International Journal of Multidisciplinary Research and Growth Evaluation.

Higher Education Teaching in the Digital Era: Trends and New Requirements for Lecturers

Nguyen Thi Thanh Thao
Trade Union University, Hanoi, Vietnam

* Corresponding Author: **Nguyen Thi Thanh Thao**

Article Info

ISSN (Online): 2582-7138
Volume: 07
Issue: 05
Received: 18-08-2026
Accepted: 20-09-2026
Published: 22-10-2026
Page No: 802-806

Abstract
Against the backdrop of robust global digital transformation, higher education is undergoing profound changes in instructional methods, training curriculum, and the role of lecturers. This study focuses on elucidating the impacts of digital transformation, artificial intelligence, online learning, and flexible education models on current university teaching activities. Grounded in literature synthesis, theoretical analysis, and references to domestic and international studies, the paper highlights that the role of lecturers is shifting from mere transmitters of knowledge to designers, organizers, and facilitators of student learning. The findings indicate that higher education lecturers must satisfy several new requirements, such as digital technology competence, the capability to apply modern pedagogical methods, digital learning material design competence, interaction and student-support skills in online environments, alongside research and innovation competence. The paper also emphasizes the necessity of renovating professional mindsets, enhancing professional development, and flexibly adapting to the rapid changes in the digital educational environment to elevate the quality of higher education in the contemporary context.

DOI: https://doi.org/10.54660/.IJMRGE.2026.7.5.802-806

Keywords: higher education teaching, digital transformation, lecturer competence, online learning, digital education

1. Introduction

In recent years, the rapid proliferation of digital technologies has driven profound transformations across the higher education system. Online learning platforms, artificial intelligence (AI), and data technologies are reshaping how instructional activities are organized, training management is conducted, and knowledge is accessed by learners. In light of these shifts, higher education institutions must not only modernize pedagogical tools and instructional modes but also recalibrate the roles of educational stakeholders, particularly faculty members.

In this setting, the responsibilities of university lecturers are no longer confined to transmitting knowledge. Instead, they have expanded into multiple functions: designing learning experiences, guiding autonomous learning, utilizing technology to personalize learning trajectories, and comprehensively assessing learner competencies. This context raises an urgent demand to redefine lecturer competence in the digital era. Although numerous studies have examined digital transformation in education, systematic analyses of instructional trends and specific requirements for university lecturers remain limited, especially in the context of Vietnam. Therefore, this paper is conducted to clarify two main issues: (1) prominent trends in higher education teaching during the digital era, and (2) new requirements for lecturers to adapt to these trends.

1.1. Research Methodology

This study employs a quantitative research method combined with a literature review to analyze the factors influencing university teaching effectiveness in the digital era and to elucidate the new competencies demanded of lecturers amid educational digital transformation. A questionnaire survey was deployed as the primary data collection instrument. Observed variables were adapted

and refined from prior studies related to digital competence, educational digital transformation, and university teaching effectiveness in digital environments.

Research data were collected via an online survey administered to lecturers currently working at several universities located in Hanoi. Convenience sampling was utilized given its feasibility and suitability for the scope and conditions of the study.

A total of 138 responses were received; after eliminating invalid entries, 126 valid responses were retained for formal analysis. Survey participants encompassed lecturers across diverse age groups, disciplines, and teaching experiences, ensuring sample diversity. Research models were developed to assess the influence of digital transformation-related factors on higher education instructional effectiveness in the digital era. Collected data were coded and processed using SPSS software.

1.2. Literature Review

In recent years, parallel to the rapid growth of digital technology and global digital transformation, higher education teaching in the digital era has garnered considerable attention from researchers, educational organizations, and academic institutions worldwide and in Vietnam. Existing studies predominantly revolve around three major streams: (1) trends in instructional innovation in higher education; (2) the impact of digital technology on faculty roles; and (3) lecturer competency requirements in the context of digital transformation.

Globally, numerous studies have confirmed that digital technologies are fundamentally restructuring traditional higher education models. Research published by UNESCO, OECD, and the World Economic Forum asserts that higher education is shifting from a knowledge-transmission model toward a learner-competence development model, in which technology acts as an enabler for personalization and broadening access to knowledge. Prominent trends highlighted include: online learning, blended learning, flipped classrooms, adaptive learning, and the application of artificial intelligence in teaching. These studies also emphasize that learners increasingly occupy the center of the educational process, while instructors transition from being "knowledge dispensers" to "facilitators and learning experience designers".

Several international scholars have investigated the impact of digital transformation on university teaching. Alruthaya *et al.* (2021) [1] observed that digital technology enables the expansion of learning spaces beyond traditional classrooms, fostering flexibility and lifelong learning capacities among learners. Garrison and Vaughan emphasized the effectiveness of the blended learning model in heightening student engagement and developing self-directed learning competencies. Meanwhile, Selwyn pointed out that technology adoption in education is not merely a change of pedagogical tools, but an overhaul of governance structures, academic operational modes, and the professional roles of educators.

In Vietnam, research on digital transformation in higher education expanded considerably following the COVID-19 pandemic. Published works reveal that higher education institutions have progressively deployed online learning management platforms and broadened technology applications in administrative management. Nonetheless, the majority of studies have primarily focused on the current status of technology adoption or assessing digital transformation readiness, leaving comprehensive analyses of shifts in faculty roles and newly required competencies in digital educational settings relatively underexplored.

Several domestic studies have touched upon the imperative to upgrade faculty competencies under the impacts of digital transformation. These studies have concentrated on information technology competence, e-lecture design competence, virtual classroom management skills, and digital assessment methods. Current literature consistently acknowledges that digital transformation is markedly changing the professional demands placed on university lecturers. Accordingly, alongside disciplinary expertise, lecturers must possess the capability to adapt to technological environments, innovate pedagogical activities, and support learners in developing autonomous learning abilities amidst digitalization. However, existing publications largely investigate these factors in isolation without clarifying the nexus between emerging higher education trends in the digital era and the corresponding shifts in lecturer roles and competency requirements. This represents the critical research gap that this study seeks to address.

In summary, previous research has approached digital transformation in higher education from varied angles—including technology adoption in teaching, digital competence development, and pedagogical innovation. Yet, an integrated understanding of how emerging trends in digital university teaching correspond with new faculty competency requirements remains incomplete. Given that Vietnamese universities are vigorously accelerating digital transformation, identifying new instructional trends and analyzing the requirements placed on teaching staff will not only enrich theoretical foundations but also offer practical insights for educational management and academic workforce development. On this basis, this study focuses on elucidating prominent trends in higher education instruction during the digital era while analyzing the new demands placed on lecturers to adapt to today's evolving educational environment.

2. Results and Discussion

2.1. Scale Reliability and Structural Model Analysis

Cronbach's Alpha tests demonstrated that all measurement scales attained high reliability, with Alpha coefficients exceeding 0.7 and corrected item-total correlations exceeding 0.3.

Table 1: Reliability Test Results of Measurement Scales

Factor	Variable Code	Number of Observed Variables	Cronbach's Alpha
Digital Technology Application	CN	5	0.861
Digital Competence	NL	6	0.889
Digital Learning Design	TK	5	0.847
Adaptation to Innovation	TD	4	0.812
Digital Teaching Effectiveness	HQ	5	0.901

Source: Author's survey results, 2026

These metrics confirm that the scales possess strong reliability and are well-suited for subsequent factor and regression analyses. The Exploratory Factor Analysis (EFA) yielded a KMO measure of 0.891 (> 0.5), with Bartlett's Test of Sphericity being statistically significant (Sig. = 0.000 < 0.05), affirming the suitability of the data for factor extraction.

The factor extraction results formed 4 independent factor groups aligned with the proposed conceptual framework, with a total variance extracted of 68.4%, exceeding the standard 50% threshold. All observed variables exhibited factor loadings greater than 0.5 and were retained in the model. This demonstrates solid convergent and discriminant validity, adequately reflecting the factors governing higher education instructional efficacy in the digital age.

From a practical vantage point, university instruction in the digital era is undergoing profound shifts in both pedagogical management and faculty roles. Applying digital technology is no longer merely supplementary; it has become a core determinant of instructional effectiveness. This aligns with prior studies by Garrison and Vaughan (2008) [2], Selwyn (2016) [6], and UNESCO (2021) [8], which posit that digital transformation is catalyzing the restructuring of higher education toward flexibility, personalization, and student-centeredness.

Regression analysis reveals that digital competence is the strongest predictor of instructional effectiveness in digital environments. This highlights that lecturers require not only domain expertise but also the capability to leverage technology to design, execute, and govern educational activities. Amid the rapid growth of AI and online learning platforms, digital competence has become a foundational professional competency for contemporary university lecturers.

Furthermore, digital learning design competence significantly impacts teaching effectiveness. This indicates that shifting from traditional instruction to flexible learning models requires faculty to revamp pedagogical thinking, prioritizing interactive learning, experiential activities, and group discussions over unilateral knowledge transmission.

These findings imply that to elevate teaching quality in the digital era, higher education institutions must focus on training faculty in digital capabilities, establishing synchronized digital learning ecosystems, and cultivating an environment conducive to pedagogical innovation. Concurrently, supportive institutional mechanisms should be instituted to assist lecturers in adapting to digital transformation, thereby enhancing education quality and fulfilling the demands for high-quality human resources in the digital epoch.

2.2. Comparison of Instructional Activities Before and After Digital Transformation

To further evaluate the impact of digital transformation on university teaching, this study compared lecturers' perceptions of key instructional indicators before and after educational digital transformation. Indicators were evaluated on a 5-point Likert scale (1 = Very low; 5 = Very high), covering: technology application degree, lecturer-student interaction, learning personalization capability, student proactiveness, learning management effectiveness, and overall teaching effectiveness.

The survey results reveal distinct differences between traditional and digital instructional models.

Table 2: Comparison of Teaching Effectiveness Criteria Before and After Digital Transformation

Criteria	Before Digital Transformation	After Digital Transformation	Difference
Degree of technology application in teaching	2.31	4.28	+1.97
Interaction between lecturers and students	3.12	4.01	+0.89
Capability for learning personalization	2.45	3.94	+1.49
Degree of student proactiveness	2.87	4.06	+1.19
Learning management effectiveness	3.01	4.15	+1.14
Overall teaching effectiveness	3.22	4.09	+0.87

Source: Author's Survey Results, 2026

The results demonstrate that the degree of technology application experienced the most substantial increase (+1.97 points). This reflects how digital transformation has vigorously catalyzed the adoption of LMS platforms, virtual classrooms, digital materials, and modern pedagogical software in higher education. The capacity to address individual student needs has likewise shown remarkable progress in digital learning environments. Previously, teaching largely followed a uniform approach across the entire cohort; currently, technology empowers lecturers to categorize learners, monitor learning progress, and tailor learning materials to individual student needs. This conforms to the learner-centered educational paradigm of the digital era. Additionally, data analysis indicates a notable increase in student proactiveness. Within digital environments, students possess more opportunities to self-study, retrieve references, participate in online discussions, and actively manage their own learning pace.

Nevertheless, survey findings also reveal that several lecturers experience hurdles adapting to digital pedagogical environments, particularly senior faculty members or those with limited technology proficiency. A segment of lecturers indicated that the pressures of innovating teaching methods, designing digital courseware, and managing virtual

classrooms lead to heightened workloads and demand substantially more preparation time compared to conventional instruction.

3. Discussion and Conclusion

3.1. Discussion

The research results validate the profound shifts taking place in higher education teaching under the influence of digital transformation. The conventional role of the lecturer as a one-directional knowledge transmitter is steadily giving way to a new identity: that of a learning experience designer, facilitator, and learning coach within digital environments.

The study further conducted Independent Samples T-tests and ANOVA to evaluate differences in digital competence and teaching effectiveness across lecturer demographics regarding age, teaching experience, and technical proficiency.

Comparison by Age Group: The test results indicate a statistically significant difference in digital competence between lecturers under 40 years old and those over 40 years old (Sig. = 0.003 < 0.05).

Table 3: Comparison of lecturers' digital competence across age groups

Age Group	Mean Score
Under 30 years old	4.32
From 30–40 years old	4.18
From 41–50 years old	3.76
Over 50 years old	3.41

Source: Author's Survey Results, 2026

The results indicate that younger lecturers tend to adapt to technology faster, utilize digital platforms more regularly, and display greater confidence in online teaching. In contrast, senior lecturers encounter more difficulties exploiting emerging technologies and designing digital learning experiences.

However, the findings also demonstrate that highly experienced lecturers hold clear advantages in classroom management, handling pedagogical situations, and guiding student learning trajectories. This suggests that digital transformation does not diminish the value of traditional pedagogical wisdom; rather, it demands a synergy between technological capability and professional pedagogical mastery.

Comparison by Teaching Experience: ANOVA test results reveal significant variance in digital teaching effectiveness across teaching experience cohorts (Sig. = 0.021 < 0.05).

Table 4: *Comparison of digital teaching effectiveness by teaching experience*

Teaching Experience	Mean Score
Under 5 years	4.11
From 5–15 years	4.24
Over 15 years	3.76

Source: Author's Survey Results, 2026

The study also demonstrates that post-transformation instruction has witnessed tangible improvements across technology utilization, learning personalization, student autonomy, and learning management efficacy. Nonetheless, this transformation imposes multiple challenges on faculty, particularly pressures related to methodological innovation, digital courseware creation, and keeping pace with emerging tools like artificial intelligence. Group difference analyses highlight that younger lecturers and those with 5 to 15 years of experience tend to adapt better to digital teaching environments. This points to the imperative of designing targeted professional development programs customized for specific faculty cohorts to bridge digital divide gaps within higher education institutions.

In practical terms, universities need to devise comprehensive digital competence development strategies for faculty, encompassing tech literacy, digital instructional design, AI integration in pedagogy, and continuous innovation capabilities. Concurrently, developing a coherent digital educational ecosystem will foster an optimal environment for faculty to utilize technology effectively and upgrade education quality.

3.2. Conclusion

In the digital era, university teaching is undergoing a holistic transformation in methods, instruments, and the role of lecturers. This study has clarified two core issues: (1) dominant instructional trends—including online learning, blended learning, personalized learning experiences, and AI integration; and (2) new demands placed on lecturers—comprising digital competence, digital courseware design capabilities, online student interaction and mentoring skills, as well as an innovative mindset and sustained adaptability.

To effectively meet these demands, universities must formulate structured digital competence training strategies, establish cohesive digital learning ecosystems, and institute incentive and support mechanisms for faculty, especially senior educators. Only when lecturers are fully equipped with proper competencies and mindsets will digital transformation genuinely deliver sustainable value to higher education quality and the cultivation of a high-quality workforce for the nation.

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How to Cite This Article
Thao NTT. Higher education teaching in the digital era: trends and new requirements for lecturers. Int J Multidiscip Res Growth Eval. 2026;7(5):802-806. doi:10.54660/.IJMRGE.2026.7.5.802-806.

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