



Explore the factors affecting the management of teaching activities in online training at the university level at higher education institutions

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Abstract

Online training is becoming an important part of higher education in the context of digital transformation, and at the same time sets new requirements for teaching management activities to ensure the quality and effectiveness of training. This study aims to explore the factors influencing the management of teaching activities in university-level online training at higher education institutions in Vietnam. The study used a combination of literature analysis and questionnaire surveys of 255 administrators, faculty, students, and education professionals. The data were tested for reliability using Cronbach's Alpha coefficient and analyzed using descriptive statistics using mean and standard deviation. The results show that five groups of factors have a direct impact on the management of teaching activities in online training, including: (1) management of technology infrastructure and online training platforms; (2) management of lecturers and teaching activities; (3) learner management and learning support activities; (4) management of digital learning materials, testing and evaluation and quality assurance; and (5) managing policies, organizations, and supportive environments. In particular, the technological infrastructure and teaching organization capacity of lecturers are evaluated at a higher level than the rest of the factor groups, while digital learning material management, testing and evaluation and quality assurance are still areas that need to be prioritized for improvement. The research contributes to supplementing the practical basis for higher education management, and at the same time provides a scientific basis for higher education institutions to develop online training management solutions in the direction of synchronization, quality assurance and meeting the requirements of digital transformation.

Keywords: Teaching management, Online learning, Higher education, Digital transformation, Quality assurance

1. Introduction

The strong development of digital technology has fundamentally changed the way training is organized in higher education, bringing online teaching from a form of support to an important component in the modern education ecosystem. In the past, online training was mainly considered as a complementary solution to traditional training, now many higher education institutions have switched to a digital or blended learning model, in which teaching activities are organized on a technology platform with an increasingly deep level of integration (Martin & Bolliger, 2022; Hoa, 2024) [9, 12]. This trend not only expands access to education and increases learning flexibility, but also facilitates the innovation of teaching methods, assessment and management of training activities in a learner-centered direction (Meng, 2025; Zhang, 2023) [16, 27].

In Vietnam, the digital transformation process in higher education is strongly promoted through many guidelines and policies of the Government as well as the Ministry of Education and Training. Decision No. 1559/QĐ-TTg on the development of distance learning and Decision No. 117/QĐ-TTg on strengthening the application of information technology in management, teaching and scientific research have created an important foundation for the development of online training in universities (the Prime Minister, 2015; Prime Minister, 2017) [22, 18]. In particular, Circular No. 30/2023/TT-BGDĐT has

established a relatively complete legal corridor for online training activities at the university level, from requirements for technological infrastructure, digital learning materials, lecturers to inspection, evaluation and quality assurance (Ministry of Education and Training, 2023) [3]. These changes show that managing teaching activities in an online environment is no longer a mere technical issue but has become a strategic requirement for university administration.

However, the practice of implementation at many higher education institutions still reveals many limitations. The quality of technology infrastructure is uneven, the digital capacity of lecturers and learners is still different, and digital learning materials have not fully met the requirements, while the mechanism for managing, supervising and ensuring the quality of online teaching activities is still being improved (Anh & Duc, 2020; Hong, 2022a&2022b; Hau, 2025) [1, 13, 14, 11]. Some studies also show that the effectiveness of online training is simultaneously influenced by many factors, such as course design, interaction between lecturers and students, quality of technology platforms, capacity to use technology, school support, and management policies (Bagarukayo & Kalema, 2015; Hang *et al.*, 2020; Martin & Bolliger, 2022; Elansari & Laachach, 2025) [2, 10, 9, 8]. That shows that if you only focus on investing in technology without a proper management system, it is very difficult to ensure the quality of training in the digital environment.

In recent years, many research works have approached the issue of online training from different angles. Several studies focused on analyzing the level of acceptance and use of e-learning systems (Nguyen *et al.*, 2014; Van, 2023) ^[17, 25], assessing the current status of online training implementation (Duc, 2019–2020; Vu, 2022; Hau, 2025) ^[26, 11], or surveying the factors that affect student satisfaction and learning experience (Thanh *et al.*, 2024; Meng, 2025) ^[21, 16]. From a management perspective, Dang (2024) has pointed out a number of factors affecting the management of online teaching in vocational education institutions, while Thuan and Hong (2021) ^[23] analyzed the current situation of online teaching management at technical universities. However, the majority of current research still looks at individual groups of factors or focuses on learners, lecturers, or technology systems, while studies that simultaneously explore the factors affecting the management of teaching activities in online training at the university level from the perspective of education management are still relatively limited. In addition, the context of strong digital transformation and newly issued management regulations also requires more empirical evidence to fully identify the factors that determine the effectiveness of online teaching management.

Stemming from that gap, this study was conducted to explore the factors affecting the management of teaching activities in online training at higher education institutions. The identification and assessment of the impact of factors related to technological infrastructure, lecturers, learners, digital learning materials, management mechanisms, quality assurance and organizational environment will contribute to building a scientific basis for perfecting the online teaching management model in the context of digital transformation of higher education. The results of the study not only supplement empirical evidence for the field of education management but also provide a basis for higher education institutions to develop policies, allocate resources and implement appropriate management solutions to improve the quality of online training in the current period.

2. Literature review

2.1. Evaluation of research results related to the topic

Over the past decade, online training has become one of the topics that attract the attention of education researchers around the world. The published works not only focus on clarifying the effectiveness of this form of learning but also expand to aspects such as training quality, learning experience, course design, technological infrastructure and teaching management. However, the level of interest in managing teaching activities in the online environment is still not commensurate with the development speed of this training model.

The first research group focuses on clarifying the basic conditions for ensuring the quality of online training. Bagarukayo and Kalema (2015) ^[2], through an overview of South African universities, argue that the effectiveness of e-learning depends on a combination of technological infrastructure, management policies, the capacity of the teaching staff and the level of support provided to learners. The

study emphasizes that technology only serves as a means; The quality of training is only ensured when there is a management system capable of coordinating relevant resources. This view is further affirmed in the study by Martin and Bolliger (2022) ^[9], when the authors point out that course design, the organization of learning interactions, faculty feedback, and learner support mechanisms directly determine the effectiveness of online teaching at the university level. Instead of seeing the technology platform as the central factor, recent studies tend to consider the management of the teaching process as a condition of ensuring the quality of the entire training system.

The second research group focused on analyzing the factors that affect the quality and experience of online learning. Zhang (2023) ^[27] demonstrates that online classroom engagement has a significant impact on student learning engagement, motivation, and knowledge acquisition efficiency. According to Meng (2025) and Van (2023) ^[16, 25], the online learning experience is simultaneously influenced by the ability to use digital platforms, the quality of learning material design, the support of lecturers, and the level of initiative of learners. Hong (2022a&2022b) ^[13, 14]; Meanwhile, Elansari and Laachach (2025) ^[8] conducted research in the field of foreign language training, identifying six groups of factors that determine the quality of e-learning perception, including the quality of technology platforms, digital learning materials, teaching methods, learning interactions, technical support, and quality management. These results show that the quality of online teaching is shaped by the interaction of many factors, rather than depending on an individual component.

Another research direction focuses on the acceptance of technology and the applicability of online training systems. Nguyen, Nguyen and Cao (2014); Vu (2022) ^[17, 26] approached the problem from the perspective of acceptance of cloud computing technology, pointing out that perceptions of usefulness, ease of use, and organizational support are factors driving the use of online training systems. Long (2019) et al and Bui (2019) ^[15, 4] also affirmed the role of educational technology in expanding access to knowledge, innovating teaching methods, and improving the efficiency of training management. However, these studies are mainly approached from the perspective of educational technology, not fully analyzing the coordinating role of teaching management in the effective exploitation of digital resources.

In Vietnam, along with the digital transformation of education, the number of studies on online training has increased significantly. Duc (2019–2020), through a national research project on e-learning and MOOCs, has synthesized international experiences and proposed many orientations for the development of online training in the context of higher education in Vietnam. Anh and Duc (2020) analyzed the current situation of online training implementation at universities, saying that the main limitations lie in technological infrastructure, digital learning materials, lecturer capacity and quality assurance mechanisms. Hau (2025) ^[11] goes on to point out that many higher education institutions have invested significantly in digital platforms but still have difficulties in organizing, inspecting, and monitoring online teaching activities in a unified manner.

At the same time, many studies have looked at learning effectiveness from the learner's perspective. Thanh *et al.* (2024) ^[21] determined that student satisfaction is influenced by the quality of the online learning system, the ability to interact with faculty, the content of learning materials, and learning support services. Hang *et al.* (2020); Hoa (2024) ^[10, 12], when researching the blended learning model, also said that the effectiveness of training does not only depend on the combination of face-to-face and online learning but also depends on the organizational and management capacity of higher education institutions. These results suggest that management plays a role in connecting elements of the training system, but has not yet been analysed as an independent research object.

From the perspective of education management, the number of works is still relatively limited. Thuan and Hong (2021), Duc *et al.* (2022) ^[23] surveyed online teaching management activities at technical universities in Ho Chi Minh City and pointed out that management effectiveness is influenced by management capacity, technological infrastructure, lecturers and testing processes. Evaluation. Dang (2024), research in vocational education institutions, also identifies factors such as management policies, infrastructure, faculty capacity, financial resources, and technical support systems that have a significant influence on online teaching management. However, the scope of research is mainly limited to vocational education or a specific group of schools, so the generalization for the higher education system is limited.

In addition to empirical research, many Vietnamese policy documents have also gradually established a legal framework for online training. Decision No. 1559/QĐ-TTg (Prime Minister, 2015) ^[22], Decision No. 117/QĐ-TTg (Prime Minister, 2017) ^[19] and especially Circular No. 30/2023/TT-BGDĐT (Ministry of Education and Training, 2023) have quite fully stipulated the requirements for technological infrastructure, learning materials, lecturers, testing and evaluation and quality assurance. However, these documents mainly set out management requirements, but do not specify the impact of each group of factors on the effectiveness of teaching and learning management in practice at higher education institutions.

2.2. Research gap and direction

An overview of research works shows that online training has been approached from many different angles, including educational technology, training quality, learner experience, course design, and digital transformation. However, there are still some research gaps that need to be clarified. Specifically, as follows:

Firstly, the majority of studies focus on analyzing the outcomes of online training such as student satisfaction, learning effectiveness, or course quality, while the process of managing teaching activities, which determines the operation of the entire training system, has not been comprehensively studied. This leads to the inability to fully explain the factors affecting the management of teaching activities in the online environment.

Second, current studies often look at individual groups of factors such as technology, lecturers or learners without analyzing the overall relationship between the components of the management system. In practice, the effectiveness of online teaching management is the result of the interaction between technological infrastructure, lecturer capacity, learner characteristics, digital learning materials, management mechanisms, quality assurance and organizational conditions. The lack of a systems approach limits the ability to propose integrated management solutions.

Third, although Vietnam has issued Circular No. 30/2023/TT-BGDĐT with many new regulations on online training, the number of studies assessing the impact of management factors in the context of the new policy is still very small. Many research results were carried out before the current legal corridor was finalized, so they do not fully reflect the governance requirements in the digital transformation period of higher education.

Stemming from the above gaps, this study aims to systematically explore the factors affecting the management of teaching activities in online training at higher education institutions. Unlike previous studies that have only focused on individual components, the study approaches management activities from a systems perspective, simultaneously considering groups of factors related to technological infrastructure, lecturers, learners, digital learning materials, management mechanisms, etc ensure the quality and conditions of the organization. The research results are expected to contribute to perfecting the theoretical basis of online teaching management in higher education, and at the same time provide empirical evidence for policy development and training management innovation in the context of today's digital transformation.

3. Research methods

The study was conducted in a hybrid approach, combining theoretical research and quantitative research to explore the factors influencing the management of teaching activities in university-level online training. Combining the two approaches helps to both inherit previous research results and verify judgments through practical data, thereby improving the reliability of research results.

In terms of theoretical research, the authors use methods of analysis, synthesis, systematization and comparison of documents to build a scientific basis for research. Legal documents of the Government and the Ministry of Education and Training on online training, digital transformation in higher education and quality assurance are analyzed to determine management requirements for online teaching activities (Prime Minister, 2015&2017; Ministry of Education and Training, 2023) ^[22, 18, 1]. At the same time, domestic and foreign research works on e-learning, online teaching management, online course design and training quality were synthesized to form a framework for survey content (Bagarukayo & Kalema, 2015; Martin & Bolliger, 2022; Elansari & Laachach, 2025; Thuan & Hong, 2021) ^[2, 9, 8, 23].

The empirical study was conducted using the questionnaire survey method. The survey subjects include managers, lecturers, students and education experts who are working or studying at higher education institutions that implement online training. The selection of many target groups aims to comprehensively reflect management activities from the perspective of planning, implementation, teaching and participation in learning. The total number of valid survey papers used for the analysis was 255. The sample structure is shown in Table 1.

Table 1: Survey sample characteristics (N=255)

Characteristics	Quantity(n)	Rate (%)
Target groups		
Management Officer	42	16,47
Lecturer	96	37,65
Students	96	37,65
Education Experts	21	8,23
Gender		
Male	118	46,27
Female	137	53,73
Work experience (for management staff, teachers, experts)		
Less than 5 years	39	24,38
5–10 years	54	33,75
Over 10 years	67	41,87

Table 2: Results of testing the reliability of the scale

Survey content	Number of variables	Cronbach's alpha
Managing technology infrastructure and online training platforms	6	0,884
Managing teaching staff and online teaching activities	7	0,912
Learner management and learning support activities	6	0,891
Digital learning material management, testing and evaluation and quality assurance	7	0,924
Manage policies, organizations, and support environments	6	0,903

The results showed that the Cronbach's Alpha coefficient of all five scale groups was greater than 0.88, demonstrating that the observed variables had a high degree of intrinsic consistency and met the reliability requirement for further statistical analysis. None of the observed variables has a variable-sum correlation coefficient smaller than the acceptable threshold, so all variables are retained for analysis.

Survey data is processed using IBM SPSS Statistics 26.0 software. Descriptive statistical techniques are used to determine the mean (Mean), standard deviation (SD), frequency, and percentage of each observed variable. On the basis of the analysis results, the study assesses the impact of each group of factors on the management of teaching activities in online training and identifies the contents that need to be prioritized in the process of renewing training management at higher education institutions. For the convenience of interpreting the results, the average values are classified into five levels: from 1.00–1.80 (very low); 1.81–2.60 (low); 2.61–3.40 (average); 3.41–4.20 (high); and 4.21–5.00 (very high).

The questionnaire was built based on inheriting the studies of Martin and Bolliger (2022) ^[5], Bagarukayo and Kalema (2015) ^[2], Elansari and Laachach (2025) ^[8], Thuan and Hong (2021) ^[23], Dang (2024), and compared with the regulations of the Ministry of Education and Training on online training (Ministry of Education and Training, 2023). The scale uses a 5-level Likert scale, from 1 (Strongly disagree) to 5 (Strongly agree). The observation variables are divided into five content groups that reflect the main components of teaching management in online training, including:

- Management of technology infrastructure and online training platforms;
- Management of lecturers and online teaching activities;
- Learner management and learning support activities;
- Managing digital learning materials, testing, evaluation and quality assurance;
- Managing policies, organizations, and environments that support online training.

Before the analysis is conducted, the scale is tested for reliability using Cronbach's Alpha coefficient. According to the standard commonly used in educational research, a Cronbach's Alpha coefficient of 0.70 or higher is considered a guarantee of the reliability of the scale. The inspection results are presented in Table 2.

This classification helps ensure consistency when assessing the impact of each group of factors in the research results.

4. Results and Findings

4.1. Management of technology infrastructure and online training platforms

Technological infrastructure is the first condition to ensure the stable operation of online training, but in higher education management, the problem lies not only in having a technical foundation but also in the ability to organize, monitor and maintain the quality of using the system. Previous studies have shown that the quality of the platform, the stability of the transmission, the ability of technical support and the friendliness of the system have a direct impact on the online learning experience (Bagarukayo & Kalema, 2015; Martin & Bolliger, 2022) ^[2, 5]. In the context of Vietnam, this requirement is even clearer when Circular 30/2023/TT-BGDDT emphasizes the conditions of infrastructure, learning materials and learning management systems in online training (Ministry of Education and Training, 2023).

Table 3: Evaluation of technology infrastructure management and online training platforms

No.	Survey content	Mean	SD
1	The school has a relatively stable online learning management platform, meeting the requirements of organizing university classes.	4.12	0.63
2	The transmission line and server system are well-maintained enough to limit interruptions in the online teaching process.	3.98	0.71
3	The online learning tools are relatively synchronously integrated with class management, attendance, and assessment.	3.87	0.76
4	The technical department provides timely support when lecturers and students encounter problems during the learning process.	3.74	0.82
5	Online learning data is stored, secured and exploited for training management.	3.69	0.79
6	The university plans to upgrade its technological infrastructure in accordance with the scale of online training development.	3.81	0.77

Source: Data processing results of the research author (2026)

The results showed that the technology infrastructure group reached a fairly high level, with the average ranging from 3.69 to 4.12. The most appreciated indicator is the stability of the online learning management platform (Mean = 4.12; SD = 0.63), reflecting that many higher education institutions have made certain investments in LMS and digital teaching tools. However, the indicator of learning, data storage, security, and mining has the lowest Mean (3.69; SD = 0.79), indicating that learning data governance is still a stage that needs to be strengthened. This result is similar to the statement of Anh and Duc (2020) that online training in Vietnam does not lack implementation efforts, but is still limited in synchronization and depth of technology management.

4.2. Management of lecturers and online teaching activities

In online training, lecturers not only impart knowledge but also design learning environments, organize interactions, monitor progress, and support learners. Therefore, the management of the teaching staff needs to shift from managing teaching hours to managing the entire process of preparation, implementation and evaluation of teaching activities. Martin and Bolliger (2022); Duc *et al.* (2022) ^[5,1] argue that effective online learning design is highly dependent on the digital pedagogical capacity of lecturers. Elansari and Laachach (2025) ^[8] also highlight that the perceived quality of e-learning is significantly influenced by teaching methods, learning feedback, and the ability to maintain interaction. This is the basis for considering the capacity and activities of online teaching as a central element of training management.

Table 4: Evaluation of faculty management and online teaching activities

No.	Survey content	Mean	SD
1	Lecturers are specifically instructed on the process of designing, organizing, and evaluating online classes.	3.92	0.73
2	The school has a plan to foster digital pedagogical capacity for lecturers according to the requirements of each module.	3.76	0.81
3	Lecturers know how to flexibly use digital tools to increase interaction and maintain student engagement.	4.03	0.66
4	The online teaching activities of lecturers are monitored by relatively clear management criteria.	3.68	0.84
5	The faculty's feedback, counseling, and student support are carried out regularly in online classes.	3.85	0.75
6	The school encourages lecturers to innovate teaching methods in accordance with the online environment.	4.08	0.64
7	The results of online teaching are used as a basis for adjusting the professional plan of lecturers.	3.61	0.86

Source: Data processing results of the research author (2026)

Indicators belonging to the faculty group have a Mean of 3.61 to 4.08. The highest indicator is the encouragement to innovate online teaching methods (Mean = 4.08; SD = 0.64), showing that schools are well aware of the proactive role of lecturers in the digital environment. However, the use of online teaching results to adjust professional plans had the lowest Mean (3.61; SD = 0.86). This reflects a gap between the implementation of online teaching and evidence-based quality improvement management. The results are consistent with Thuan and Hong (2021) ^[23], who said that online teaching management at technical universities still faces difficulties in monitoring, feedback, and evaluating the process.

Learner management and learning support activities

Learners in an online environment need self-study, time management, technology skills, and timely learning support. Unlike in-person classrooms, online learner management cannot rely solely on physical presence but must be based on participation data, engagement, task completion progress, and learning feedback. Hang *et al.* (2020); Zhang (2023) ^[10,27] point out that online classroom interaction has a clear impact on students' motivation and learning performance. Hong (2022a&2022b); Thanh *et al.* (2024) ^[13, 14, 21] also show that Vietnamese students' satisfaction with online learning depends on the quality of support, interaction with lecturers, and the relevance of the learning system. Therefore, learner management is an inseparable component of online teaching management.

Table 5: Assessment of learner management and learning support activities

No.	Survey content	Mean	SD
1	Students are fully instructed on how to use the online learning platform before taking the module.	3.88	0.78
2	The school has a mechanism to monitor students' attendance, interaction and completion of learning tasks.	3.73	0.83
3	Students are supported promptly when they encounter technical difficulties, learning materials, or online learning requirements.	3.67	0.85
4	Academic advising activities help students maintain motivation, progress and self-learning ability in the digital environment.	3.59	0.88
5	Student participation data is used to warn early of the risk of dropping out or understudying.	3.42	0.91
6	The university provides students with feedback on the quality of their classes and online support services.	3.95	0.72

Source: Data processing results of the research author (2026)

The survey results showed that learner management was average to high, with a median of 3.42 to 3.95. Enabling student feedback on the quality of online classes was rated the highest (Mean = 3.95; SD = 0.72). However, the indicator of using data to warn early of the risk of dropping out or weakening only reached Mean = 3.42, the lowest in the table. This is a remarkable sign, because modern online learner management needs to move from passive support to data-driven forecasting support. This result is close to Meng's (2025) ^[16] assessment that the online learning experience can only be sustainably improved when the institution has a continuous support system, not just providing a learning platform.

4.3. Management of digital learning materials, testing and evaluation and quality assurance

Digital learning materials, testing and evaluation and quality

assurance are three elements that are closely linked in online training. An online course cannot be of good quality if the learning material lacks standardization, unreliable assessment, or lack of quality control mechanisms. The Ministry of Education and Training (2023) ^[3] has clearly stipulated the requirements for learning materials, testing and evaluation systems and quality assurance conditions for online training in higher education. At the research level, Elansari and Laachach (2025) ^[8] argue that the quality of learning materials, the relevance of assessment and the quality assurance system are important factors that shape the perceived quality of e-learning. Therefore, this is a group of factors that have direct significance for the effectiveness of online teaching management.

Table 6: Assessment of digital learning material management, auditing, evaluation and quality assurance

No.	Survey content	Mean	SD
1	Digital learning materials are built in accordance with the goals, output standards and characteristics of each module.	3.84	0.76
2	The school has a process of appraisal of digital learning materials before putting them into use in online training.	3.58	0.87
3	The form of online assessment test reflects relatively accurately the level of achievement of students' output standards.	3.71	0.82
4	Measures to monitor the integrity of online inspection are seriously and appropriately implemented.	3.46	0.93
5	Online learning outcomes are analyzed to improve learning materials, teaching methods, and assessment.	3.55	0.88
6	Online training quality assurance activities are carried out periodically with clear criteria.	3.62	0.84

Source: Data processing results of the research author (2026)

The group of digital learning materials, testing and evaluation and quality assurance has a Mean ranging from 3.46 to 3.84, lower than the two groups of infrastructure and lecturers. The highest indicator is digital learning materials that are in line with the objectives and output standards of the module (Mean = 3.84; SD = 0.76). In contrast, honesty monitoring in online testing has the lowest Mean (3.46; SD = 0.93), and the highest standard deviation, indicating that the survey participants' assessments were scattered. This reflects a practical problem: online testing facilitates time and space flexibility, but poses a major challenge in terms of learner authentication, fraud control, and ensuring fairness. This result is in line with the recommendations in the Draft Standards for Quality Assessment of Distance Learning at the University Level, which emphasize the requirement for quality control of the entire training process (Department of Quality Management - Ministry of Education and Training, 2019) ^[6].

4.4. Managing policies, organizations, and environments that support online training

Online training management cannot operate effectively without internal policies, coordination mechanisms, and the right organizational environment. The Prime Minister's decisions on the development of distance learning and strengthening the application of information technology in education have created an important orientation for higher education institutions (Prime Minister, 2015; Prime Minister, 2017) ^[22, 19]. However, macro-level policies are only of practical significance when they are concretized into regulations, processes and resources at the training institution level. Dang (2024) argues that online teaching management is clearly influenced by management policies, financial resources, technical support, and organizational capacity. Therefore, this group of factors reflects the ability to institutionalize online training in university administration.

Table 7: Assessment of the management of policies, organizations, and environments that support online training

No.	Survey content	Mean	SD
1	The school promulgates clear internal regulations on the organization and management of online teaching activities.	3.83	0.78
2	The responsibilities of units in implementing online training are assigned relatively specific.	3.75	0.81
3	The coordination mechanism between the training department, the professional faculty and the technical department is operated effectively	3.64	0.85
4	Financial resources for online training are allocated in accordance with actual development needs.	3.38	0.92
5	The university's organizational culture encourages innovation, sharing of learning materials and cooperation in the digital environment.	3.69	0.83
6	Online training management activities are associated with the digital transformation strategy of higher education institutions.	3.91	0.74

Source: Data processing results of the research author (2026)

The results showed that the supportive policy, organizational, and environmental groups had a Mean of 3.38 to 3.91. The most appreciated indicator is the association of online training

management with the digital transformation strategy of higher education institutions (Mean = 3.91; SD = 0.74). This shows that many schools have put online training in the long-term

development orientation, instead of seeing this as a solution to the situation. However, financial resources for online training have the lowest Mean (3.38; SD = 0.92). This is an important bottleneck, because technology infrastructure, digital learning materials, fostering lecturers and supporting learners all need stable investment. This result is compatible with Bagarukayo and Kalema (2015) [2], where the authors argue that e-learning fails not only because of weak technology but also because of a lack of organizational commitment and sustaining resources.

Table 8: Summary of the level of assessment of five groups of impact factors

No.	Survey content	Mean	SD
1	Managing technology infrastructure and online training platforms	3.87	0.75
2	Manage faculty and online teaching activities	3.85	0.76
3	Learner management and learning support activities	3.71	0.83
4	Digital learning material management, testing and evaluation and quality assurance	3.65	0.84
5	Manage policies, organizations, and support environments	3.70	0.82

Source: Data processing results of the research author (2026)

Overall, the technology infrastructure group achieved the highest average (3.87), followed by faculty management and online teaching activities (3.85). This shows that higher education institutions have given quite clear priority to technical conditions and implementation teams. However, the group of digital learning materials, assessment and quality assurance had the lowest Mean (3.65), indicating that this is an area that needs to be prioritized for improvement. In online training, if the testing, evaluation and quality assurance are not designed tightly enough, the entire management system is easy to fall into a situation where it focuses on organizing classes but does not control the output well.

From the five groups of results, it can be seen that the management of online teaching activities at the university level is moving from the adaptation stage to the standardization stage. At the adaptation stage, schools focus on platforms, transmission lines, learning accounts, and skills in using digital tools. At the standardization stage, the focus must shift to learning data, learning material quality, output benchmarking, personalized support, and evidence-based quality management. This is also an approach that is in line with international studies on the design and quality assurance of online learning (Martin & Bolliger, 2022; Elansari & Laachach, 2025) [5, 8].

The survey results also show three notable bottlenecks. First, the exploitation of learning data for early warning and improvement of training activities is still limited. Secondly, online auditing, especially ensuring honesty and fairness, is still an issue that needs to continue to be improved. Third, financial resources and internal coordination mechanisms have not kept up with the requirements of developing online training on a large scale. These bottlenecks show that online teaching management cannot only be understood as technology platform management, but must be seen as an academic, technological and quality management system.

From the perspective of education management, the above results suggest that higher education institutions need to build an integrated online teaching management model. That model needs to connect five components: technological infrastructure,

4.5. General assessment of factors affecting the management of online teaching activities

To get a general view, the study calculates the average values of five groups of factors. The results show that all factors are rated at a level from medium to high, reflecting that the management of online teaching activities at higher education institutions has a certain foundation but is not really uniform between the elements.

lecturers, learners, learning materials - evaluation - quality, and organizational policies. In which, technological infrastructure is the background condition; lecturers are the subjects of teaching organizations; learners are at the center of the management process; learning materials and assessment are tools to ensure output standards; and organizational policies are the mechanism to maintain the sustainability of the system. This approach is in line with the requirements of Circular 30/2023/TT-BGDDT and the current orientation for digital transformation of higher education.

Thus, the results of the study not only determine the extent of the impact of each group of factors but also show the intrinsic relationship between them. With good infrastructure but lack of lecturers with digital capabilities, it is difficult for online classes to be effective. Active lecturers but lack standardized learning materials and reliable assessment tools, it is difficult to ensure the quality of training. The policy is adequate but lacks financial resources and organizational coordination, the implementation process is easily interrupted. Therefore, improving the efficiency of online teaching management activities at the university level needs to be implemented in a synchronous, data-driven manner and closely associated with the development strategy of each higher education institution.

5. Discussion

The results of a survey of 255 managers, lecturers, students and education experts show that the management of teaching activities in online training at the university level is simultaneously affected by five groups of factors: technological infrastructure; lecturers; learners and learning supports; digital learning materials, testing and evaluation and quality assurance; policies, organizations, and supportive environments. It is worth noting that there is no group of factors alone as an absolute decisive cause. The factors affect the relationship are intertwined, in which technological infrastructure is the background condition, lecturers are the organizing force of the teaching process, learners are the center of reception and feedback, and learning materials assessment

quality assurance is the mechanism to control output standards. This finding is consistent with Bagarukayo and Kalema's (2015) ^[2] assessment that the effectiveness of e-learning depends on the coordination of technology, human capacity, management policies and support services.

The group of technology infrastructure and online training platforms has the highest mean of the five element groups. This reflects the fact that many higher education institutions have prioritized investment in LMSs, virtual classroom systems, servers, transmission lines, and learning management tools. This result is consistent with the policy orientation on strengthening the application of information technology in the management and support of teaching and scientific research activities in higher education (Prime Minister, 2017) ^[18]. However, the survey results also show that the weakness lies in the ability to exploit learning data, security and use data for management. Thus, schools not only need to "have a platform" but also have to switch to platform administration in the direction of dataization. If learning data is only stored without being analyzed for early warning, teaching adjustment or improvement of learning materials, the technological infrastructure has not yet created real management value.

For the group of lecturers and online teaching activities, the survey results show that lecturers have adapted relatively well to digital tools and innovated teaching methods. This is a positive signal, because in an online environment, lecturers not only conduct lectures but also design the learning experience, coordinate interactions, and maintain students' motivation to learn. Martin and Bolliger (2022) ^[5] emphasize that effective online learning design must be tied to faculty pedagogical presence, interaction quality, and learning feedback. However, the limitation in the research results is that the use of online teaching results to adjust professional plans is not high. This shows that many new schools have stopped at the level of managing the implementation process, not fully forming a continuous improvement management mechanism based on evidence.

Learner groups and learning support activities show a problem worth thinking about. Students have been provided with feedback on the quality of online classes, but the use of learning attendance data to warn early of the risk of weak learning, dropout, or reduced engagement is limited. In online training, learners are more likely to fall into a state of isolation, reduce motivation, or participate in the form if there is a lack of regular support mechanisms. Zhang (2023) ^[27] argues that online classroom interaction has a marked effect on student learning engagement and acquisition effectiveness. Thanh *et al.* (2024) ^[21] also pointed out that Vietnamese students' satisfaction with online learning is affected by the quality of the system, interaction with lecturers, and learning support services. Therefore, learner management in online training needs to shift from administrative management to learning progress management, where attendance data, interactions, submissions, feedback, and assessment results must be used to support personalization.

The lowest results belong to the group of digital learning materials, assessment and quality assurance. This is an

important finding, because the quality of online training cannot be guaranteed if the learning materials are not standardized, the assessment is unreliable and the quality control mechanism is not operated regularly. Circular 30/2023/TT-BGDDT has clearly stipulated requirements on learning materials, technology systems, teaching organizations, testing and evaluation and quality assurance in online training for higher education (Ministry of Education and Training, 2023) ^[3]. However, the survey results show that monitoring the honesty of online tests and analyzing learning outcomes to improve learning materials is still a weakness. This is compatible with the statement by Elansari and Laachach (2025) ^[8] that the quality of perceived e-learning is highly dependent on learning materials, assessment methods, technical support, and quality management. In other words, if the online assessment test is not reliable enough, it is difficult for the school to prove the level of meeting the output standards of students.

The group of policies, organizations and supporting environments shows that higher education institutions have initially linked online training with digital transformation strategies. This is in line with the orientations for the development of distance learning and the application of information technology in education that have been issued in Vietnam (Prime Minister, 2015; Prime Minister, 2017) ^[22, 18]. However, financial resources and internal coordination mechanisms remain bottlenecks. Online training cannot be sustained if it relies solely on the individual efforts of the instructor or the technical department. It requires a coordination mechanism between training departments, professional faculties, technology centers, quality assurance units and learner support departments. Dang (2024) also affirmed that management policies, financial resources, infrastructure, and technical support are factors that significantly affect the management of online teaching. Therefore, organizational governance competencies play a key role in transforming online training from situational activities into a formal component of higher education.

From the above results, it can be seen that the main contribution of the study lies in identifying online teaching management as a multi-tiered system, rather than a technical activity or individual teaching method. Five groups of factors surveyed form a relatively complete management structure: technology that facilitates operations; lecturers organize the teaching process; learners generate data and feedback; learning materials, evaluation and quality assurance to control results; policies and organizational environment to ensure sustainability. This approach complements previous studies that have often focused on student satisfaction, technology acceptance, or online learning effectiveness (Nguyen *et al.*, 2014; Thanh *et al.*, 2024; Meng, 2025) ^[17, 21, 16].

In practical terms, the results suggest that higher education institutions need to prioritize three areas of improvement. First of all, it is necessary to build a learning data management system to serve early warning, student support and teaching improvement. Next, it is necessary to standardize digital learning materials and innovate online assessment tests in the direction of ensuring authenticity, fairness and conformity with

output standards. Finally, it is necessary to establish an inter-unit coordination mechanism, stable allocation of financial resources and include online training in the long-term development strategy of the university. When these elements are operated synchronously, the management of online teaching activities can go beyond the level of technical response to become a core management competency of higher education in the context of digital transformation.

6. Conclusion

The study explored the factors influencing the management of teaching activities in university-level online training on the basis of a survey of 255 administrators, lecturers, students and education professionals. The results show that online teaching management is simultaneously influenced by five groups of factors: technological infrastructure and training platforms; lecturers and teaching activities; learners and learning supports; digital learning materials, testing and evaluation and quality assurance; policies, organizations, and supportive environments. In particular, the technological infrastructure and teaching organization capacity of lecturers are relatively highly appreciated, reflecting the initial adaptation of higher education institutions to the requirements of digital transformation. However, contents related to learning data exploitation, early warning of learners, honesty control in online assessment, and allocation of financial resources are still points that need to be improved.

Theoretically, the study contributes to the recognition of online teaching management as an integrated management system, in which technology, people, learning materials, assessment and organizational policies are closely related. In practical terms, the research results provide a basis for higher education institutions to improve the management process, standardize digital learning materials, improve lecturer capacity, develop learner support systems and strengthen the quality assurance of online training in the context of digital transformation of higher education.

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