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# Institutional Narrative of Digital Transformation: Toward an Educational Innovation Management Model to Enhance Higher Education Competitiveness

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## ABSTRACT

**Backraud:** The development of digital technology has encouraged higher education institutions to innovate in their learning systems and institutional governance to increase competitiveness. Various studies have addressed the adoption of digital technology in education, but a clear gap remains regarding the lack of integrated, systematic, and contextual innovation management that links the use of digital technology with increased higher education competitiveness.

**Purpose:** This study aims to analyze the Institutional Narrative of Digital Transformation: Towards an Educational Innovation Management Model to Enhance the Competitiveness of Higher Education Institutions.

**Method:** This research employs a qualitative approach with conceptual and narrative analysis of the literature on digital transformation, educational innovation, and institutional competitiveness. The data sources are scientific publications relevant to the research topic. Data collection techniques include a systematic literature search using scientific databases.

**Results:** Digital transformation in higher education is not merely a strategic choice, but rather an urgent necessity to maintain the relevance, competitiveness, and sustainability of institutions in an era of technological disruption. This urgency is reinforced by several findings: First, there is a clear gap between graduate competencies and the needs of the workforce due to changes in the educational and industrial landscape. Second, awareness of the importance of change has increased, but its implementation is still hampered by limited infrastructure and low digital literacy. Third, the success of the transformation is determined by transformative leadership and collaborative governance between government, industry, and the academic community. Fourth, digital transformation must be understood as a comprehensive and ongoing process, capable of adapting and continuously strengthening the organization's capacity to face the dynamics of change.

**Conclusion:** Digitalization technology must be realized as a transformation encompassing changes in work processes, interaction patterns, and data-driven decision-making. This process must be gradual and sustainable, starting with vision, capacity building, system integration, monitoring, and adaptation. This integrated process will excel in efficiency, innovation, and global competitiveness, becoming a strategic step for the institution's future.

## KEYWORDS

Educational Management Model, Educational Innovation, Digital Technology, Higher Education Competitiveness

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## INTRODUCTION

The rapid development of digital technology in recent years has given rise to various disruptive innovations that are transforming nearly every aspect of life, including the education sector. Several contemporary issues have emerged along with the adoption of this technology, such as the use of artificial intelligence (generative AI) in academic assignments, concerns about plagiarism and academic integrity, the digital literacy gap among lecturers and students, and ethical challenges in the use of educational data (Mere, 2026).

Furthermore, the emergence of digital platform-based learning, microlearning, and the use of learning analytics to personalize the learning experience has also emerged. These issues demonstrate that digital transformation not only brings opportunities but also demands institutional readiness to manage change wisely and responsibly (Munandar, 2025).

The integration of artificial intelligence (AI) into Indonesian education represents a transformation toward a more adaptive and data-driven system. AI enables personalized learning and improves institutional management efficiency through automation and data analysis. However, its implementation remains hampered by infrastructure gaps, potential algorithmic bias, privacy concerns, and low AI literacy among educators (Haetami, 2025). The development of AI has resulted in a series of advances and innovations that have impacted many aspects of human life. As a fundamental component of societal evolution and individual development, education has benefited significantly from AI breakthroughs (Kamalov et al., 2023).

The rapid integration of digital technologies has significantly transformed educational management practices. However, the specific roles and functions of technology at various levels of education remain insufficiently synthesized (Sari & Adiansyah, 2025). In a global context, technological developments strengthen the role of technology in education, particularly in the production and interaction of knowledge. This encourages higher education institutions to strategically integrate digital technologies to improve service quality, operational efficiency, and international competitiveness. The intersection of education and technology has given rise to new possibilities and challenges, requiring a comprehensive understanding of the dynamics involved. This introduction lays the foundation for a literature review addressing the realm of educational management in the digital age, with a focus on technology integration to enhance student success (Manaf, 2024).

In the context of global competition, the competitiveness of higher education institutions is a crucial indicator in assessing their quality. Universities with high competitiveness are generally able to develop innovations in educational management, optimally utilize digital technology, and respond to changing societal and professional needs (Al-Abdullatif & Gameil, 2021). However, many universities still face various challenges in managing digital technology-based educational innovation, such as limited technological infrastructure, low digital literacy among human resources, and the lack of a systematic and integrated innovation management model. Therefore, developing educational innovation is a crucial strategy for enhancing the competitiveness of higher education institutions. The use of technology in higher education demonstrates different impacts on various disciplines and indicates the level of educator readiness and the need for professional development (McManus et al., 2024). This is also in line with the Sustainable Development Agenda which seeks to encourage rapid technology diffusion and global interconnectivity, creating significant prospects for human progress, closing the digital divide, and building a knowledge-based society (Alshammari dkk., 2023).

Educational innovation can be defined as the process of developing and implementing new ideas, methods, or technologies aimed at improving the quality of educational processes and

outcomes. The role of technology in education is very prominent and takes various forms depending on the purpose of adopting information technology and the information technology system adopted (M AlQenaei et al., 2021). The Role of Higher Education in Sustainable Development The importance of higher education in promoting sustainable development is increasing at all levels of education, but especially in higher education. Higher education institutions are strategic because they are focal points for supporting sustainability at the global level (Alshammari et al., 2023).

In the digital era, educational innovation is not only limited to the development of technology-based learning methods, but also encompasses innovations in educational management systems, institutional governance, and digital management of educational resources. Optimizing content delivery through digital technologies such as AI can improve educational accessibility and promote inclusive and equitable education (Alshahrani, 2023).

Although the use of digital technology and artificial intelligence-based learning has shown significant potential in improving the quality of learning and the efficiency of higher education management, implementation still presents challenges. This implementation tends to be partial and has not been integrated into a systematic innovation management framework. Research results (Mulyadi et al., 2025) The success of digital transformation in higher education depends less on the availability of technology and more on the quality of the leadership that guides it. Leadership must go beyond administrative management and embrace a human-centered approach that encourages ownership, reduces resistance, and aligns institutional culture with digital change.

The use of digital technologies such as Learning Management Systems (LMS), academic information systems, online learning platforms, and educational data analytics has opened up opportunities for universities to improve the quality of educational services more effectively and efficiently.

This research aims to analyze and develop an effective digital technology-based educational innovation management model to enhance the competitiveness of higher education institutions. Specifically, this research aims to analyze the implementation of technology-based educational innovation management to enhance the competitiveness of higher education institutions.

Significance: This research is important because digital transformation in higher education demands an effective and adaptive innovation management strategy to technological developments. Without a clear management model, the implementation of digital technology in education often fails to run optimally and does not have a significant impact on improving the quality of institutions. Therefore, this research is expected to provide conceptual and practical contributions to higher education institutions in managing digital technology-based educational innovations more systematically to improve institutional competitiveness. The results of the study reveal a paradigm shift in the educational management paradigm towards technology integration, along with the emergence of innovative strategies to overcome implementation challenges. Visionary leadership, stakeholder engagement, strategic planning, and strong infrastructure are identified as key components in effectively navigating digital transformation in the educational environment (Dacholfany et al., 2024).

Several previous studies have shown that the use of digital technology plays an important role in improving the quality of higher education, as stated (Alshammari et al., 2023) Although digital technology introduces many benefits, it also poses serious threats to system security and personal privacy (McManus dkk., 2024). Innovation is a new idea or practice that can improve the effectiveness of a system. In the context of education, innovation can take the form of applying digital technology to the learning process or the management of educational institutions. Other research results by (Le Dinh et al., 2025) emphasizes that digital technology can open up new

opportunities that support student growth and development in higher education and can reduce time costs while maintaining accuracy, transparency, and user control. This is also supported by research findings showing that the use of digital technology in academics directly impacts students' thinking skills and active engagement in lectures (Kim et al., 2020). Thus, it can be concluded that previous studies have focused on the benefits and uses of digital technology/AI in improving learning effectiveness and educational efficiency. Both emphasize the impact of technology on educational processes and outcomes.

Meanwhile, the research to be conducted will not only discuss the use of technology, but will also focus on developing a digital technology-based educational innovation management model. This means that this research emphasizes how technology can be managed strategically, integratedly, and sustainably to enhance the competitiveness of higher education institutions.

In other words, whereas previous research addressed the benefits of technology, this study addresses how to systematically manage technological innovation to enhance institutional competitiveness. Therefore, this study's position is to develop and deepen previous research, offering a new contribution in the form of a digital technology-based educational innovation management model that focuses not only on learning but also on comprehensive institutional management to enhance the competitiveness of higher education institutions.

This research is based on the hypothesis that implementing a digital technology-based educational innovation management model has a positive impact on increasing the competitiveness of higher education institutions. The scope focuses on developing a digital technology-based educational innovation management model in the context of higher education, with an emphasis on the managerial and strategic aspects of managing innovation to enhance institutional competitiveness. However, this research has limitations because it uses a conceptual approach based on literature studies, thus lacking direct empirical validation in the field. Furthermore, the resulting model is still general and requires further testing to adapt it to the various characteristics of higher education institutions.

Despite these limitations, this research is expected to make important contributions, both theoretically and practically. Theoretically, this research enriches educational management studies by offering an integrated digital technology-based innovation model. Practically, this research can serve as a reference for higher education institutions in designing and managing educational innovation more systematically to enhance institutional competitiveness sustainably. This research uses a qualitative approach with a literature review and conceptual analysis to examine various theories and previous research findings related to educational innovation management and digital technology. Data analysis is conducted descriptively to formulate a digital technology-based educational innovation management model that can enhance the competitiveness of higher education institutions.

Some key terms used in this study include: Educational Innovation Management is the process of planning, organizing, implementing, and evaluating various innovations in the education system to improve the quality and effectiveness of education management. Digital technology refers to the use of digital-based information and communication technologies, such as online learning systems, digital platforms, and academic information systems, in education management. Higher education competitiveness is the ability of higher education institutions to produce quality graduates, enhance their academic reputation, and compete nationally and internationally.

## RESEARCH METHODOLOGY

This research employs a qualitative approach, employing library research and conceptual analysis. This approach aims to examine various theories, concepts, and previous research findings related to educational innovation management, the use of digital technology in education, and the competitiveness of higher education institutions. Through this literature review and conceptual analysis, this research seeks to formulate a digital technology-based educational innovation management model that can be used as a strategic framework to enhance the competitiveness of higher education institutions.

The data sources for this research are secondary data, namely various scientific publications relevant to the research topic. These sources include: 1) National and international scientific journal articles discussing educational innovation, educational management, and digital transformation in higher education. 2) Scientific books related to innovation management theory, educational technology, and higher education management. 3) Research reports and educational policy documents related to the implementation of digital technology in higher education institutions.

The literature used in this research primarily comes from scientific publications from the past 10 years to illustrate recent developments related to digital technology-based educational innovation. Data collection techniques in this research were conducted through a systematic literature search utilizing various scientific databases, such as Google Scholar, Scopus, and national journal portals. The search process was carried out using relevant keywords, including educational innovation management, digital technology in higher education, digital transformation in education, and competitiveness of higher education.

This research began with the problem identification stage, which examined various issues related to educational innovation and the use of digital technology in higher education. Next, literature was collected by gathering various reference sources relevant to the research topic. The collected literature was then classified and selected based on the study theme to ensure its suitability and relevance. The next stage was conceptual analysis, which examined various concepts and theories related to educational innovation management and digital technology. Based on the results of this analysis, a conceptual model for digital technology-based educational innovation management was formulated, which is expected to enhance the competitiveness of higher education institutions.

The data analysis techniques used in this study were descriptive and conceptual analysis. Descriptive analysis was conducted by reviewing and interpreting various previous research findings related to digital technology-based educational innovation. To ensure data validity, this study employed source triangulation, comparing different literature sources to gain a more comprehensive understanding of the concept of digital technology-based educational innovation management. Furthermore, the literature used was selected from highly credible scientific sources such as indexed journals and publications from international educational institutions.

## RESULT AND DISCUSSION

### The Urgency Narrative in Digital Transformation of Higher Education

The digital transformation in higher education has emerged as an unavoidable necessity. Universities today find themselves in a situation that reflects the simultaneous tension between maintaining long-standing academic traditions and adapting to rapid technological change. The narrative of urgency is not only constructed from normative discourse but also from empirical realities that demonstrate that changes in the external environment of higher education have fundamentally shifted the way education is delivered. The development of digital technology has

created a new landscape in the world of education. Technology has revolutionized the way we approach language teaching and learning, empowering teachers to personalize instruction, and, in particular, sustaining teaching and learning (Huang & Sun, 2023).

Furthermore, learning is no longer dependent on physical space, but rather moving towards a virtual space that enables interaction without geographical boundaries. Universities are faced with the reality that students now live in a digital ecosystem that forms new expectations for the learning experience. They no longer simply desire knowledge transfer, but also flexibility, interactivity, and instant access to information. In this situation, the inability of institutions to adapt will directly impact the declining relevance of the education offered.

The narrative of change is also reinforced by the demands of the industrial world, which increasingly emphasizes the importance of digital competencies. Universities no longer function solely as educational institutions, but also as providers of human resources ready to face the dynamics of a technology-based job market. Artificial intelligence, with its transformative potential, will substantially impact modern education, despite the debate surrounding its application and the limitations of certain technologies (Grassini, 2023).

The gap between graduate competencies and industry needs is a key factor driving the acceleration of digital transformation. Thus, change is no longer a strategic option but rather a pressing operational necessity.

The impetus for this transformation does not originate from a single actor, but rather the result of the interaction of various interests. The government plays a role through policies and regulations that encourage the digitalization of education, while industry exerts pressure through the need for a technology-adaptive workforce. Meanwhile, students, as the digital native generation, indirectly become agents of change through their demands for more modern learning systems. However, the most decisive actors remain at the internal level of higher education institutions, particularly institutional leadership, which plays a strategic role in directing the vision and implementation of transformation. Although the urgency of change is widely understood, the implementation of digital transformation is not without obstacles. Many higher education institutions face several obstacles related to limited adequate technological infrastructure, particularly in terms of access and system integration. Furthermore, human resource readiness poses a significant challenge. Not all lecturers and educational staff possess sufficient digital competencies to effectively adopt technology. In some cases, resistance to change stems from a comfort with long-standing, conventional methods. Amidst these challenges, digitalization has been interpreted differently by universities. In its early stages, digitalization was often understood simply as the use of technology in the learning process, such as the implementation of online platforms or learning management systems. However, over time, this understanding has shifted to a more comprehensive concept, namely a systemic transformation encompassing changes in curriculum, governance, and organizational culture.

In the context of competitiveness, digital transformation is a strategic instrument that enables higher education institutions to improve quality and relevance. Institutions that effectively integrate technology tend to excel in providing innovative, efficient, and globally connected learning experiences. Furthermore, digitalization also opens up opportunities for cross-border collaboration, expands access to academic resources, and enhances institutional visibility internationally. Overall, the narrative of the urgency of digital transformation in higher education reflects a profound paradigm shift. Higher education institutions can no longer be understood as static institutions, but rather as dynamic entities that must continuously adapt to environmental changes. Within this framework, digital transformation is not simply a response to technological developments, but a

strategic effort to maintain relevance, enhance competitiveness, and ensure the sustainability of higher education institutions' roles in the global knowledge-based ecosystem.

**Narratives of Resistance and Readiness in Institutional Innovation in Higher Education**

Changes in the implementation of higher education today do not arise in a vacuum, but rather grow out of the pressures of an increasingly complex era where digital technology is transforming the way people learn, work, and interact, while the industrial world moves faster than the education system that has long been considered established. In this context, higher education must build a grand narrative that shows that change is no longer a strategic option, but rather an existential necessity. If institutions do not change, they will be left behind, lose relevance, and ultimately be abandoned by future generations.

This narrative of change begins with an awareness of disruption. The rapid advancement of digital technology, artificial intelligence, and online learning platforms is creating a new landscape that no longer relies on physical classrooms. Students are seeking not only degrees but also flexible, relevant, and real-world learning experiences. The world of work no longer seeks graduates who are merely theoretically strong, but rather those who are adaptable, creative, and able to collaborate in a digital environment. Higher education institutions, in this context, are required to re-evaluate their identity: whether they remain guardians of traditional knowledge or transform into drivers of future innovation.

However, change does not occur automatically but is driven by various actors with different interests and roles. The educational transformation brought about by digitalization and the increasing prominence of Information and Communication Technologies has underscored the need for a more in-depth analysis of the digital divide to improve our understanding of educational inequalities in the digital age. Therefore, leadership plays a central role in a higher education institution. Leaders are no longer simply policy administrators; they must also be architects of change, building a vision, driving culture, and uniting diverse, often conflicting interests. Meanwhile, the government exerts pressure through regulations and educational transformation policies, while the industrial sector continues to signal the need for new competencies, indirectly forcing universities to adapt.

However, behind the powerful narrative of change lies a more complex reality: universities, as institutions rooted in long traditions, are resistant to change. An academic culture that values autonomy, freedom of thought, and stability often serves as a bulwark against change perceived as too rapid or too technocratic. Therefore, digitalization in education is viewed skeptically not because it rejects progress, but because of concerns about the loss of the essence of education itself, perceived as potentially reducing human interaction, altering pedagogical relationships, and even threatening academic identity.

In addition to cultural resistance, obstacles also arise in structural forms. Digitalization is often implemented partially, adopting systems or platforms without clear integration. This results in fragmented, disconnected systems, disparate data, and unsynchronized policies. On the other hand, limited resources, both in terms of infrastructure and digital competency, further complicate the transformation process. Furthermore, a narrative of readiness has emerged that questions the need to address readiness not only in terms of technical capabilities but also mental, cultural, and strategic readiness. Universities ready for change are typically characterized by a clear vision, transformative leadership, and a commitment to investing in human resource development. They see digitalization not merely as a tool but as an opportunity to reconstruct the entire education ecosystem, from teaching and learning to institutional management.

In practice, resistance and readiness do not exist separately. Both exist in the same space, interacting, and even contradicting each other. A lecturer can simultaneously be an agent of change and a source of resistance; an institution can possess an innovative vision yet be trapped within a rigid bureaucracy. In the context of digitalization, universities are beginning to interpret change in various ways, understanding it as an ecosystem transformation, an integration of technology, pedagogy, governance, and organizational culture. At this point, change is no longer an add-on but becomes part of the institution's new identity.

It is through this process that the competitiveness of universities is built. This is not solely through rankings or accreditation, but through the ability to adapt, innovate, and collaborate. Competitive universities are those that are able to connect themselves to the broader ecosystem of industry, the global community, and international knowledge networks. They create value not only through teaching, but also through innovation, research, and tangible contributions to society.

**Narrative of Governance and Collaboration in Digital Innovation**

Digital transformation is a crucial turning point for higher education, shifting governance from an administrative one to a strategic system that determines the direction and success of innovation. This change arises from the pressures of globalization, technological developments, and increasing stakeholder demands, requiring universities to be more adaptive, transparent, and responsive. In this context, digitalization acts as a catalyst, accelerating and transforming the way organizations manage resources and make decisions. This process is driven by institutional leaders, government, industry, and the academic community as agents of change in the implementation of digital innovation.

The implementation of digital innovation governance still faces various obstacles, such as fragmented information systems, limited digital literacy among human resources, hierarchical organizational cultures, and challenges with infrastructure and data security. Several research findings group several obstacles into six broad categories: environmental, strategic, organizational, technological, human resource-related, and cultural. This study provides a comprehensive understanding of the obstacles faced, facilitating the development of effective strategies and interventions (Gkrimpizi dkk., 2023). These obstacles demonstrate that organizational readiness is a key factor in digital transformation. Furthermore, digitalization is understood as a gradual process, moving from mere automation and system integration to a comprehensive transformation encompassing work processes, interaction patterns, and data-driven decision-making. Thus, digitalization is no longer merely a tool but a strategic framework for organizational governance.

Digital innovation demands collaborative governance involving cross-unit synergy and partnerships with industry, government, and the community, replacing a hierarchical model with a more open and network-based one. This approach is key to building a dynamic innovation ecosystem. Collaborative governance also strengthens higher education institutions' competitiveness through digital system integration, increased innovation, operational efficiency, service quality, and expanded networks and global reputation.

Overall, this study confirms that governance transformation in the digital era is not a linear or purely technical process, but rather a complex journey involving structural, cultural, and strategic changes. Successful higher education institutions are those capable of building a strong narrative of change, mobilizing key actors, systematically addressing obstacles, and developing a collaborative governance model that adapts to environmental dynamics.

**Narrative of Monitoring, Adaptation, and Competitiveness**

Digital transformation in higher education does not stop at the implementation stage, but continues with a continuous process of monitoring and adaptation. Research shows that universities are beginning to develop digital system-based monitoring mechanisms to evaluate the performance of academic, administrative, and infrastructure services in a more real-time and measurable manner. The use of information systems and digital platforms enables institutions to continuously improve transparency, decision-making effectiveness, and service quality.

Through this monitoring process, universities obtain feedback that serves as the basis for organizational adaptation. This adaptation includes adjusting strategies, developing human resource capacity, and refining digital systems to be more responsive to user needs. In this context, digital transformation is understood as a dynamic process that demands flexibility and continuous organizational learning. Universities that are able to adapt quickly tend to be better prepared to face disruptive environmental changes. Universities, as higher education institutions, possess various resources, including knowledge, human resources, physical facilities, and economic assets. They play a crucial role in leading the localization of sustainable development goals, addressing community issues, improving the well-being of local residents, and fostering understanding of sustainable development goals within the community (Choi & Kim, 2023). Furthermore, research shows that monitoring and adaptation play a direct role in building higher education competitiveness. Well-managed digitalization can improve operational efficiency, accelerate access to information, and support more flexible and innovative academic processes. This not only impacts the quality of internal services but also strengthens the institution's position in global competition.

Higher education competitiveness in the digital era should be built through the ability to integrate technology, manage knowledge, and create innovations relevant to the needs of society and industry. Digital transformation accompanied by continuous monitoring and strategic adaptation enables higher education institutions not only to survive but also to thrive as superior and sustainable institutions. Overall, the results of this research confirm that monitoring, adaptation, and competitiveness are interrelated processes. Universities that can manage all three synergistically will have an advantage in facing the increasingly complex dynamics of the digital era.

**Institutional Narrative to the Four-Stage Innovation Management Model**

Digital transformation in higher education begins with an institutional narrative that emphasizes the urgency of change in response to the pressures of globalization, technological developments, and increasing stakeholder demands. In this narrative, change is no longer understood as merely a technical necessity, but rather as a strategy to maintain relevance and strengthen competitiveness. Governance has shifted to become a strategic instrument that guides innovation and ensures the sustainability of the transformation.

This narrative should be driven by various key actors. Institutional leaders play a role in formulating the vision and direction of digital transformation, the government encourages it through policies and regulations, while industry and external partners present demands for relevant innovation. Meanwhile, the academic community serves as both implementer and agent of change, bringing transformation to life in daily practice. However, this process is fraught with obstacles. Higher education institutions still face system fragmentation, limited digital literacy, a resistant organizational culture, and challenges with infrastructure and data security, indicating that the primary issue lies in overall organizational readiness.

Furthermore, digitalization must undergo a comprehensive transformation, encompassing changes to work processes, interaction patterns, and data-driven decision-making, but also

becoming a strategic framework that reshapes higher education governance and operational models. As time goes by, the world is now entering the 5.0 era, which means that all parties must be ready to face technology in this era, including the Indonesian education system (Keshav dkk., 2022).

This institutional narrative is then manifested in innovation management practices that develop through interconnected stages. Universities begin by building awareness and a vision for change, then developing infrastructure and human resource capacity, continuing with digital integration into academic and administrative processes, and finally, carrying out continuous monitoring and adaptation. This process is not linear, but rather dynamic and cyclical, in line with changing needs and technological developments.

Through this process, universities gradually build their competitiveness. Institutions that are able to manage transformation in an integrated manner will excel in operational efficiency, service quality, and innovation capacity. Furthermore, digitalization also opens up opportunities to expand global networks and enhance international reputations. Thus, digital transformation is not merely a modernization effort, but a strategic process that connects the narrative of change with adaptive and sustainable innovation management practices.

## CONCLUSION

Based on the literature review and conceptual analysis, it can be concluded that this study confirms that digital transformation in higher education is no longer merely a strategic choice but an urgent necessity to maintain the relevance, competitiveness, and sustainability of institutions in an era of technological disruption. Universities are at a critical juncture: on the one hand, they must maintain academic values, but on the other, they are required to adapt to changes in the digital ecosystem, student expectations, and the increasingly technology-driven needs of industry. This urgency is reinforced by several key findings. First, changes in the educational and workplace landscape have created a significant gap between graduate competencies and industry needs, making digital transformation a solution that cannot be postponed. Second, despite high awareness of the importance of change, implementation is still hampered by limited infrastructure, low digital literacy among human resources, and resistance from organizational cultures that tend to maintain conventional methods. Third, the success of transformation depends heavily on transformative institutional leadership, collaborative governance, and the ability to build an innovation ecosystem involving government, industry, and academia. Without this synergy, digitalization risks becoming only a partial adoption of technology and lacking significant impact. Fourth, digital transformation must be understood as a systemic and sustainable process, not simply the use of technology. Higher education institutions are required to conduct data-driven monitoring, adapt quickly, and continuously strengthen organizational capacity to respond to dynamic changes.

Therefore, this study confirms that higher education institutions that fail to digitally transform face serious risks of decreased relevance, weakened competitiveness, and even potential abandonment by stakeholders. Conversely, institutions that manage transformation in an integrated and adaptive manner will gain strategic advantages in service quality, innovation, and global standing. Therefore, digital transformation must be prioritized as a top agenda for higher education institutions now, not in the future.

## DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this work the author(s) used [NAME TOOL / SERVICE] in order to [REASON]. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

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## AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

## DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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