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Competency Framework for University Lecturers in the Context of Digital Transformation in Education

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ABSTRACT: This paper analyzes the essential requirements for university lecturers in Vietnam amid the ongoing digital transformation of higher education. Using a document-based synthesis and comparative analysis of international and national studies, the research identifies three core competency domains: (1) professional expertise and digitally adaptive pedagogy; (2) technological and personal digital transformation competence; and (3) professional ethics and integrity in digital environments. The findings affirm that lecturers play a central role in the digital education ecosystem, as knowledge creators, learning designers, and key connectors between policy, research, and teaching practice. The study contributes to both theory and practice by providing a comprehensive framework for developing lecturers' digital competence and offering scientific evidence to inform policymaking, professional training programs, and the implementation of smart university models in Vietnam.

KEYWORDS: Digital transformation, lecturer competence, higher education, digital skills.

1. INTRODUCTION

In the context of globalization and the Fourth Industrial Revolution, digital transformation has become an inevitable trend, particularly in higher education. According to UNESCO (2023), digital transformation is not merely the application of information technology but rather a comprehensive restructuring of educational systems to meet the demands of sustainable development and lifelong learning. Many countries regard digital education as a strategic pillar for cultivating a knowledge-based workforce and building a digital economy (UNESCO, 2023; OECD, 2022). In Vietnam, the orientation toward digital transformation in education is clearly articulated in Resolution No. 57-NQ/TW (2024) and Resolution No. 71-NQ/TW (2025), which emphasize the task of building a digital education ecosystem, placing lecturers at the center of pedagogical innovation and the development of learners' digital competence. Nevertheless, numerous studies indicate that university lecturers still face significant challenges in adapting to digital environments, designing electronic learning materials, and effectively utilizing learning data (Nguyen & Tran, 2022).

Against this backdrop, identifying the essential requirements for university lecturers in the era of digital transformation has become urgent. This study aims to define the core competencies and professional qualities lecturers must possess, thereby contributing to policy development and capacity-building initiatives aligned with the national digital transformation strategy and the modernization of higher education in Vietnam.

Although both international and domestic research has addressed lecturers' digital competence, most studies have focused narrowly on either technological skills or online teaching methods, lacking an integrated approach that encompasses three fundamental dimensions: (1) professional expertise and digitally adaptive pedagogy; (2) technological competence and personal digital transformation; and (3) professional ethics and integrity in digital environments. In Vietnam, few studies have proposed a comprehensive competency framework that reflects the multidimensional role of lecturers within the digital education ecosystem. This gap underscores the urgent need to establish an integrated competency model that is both academically rigorous and practically applicable to training and policymaking for lecturer development in the digital era.

2. LITERATURE REVIEW

2.1 Theoretical foundations and literature overview

2.1.1. The context of digital transformation in higher education

Over the past decade, digital transformation has emerged as a critical driver of innovation in global higher education. According to UNESCO (2023), digital transformation is not merely the application of information technology but a comprehensive reconfiguration of educational models, from governance and content to pedagogy and assessment, enhancing flexibility, accessibility, and personalized learning. OECD's Digital Education Outlook 2022 highlights a strong shift toward "hybrid learning" and "open learning", with data and artificial intelligence (AI) playing a central role. Leading universities such as MIT, Stanford, and NUS have adopted AI and learning analytics to advance the concept of the "smart university."

The World Bank (2022) emphasizes that digital transformation is a prerequisite for sustainability and competitiveness in higher education in the knowledge era. Digital technologies expand learning opportunities, reduce costs, and strengthen connections among lecturers, students, and enterprises. The rise of AI, Big Data, and virtual/augmented reality (VR/AR) also introduces new demands for digital pedagogy, shifting lecturers' roles from "knowledge transmitters" to "knowledge creators and learning facilitators" (Redecker, 2020).

Thus, digital transformation is reshaping the global structure of higher education. Vietnam, in its process of integration and digital economic development, must embrace this trend to define the requirements, competencies, and strategic directions for lecturer development in the new context.

2.1.2. *Vietnam's policies and strategic orientation for digital education*

Amid the global momentum of digital transformation in education, Vietnam has identified this process as a strategic breakthrough to fundamentally and comprehensively reform the national education system. Several key documents have been issued, most notably Resolution No. 71-NQ/TW (August 22, 2025) on education and training development, and Resolution No. 57-NQ/TW (December 22, 2024) on science, technology, innovation, and national digital transformation. Both resolutions designate education as a focal sector and a driving force of digital transformation, aiming to build a comprehensive digital education ecosystem aligned with the development of a knowledge economy and a learning society.

Resolution 71-NQ/TW emphasizes that higher education must integrate development with technology and innovation, positioning universities as hubs of research, creativity, and digital knowledge transfer (Central Committee, 2025). Meanwhile, Resolution 57-NQ/TW highlights the application of AI, Big Data, and cloud computing in teaching, assessment, and university governance (Central Committee, 2024).

Building on these foundations, the Digital Transformation Strategy for Education and Training 2021 – 2025, Vision 2030 identifies three pillars: (1) digital transformation in educational management; (2) digital transformation in teaching and learning; and (3) digital transformation in scientific research and innovation (MOET, 2021). Crucially, the strategy regards the development of lecturers' digital competence as the decisive factor for success. Vietnam's digital education policy thus demonstrates strategic foresight, aligning with global trends while responding to domestic realities. The coordinated implementation of these resolutions and strategies is creating a robust legal framework, infrastructure, and high-quality digital human resources, thereby advancing the goal of building an open, flexible, and sustainable education system in the digital era.

3. RESEARCH METHODS

This study was conducted using a qualitative research design, based on document analysis and synthesis combined with comparative and theoretical generalization. The objective was to identify the system of competencies and core professional qualities that university lecturers must possess in order to meet the demands of digital transformation in Vietnamese higher education.

Secondary data were collected from international reports by UNESCO (2023), OECD (2022), and the World Bank (2022); from resolutions and strategies issued by the Communist Party of Vietnam and the Ministry of Education and Training (2021 - 2025); as well as from domestic and international studies on digital competence and pedagogical innovation. The documents were categorized by theme, coded for content, and compared across three sets of criteria: global trends, national policies, and professional requirements for lecturers.

Data processing employed content analysis to extract the essential requirements, competencies, and professional qualities of lecturers in the context of digital transformation. The findings were then cross-referenced between international and Vietnamese contexts, resulting in the identification of three major domains: professional expertise and digitally adaptive pedagogy; technological competence and personal digital transformation; and professional ethics and integrity in digital environments.

4. RESULTS

4.1. **The role of lecturers in the digital education ecosystem**

4.1.1. *Lecturers as designers and managers of digital learning*

In digital environments, lecturers are no longer merely transmitters of knowledge but play a pivotal role in designing and managing learning activities. They are responsible for developing online courses, digital learning resources, and flexible learning environments that meet the demands of personalization and lifelong learning. Designing digital lessons requires lecturers to master digital pedagogy, skillfully employ technological tools, and construct highly interactive learning pathways. At the same time, they must effectively manage the learning process by leveraging learning data and learning analytics to adjust content, support students, and improve teaching methods. Modern lecturers, therefore, serve as digital knowledge hubs, integrating the roles of instructional designers, flexible class organizers, and data analysts, thereby contributing to enhanced training quality in a digitized environment.

4.1.2. *Lecturers as creators of learning materials and facilitators of flexible learning*

In the context of digital transformation, lecturers are creators and disseminators of knowledge through digital resources such as videos, electronic lectures, online courses, and open educational materials. They not only generate content but also contribute to the development of open learning ecosystems, supporting personalized learning and expanding access to knowledge. Beyond designing learning materials, lecturers play a crucial role in facilitating flexible learning through digital platforms and interactive tools. Competence in monitoring learning progress, analyzing learner data, and providing personalized feedback are key components of modern teaching models. The creation and facilitation of flexible learning reflect the shift in lecturers' roles from "instructors" to "companions in learning" within an open, digitized, and diverse educational environment.

4.1.3. *Lecturers as bridges between research, policy, and practice*

University lecturers simultaneously act as researchers, policy implementers, and educational practitioners. They contribute to the generation of new knowledge through research and experimentation with digital teaching methods, thereby providing practical evidence for improving educational policy. Alongside their academic role, lecturers translate policy orientations into concrete teaching practices in the classroom and feed back into strategic planning processes through academic forums and specialized conferences. This ensures the feasibility and practical relevance

of digital transformation initiatives. With this dual role, as both researchers and practitioners, lecturers become intermediaries who integrate policy, theory, and practice in the process of reforming higher education in the digital era.

4.1.4. Core competencies and professional qualities of lecturers.

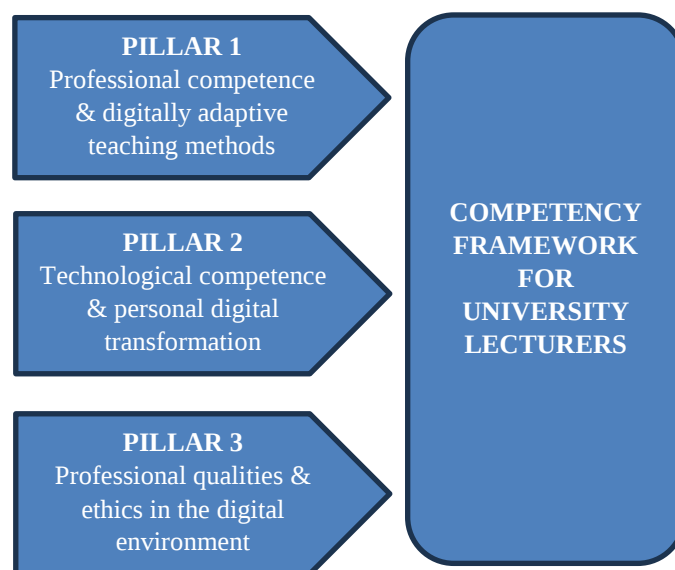


Figure 1: “Competency Framework for University Lecturers in the Context of Digital Transformation

a. Competency requirements in professional expertise and digitally adaptive pedagogy

In the context of digital transformation profoundly reshaping higher education, lecturers must be equipped with and continuously develop a system of professional competencies and teaching methods suited to digital learning environments. Teaching today requires not only mastery of subject knowledge but also the ability to apply educational technologies, exploit digital resources, and organize learning activities in flexible and creative ways. This competency group encompasses key requirements such as the ability to integrate technology into teaching, the capacity to design online courses, and the skills to employ assessment tools and learning analytics to enhance the effectiveness of teaching and learning.

First and foremost, the application of technology in teaching is a foundational requirement for lecturers in the digital era. They must master online learning platforms, learning management systems (LMS), interactive software, simulations, and multimedia tools to create open, dynamic, and learner-centered environments. The use of technology goes beyond technical operations; it involves the thoughtful integration of technology with content and pedagogy, enabling learners to access knowledge actively and creatively. This competency demands that lecturers continually update themselves on technological trends, flexibly adjust teaching methods, and adapt instructional formats to keep pace with the rapid changes of modern education.

In addition, the ability to design online courses reflects both the creativity and organizational capacity of lecturers in digital environments. An effective online course must be structured logically, have clear objectives, integrate diverse teaching media, and ensure high levels of interaction between teachers and learners. Lecturers should be able to construct appropriate learning pathways, combining digital resources, electronic lectures, online group activities, and flexible assessment methods to motivate and engage students. At the same time, the use of learning analytics and assessment tools enables lecturers to monitor progress, identify difficulties, and provide timely support to learners. Thus, professional expertise and digitally adaptive pedagogy in the era of digital transformation require not only deep subject knowledge but also the ability to act as designers of creative learning experiences, managers of learning data, and facilitators of students’ digital competence development.

b. Competency requirements in technological skills and personal digital transformation

In the context of digital transformation becoming an inevitable trend in higher education, technological competence and personal digital transformation are regarded as core elements that determine lecturers’ professional capacity. This refers to the ability to master technology, effectively employ digital tools in teaching, research, and classroom management, while demonstrating flexibility and rapid adaptability to the changes of modern educational environments. Each lecturer must recognize their role within the digital education ecosystem, not merely as a user of technology, but as a guide and innovator who creates new value from technology to serve learners.

Lecturers must be proficient in digital platforms and capable of utilizing electronic learning resources. Mastery of LMS, teaching-support software, and online learning tools enables lecturers to design, organize, and manage classes more effectively. In addition, competence in using digital learning resources allows lecturers to expand learning spaces, provide diverse content, and support learning anytime, anywhere. Alongside technological application, lecturers must pay close attention to information security and the protection of learning data. In digital environments, compliance with security protocols, respect for privacy, lawful use of learning materials, and adherence to professional ethics are essential indicators of lecturers’ responsibility toward students and the academic community.

Lecturers must also cultivate lifelong learning habits and adaptability to new technologies. In an era where knowledge and technology evolve continuously, lecturers are required to proactively update their expertise, acquire new skills, experiment with modern teaching tools, and innovate pedagogical methods. Maintaining lifelong learning not only helps lecturers keep pace with technological development but also inspires students with a spirit of innovation and creativity. It can be affirmed that technological competence and personal digital transformation are not only

mandatory requirements for university lecturers in the digital age but also benchmarks of adaptability, innovation, and professionalism in teaching and research.

Furthermore, lecturers must be able to interact with and adapt to artificial intelligence (AI) technologies in learning design, assessment, and research. They need to understand and apply AI tools to support personalized learning content, analyze learner data, evaluate learning progress, and provide timely feedback. Beyond technical application, lecturers play a crucial role in guiding students on AI ethics, including responsible use of technology, respect for data privacy, and the development of critical thinking in response to AI-generated outputs. This competency enables lecturers to safeguard academic quality and orient values in an educational landscape increasingly intertwined with AI technologies.

c. Competency requirements in professional qualities and ethics

In digital education environments, the professional qualities and ethical standards of university lecturers play a particularly crucial role, serving as the foundation that guides all teaching and research activities. As technology becomes deeply integrated into the teaching process, lecturers require not only knowledge and skills but also a strong sense of social responsibility and digital ethics. The use of online resources, information sharing, and interaction in cyberspace demand strict adherence to standards of copyright, protection of personal data, respect for academic values, and the demonstration of professional conduct. Lecturers are responsible for guiding students in cultivating ethical learning habits, encouraging them to use technology positively and humanely, thereby contributing to the creation of a safe, transparent, and sustainable digital education environment. Equally important is the spirit of innovation, creativity, and collaboration in digital contexts, qualities indispensable for modern lecturers. Digital transformation can only succeed when lecturers are willing to shift their mindset, boldly adopt new teaching methods, and effectively harness technological tools. Each lecturer is not merely a transmitter of knowledge but also a content creator, an initiator of ideas, and a collaborator within open knowledge networks. Collaboration on digital platforms with colleagues, researchers, and enterprises fosters a dynamic academic environment, promotes the sharing of experiences, drives pedagogical innovation, and enhances training quality. Creativity and collaboration empower lecturers to continuously improve themselves and affirm their role in advancing higher education in the digital era.

Moreover, critical thinking and adaptability are essential qualities that enable lecturers to remain proactive and effective in their work. In a constantly evolving technological environment, lecturers must be able to analyze and evaluate information objectively, select and apply knowledge appropriately. Critical thinking allows lecturers to make accurate teaching decisions while guiding learners to develop self-study skills and independent thought. Flexibility and adaptability enable lecturers to adjust methods, content, and approaches to meet diverse learning needs. Thus, professional qualities and ethics not only ensure standards of conduct but also shape a cohort of lecturers who are resilient, humane, and creative, leaders of the digital transformation process in contemporary higher education.

4.2. Research findings

4.2.1. Comparison of research findings with international studies

The findings of this study show significant alignment with the Digital Competence Framework for Educators (DigCompEdu) developed by Redecker (2020) and the OECD (2022) report on teachers' digital competencies in the era of digital transformation. Both international works emphasize that lecturers' digital competence extends beyond the mere use of technology; it also encompasses the ability to integrate technology into pedagogical design, organize learning activities, and conduct learner-centered assessment.

However, this study expands upon and contextualizes these insights within the specific conditions of Vietnam. It identifies lecturers' digital competence as an integrated model comprising three core components: pedagogical competence, technological competence, and professional ethics in digital environments. This combination reflects the practical demands of Vietnamese higher education, where lecturers are not only expected to apply technology but also to uphold humanistic values, academic integrity, and social responsibility in the process of adopting AI and implementing digital transformation in teaching.

4.2.2. Theoretical and practical implications

From a theoretical perspective, this study contributes to strengthening and expanding the scientific foundation for developing digital competence among Vietnamese university lecturers in the context of educational digital transformation. Building on international models (OECD, 2022; Redecker, 2020) and domestic realities, the paper establishes an integrated theoretical framework comprising three pillars of competence: digitally adaptive pedagogy, technological competence, and professional ethics in digital environments. This framework not only reflects global trends toward smart education but also resonates with Vietnam's specific context, where lecturers play a central role in pedagogical innovation and the creation of digital knowledge.

From a practical perspective, the findings provide important scientific evidence for policymakers and higher education institutions in designing strategies for lecturer development. Specifically, the study offers clear directions for building digital competence training programs, standardizing evaluation criteria for lecturers in digital environments, and implementing smart university models aligned with the national education digital transformation strategy. These findings can be directly applied in practice, helping to improve training quality, foster pedagogical innovation, and develop digital human resources capable of meeting the demands of international integration.

Clearly defining the three competency groups mentioned in the study (including: professional competence and digital adaptation to teaching methods; personal technological and digital transformation competence; and professional qualities and ethics in the digital environment) not only has theoretical significance but also has concrete application value in the practical development of educational policies.

First, the three pillars of competence can serve as the foundation for establishing a set of digital pedagogical standards for university lecturers. Each component reflects an essential dimension of modern professional practice, from teaching and technology application to ensuring academic integrity and digital ethics. This framework can support the Ministry of Education and Training in developing evaluation criteria, training processes, and career development pathways for lecturers.

Second, the smart university model, characterized by a comprehensive digital ecosystem, requires a teaching workforce that embodies all three competency groups. Lecturers must simultaneously act as technology operators (Pillar 2), learning designers and data managers (Pillar 1), and guardians of digital culture and academic ethics (Pillar 3). Standardizing and implementing training across these three pillars will enable

universities to transition sustainably toward smart models, linking technological innovation with improved educational quality and the safeguarding of academic values.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

Digital transformation is placing comprehensive demands on Vietnamese higher education, requiring reform not only in technology but also in training models, faculty capacity, and educational philosophy. Within this context, university lecturers play a central role, as creators of digital knowledge, organizers of flexible learning activities, and bridges linking policy, research, and teaching practice. This study has identified three core competency groups essential for lecturers in the digital era, including: (1) Professional expertise and digitally adaptive pedagogy; (2) Technological competence and personal digital transformation; and (3) Professional qualities and ethics in digital environments. The proposed competency framework holds academic value by structuring criteria for evaluating lecturers' capacities, while also offering strong practical significance in guiding faculty development policies. Specifically, the findings can serve as a foundation for establishing national standards of digital pedagogy, supporting training, professional development, and performance evaluation of lecturers. Equipping lecturers with these three competency groups is also a prerequisite for the successful implementation of smart university models, where technology, data, and personalized learning are integrated into a modern, flexible, and sustainable digital education ecosystem. In summary, the coordinated development of these three competency domains not only enhances teaching quality but also contributes to realizing the national strategy for educational digital transformation, moving toward an open, innovative, and learner-centered education system in the digital age.

5.2 Recommendations

5.2.1. For the Ministry of Education and Training

Refine policies and establish a comprehensive digital competency framework for university lecturers, ensuring alignment with international trends while reflecting the specific characteristics of Vietnamese higher education. A national set of digital pedagogical standards should be developed as the basis for lecturer evaluation, training, and career development.

Increase investment in technological infrastructure and national educational data systems, particularly open learning platforms, lecturer–student databases, and learning analytics systems to support smart governance.

Organize regular training and professional development programs on digital competence for lecturers, combining online and face-to-face formats, while encouraging international collaboration in digital teacher education.

Promote research and pilot advanced digital teaching models such as smart universities, interactive virtual classrooms, and the application of artificial intelligence in learning assessment.

5.2.2. For universities

Develop institution-specific digital transformation strategies linked to faculty development, ensuring that every lecturer is equipped with technological skills, digital pedagogy, and innovative thinking.

Invest comprehensively in digital infrastructure, including LMS platforms, electronic libraries, online learning environments, and digital creativity spaces, while guaranteeing equitable access for both lecturers and students.

Establish mechanisms to encourage and recognize efforts in creating digital learning materials, publishing open educational resources (OER), and sharing knowledge within the academic community.

Foster a culture of digital learning within universities, encouraging lecturers to pursue lifelong learning, engage in collaborative networks, participate in interdisciplinary research, and innovate teaching methods based on data-driven insights.

5.2.3. For lecturers

Take initiative in self-learning and self-development of digital competencies, regularly updating knowledge of new technologies and applying AI and Big Data in teaching and research.

Cultivate creativity and critical thinking, confidently experimenting with digital teaching methods aimed at personalizing students' learning experiences.

Uphold professional ethics and digital culture by protecting privacy, respecting intellectual property rights, and using technology responsibly and humanely

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