic educational mission. Therefore, the Islamic Ethical Governance dimension functions as a normative mechanism directing the entire sensing, seizing, and transforming processes to remain aligned with the principles of *maqāṣid al-sharī'ah*, *amanah*, justice, public welfare, and respect for human dignity. Thus, Islamic values are not positioned as limitations on technological innovation but as an ethical framework ensuring that AI transformation proceeds responsibly and with a focus on public welfare.

Based on this interpretation, this study proposes Proposition 2: The institutional transformation of Islamic higher education in the era of artificial intelligence proceeds through the formation of dynamic capabilities that integrate technological capacity, strategic leadership, organizational readiness, and ethical governance grounded in Islamic values. This proposition extends the application of Dynamic Capabilities Theory from business organizational contexts to Islamic higher education contexts by positioning the ethical-religious dimension as an integral element in the institutional transformation process.

Towards an AI-Driven Institutional Transformation Model for Islamic Higher Education

The first theoretical contribution of this study lies in shifting the unit of analysis in the study of artificial intelligence in higher education. Most previous research has positioned AI as a technology influencing specific activities such as learning, assessment, digital literacy, academic integrity, or data governance. These perspectives have yielded rich understandings of AI implementation at the functional level but have not fully explained how AI transforms the organizational configuration of universities as a holistic system. This study demonstrates that AI must be understood as an institutional phenomenon affecting the relationships among leadership, governance, learning, research, and organizational values simultaneously. Thus, the analytical focus shifts from AI in higher education to AI-driven institutional transformation, positioning AI as

an organizational change driver rather than merely a technological tool supporting academic activities.

The second contribution relates to the integration of various transformation dimensions that have tended to be studied separately. The literature on AI in higher education has developed in various directions, such as AI-enhanced learning, AI governance, learning analytics, research intelligence, and digital leadership. Each has made important contributions to understanding AI's impact, but they have not yet produced an explanation of the systemic relationships among these dimensions. This study offers a conceptual framework demonstrating that strategic leadership, institutional readiness, intelligent governance, learning innovation, research ecosystem transformation, and ethical governance are not standalone components but form an interdependent institutional transformation mechanism. Thus, this study expands the AI in higher education discourse from a sectoral approach toward a systemic approach.

The third contribution lies in contextualizing organizational transformation theory within the characteristics of Islamic higher education. Unlike digital transformation models generally developed based on the experiences of general universities or business organizations, this study shows that AI transformation in Islamic universities occurs within an institutional context possessing distinctive epistemological, moral, and social orientations. Therefore, the Islamic Ethical Governance dimension is positioned as a cross-cutting principle framing the entire institutional transformation process. Within this framework, Islamic values are not understood as limitations on technological innovation but as a normative mechanism ensuring that every form of transformation remains oriented toward public welfare, justice, accountability, and the development of responsible knowledge. This perspective enriches the study of higher education transformation by demonstrating that the success of AI implementation is determined not only by technological and organizational readiness but also by the institution's ability to maintain coherence between digital innovation and the value system constituting its identity.

Based on these three contributions, this study proposes Proposition 3: The transformation of Islamic higher education in the era of artificial intelligence is a process of institutional reconfiguration that can only proceed sustainably when the integration of technology, organization, and governance occurs within the framework of Islamic values as a normative principle guiding change. This proposition asserts that AI transformation in the context of Islamic higher education is not merely a matter of technology adoption but rather a process of forming a new institutional paradigm that integrates digital capabilities, strategic leadership, and Islamic ethics as the foundation for future institutional development.

5. Conclusion

This study has developed a conceptual framework explaining how artificial intelligence (AI) drives institutional transformation in Islamic higher education through interactions among technological capability, organizational readiness, strategic leadership, intelligent governance, learning innovation, research ecosystem transformation, and ethical governance grounded in Islamic values. Unlike most previous studies positioning AI as a technology supporting specific academic functions, this study demonstrates that AI must be understood as an institutional

transformation driver reconfiguring the operational paradigm of Islamic universities comprehensively. Thus, AI transformation is no longer viewed as a process of technology adoption but as a process of institutional reorganization reshaping governance, leadership, knowledge production, and academic culture within the framework of Islamic values.

The primary contribution of this study lies in the development of the AI-Driven Institutional Transformation Framework for Islamic Higher Education—a conceptual model integrating various transformation dimensions that have tended to be discussed separately in the literature. The framework also demonstrates that Islamic values are not merely external ethical considerations but constitute a normative principle framing the entire institutional transformation process. By contextualizing Dynamic Capabilities Theory within the Islamic higher education environment, this study offers a new perspective that the success of AI transformation depends on the institution's ability to build adaptive capabilities that sustainably integrate technology, organization, and values.

Practically, the proposed conceptual framework can serve as a reference for Islamic higher education leaders, policymakers, and quality assurance bodies in designing AI-based institutional transformation strategies that are oriented not only toward efficiency and innovation but also toward maintaining academic integrity, social responsibility, and the Islamic identity of the institution. This approach is expected to help Islamic universities respond to global higher education dynamics without losing their epistemological character and educational mission.

As this study is conceptual in nature, the framework generated still requires empirical testing across various institutional contexts. Therefore, future research could develop and validate this model through quantitative approaches such as Structural Equation Modeling (SEM) or Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the relationships among the proposed dimensions. Additionally, multiple case studies or longitudinal research across various Islamic higher education institutions in different countries would provide a more comprehensive understanding of the dynamics of AI-based institutional transformation. Future research also needs to explore how Islamic Ethical Governance can be operationalized into institutional policies, governance indicators, and quality assurance standards for AI relevant to the future development of Islamic higher education.

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