
TRAINING ACTIVITIES AT UNIVERSITIES IN THE DIGITAL TRANSFORMATION ERA

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<http://doi.org/10.51453/3093-3706/2026/1440>

ARTICLE INFO**Received:** 08/02/2026**Revised:** 15/3/2026**Published:** 28/4/2026**KEYWORDS***Digital transformation;**Training activities;**National Digital;**Transformation Program.***ABSTRACT**

Digital transformation is an inevitable and objective trend that plays a crucial role for every nation. Regarding digital transformation in education, the Government's National Digital Transformation Program has identified education as one of the eight priority sectors for digital transformation. However, to date, the implementation of digital transformation in educational institutions in general, and universities in particular, still faces many challenges that need to be studied and addressed. This article focuses on digital transformation in educational activities, one of the most essential functions of every university.

1. INTRODUCTION

The 2013 Constitution identified: “developing education is a top national policy aiming to elevate people's intellectual standards, develop human resources, and foster talents”. This has demonstrated a strategic vision regarding the role of education in the country's development. Elevating people's intellectual standards is the foundation for building a civilized society, helping people possess knowledge, skills, and the bravery to integrate. Developing human resources ensures the provision of a high-quality labor force, meeting the requirements of industrialization and modernization. Fostering talents creates an elite workforce, leading innovation and creativity.

In the context of globalization and the fourth industrial revolution taking place vigorously, digital transformation has become and is becoming an inevitable trend, profoundly impacting all areas of socio-economic life. Education, especially higher education, is not outside of that trajectory. Higher education, with its main mission of training high-quality human resources for society, implementing scientific research and technology transfer, and promoting international cooperation, requires universities to play a pioneering role in digital transformation to contribute to the successful implementation of the national digital transformation strategy, meeting the human resource training requirements for the digital economy and digital society.

Digital transformation in higher education does not just stop at the application of information technology in management, teaching, and learning, but also encompasses changes in mindset, organizational methods, and the operational methods of the entire education system. Training activities - fundamentally the central task of the university - are directly impacted by digital technology in multiple aspects. This opens up many great opportunities such as: expanding knowledge access for students, building flexible training models, personalizing the learning process, and strengthening the link between teaching and scientific research.

Currently, higher education is strongly impacted by digital transformation, Artificial Intelligence (AI), Big Data, and the Internet of Things (IoT). Universities worldwide are applying digitized teaching models, smart learning, and practical applied research. Vietnam is also not excluded from this trend, and the Government's National Digital Transformation Program has identified education as one of the eight priority sectors for the Government's digital transformation, specifically in Decision 131/QĐ-TTg dated January 25, 2022, approving the project “enhancing the application of information technology and digital transformation in education and training in the 2022-2025 period, with an orientation towards 2030”. To direct the implementation of the Prime Minister's Decision 131/QĐ-TTg, the Ministry of Education and Training issued Decision No. 1282/QĐ-BGDĐT on May 10, 2022, promulgating the plan to enhance the application of information technology and digital transformation in education and training in the 2022-2025 period.

However, the actual implementation of training activities in the digital transformation era at universities is also encountering many challenges. First is the disparity in technological infrastructure and accessibility among educational institutions. Second, the digital habits and competencies of both lecturers and students remain limited. In this context, Vietnamese universities need to have a clear strategy to implement digital transformation in training activities, ensuring both the optimal utilization of opportunities brought by technology and the overcoming of arising difficulties and challenges. Particularly, innovating training activities not only stops at technical aspects, but also needs to go hand in hand with innovating program content, teaching methods, testing and assessment forms, and classroom organization methods. Only then will digital transformation truly become the driving force to improve the quality of university education, meeting the demand for high-quality human resources for the cause of industrialization, modernization, and international integration of the country.

It can be affirmed that digital transformation in university training activities is not only a trend but also an inevitable requirement for survival and development. While the world is gradually digitizing the fields of education, research, and innovation, if Vietnamese universities do not quickly adapt and implement synchronous digital transformation solutions, the risk of falling behind is a reality. Therefore, researching training activities at universities in the digital transformation era holds both theoretical significance and high practical value, contributing to affirming the central role of higher education in the cause of sustainable national development.

2. RESEARCH CONTENT

2.1. Some theoretical issues regarding training activities at universities in the digital transformation era

What is digital transformation? According to Tech Republic - an online magazine site: Digital transformation is a way to use technology to redo a process to make it more efficient, while according to Microsoft, digital transformation is a way to rethink how an enterprise organizes to bring together people, data, and processes to create new value, etc. Thus, there are many different understandings of digital transformation based on different approaches, each understanding showing a different perspective on digital transformation. In our opinion, digital transformation in an organization can be understood as the use of digital technologies in all areas of the organization's activities, taking advantage of digital technologies, especially modern technology, to change

operational methods, operating models, organizational culture, and methods of providing services to customers as well as improving the efficiency of the organization's operations.

Training activities are one of the main functions of a university, playing an important role in determining the training results of the university. Currently, there are many different understandings of training activities at universities. From a systemic process approach, we believe that the training activities of a university are an activity that includes the following contents: Enrollment activities, training program development, building learning materials, preparing support conditions, organizing teaching activities, recognizing training results, and supporting learners after graduation. Therefore, in this article, we will address the issue of digital transformation by combining various approaches to suit the management of training activity contents at the university.

2.2. Training activities at universities in the digital transformation era

Training activities at a university are a continuous cycle from enrollment to graduation, so digital transformation needs to be synchronously and comprehensively integrated across all activities, especially data, software, and operational methods.

Managing learner data uniformly and continuously from enrollment to post-graduation is necessary to ensure accurate and transparent information and to support the learning process and comprehensive educational management. Educational institutions need to build a Student Information System (SIS) to track all personal information, academic records, activities, and graduation status of students through a single ID number, including post-graduation data to serve statistics, training quality evaluation, and connection with the labor market.

A unified training software for the school needs to integrate the following main features: Learning material management, Course management, Learner management, Teacher management, Examination and assessment management, Training schedule management, and Reporting/analysis systems. To ensure synchronization, the software needs the ability to store centralized data; besides, the system must have detailed authorization functions for each subject (teachers, learners, board of management, training department, etc.), allowing clear management of access rights and actions of each user within the system and protecting data.

The digital transformation operational method is the process where organizations transition from traditional operating methods to digital operating models, using digital technologies such as AI, Big data, IoT, Cloud, and blockchain to optimize operations and management processes, improve performance, and change working culture, responding to the inevitable trends of the 4.0 era.

2.2.1. Digital transformation in enrollment and admission

Enrollment work is an important input activity in the training activity chain of a university. Effective enrollment helps the school ensure input quantity and quality, appropriate to its training capacity, while also contributing to elevating the university's brand and reputation.

In the context of digital transformation, universities need to change their enrollment promotion methods toward applying modern technology so that anyone who needs or is interested in the major or the educational institution is provided with the institution's enrollment information. Anyone who wants to find out about enrollment, the university's enrollment consulting system will

automatically connect and introduce the university's enrollment. Furthermore, the university's enrollment consulting system can also assist in advising detailed information such as: training programs, job opportunities, career potential, necessary qualities and competencies, priority policies, the employment rate of graduates, and the demand for human resources in the training profession for them to choose.

Digital transformation in enrollment is the application of digital technologies such as management software, artificial intelligence (AI), big data (Big Data), online information systems, etc., into the stages of the enrollment process, such as:

- Enrollment consulting and communication
- Online registration and admission selection
- Managing candidate data and analyzing enrollment trends
- Interacting with and caring for candidates

Applying digital transformation in enrollment helps improve transparency, accuracy, save time and costs, and improve the candidate's experience.

Currently, the Ministry of Education and Training and educational institutions have applied information technology in organizing regular university enrollment in 2025, and the process is implemented as follows:

- **Updating data, registering accounts:** High schools have updated student data such as information and results of academic years at school onto the Ministry's system. Students register accounts and use the provided accounts to review and edit personal information and academic results on the MOET's System.

- **Registering aspirations and paying fees:** Students access the MOET's admission support system website, use the provided accounts, and register their desired study aspirations, admission methods, and fees. Based on the information of each training institution, students may have to register aspirations, admission methods, submit evidence (if any), and admission fees on the University's website.

- **Waiting for admission results:** After the high school graduation exam, the provincial Departments of Education and Training update students' results onto the MOET's System. Educational institutions receive data and conduct admission selections according to exactly the calculation methods and score conversion levels between admission methods that the University has announced. After the selection is complete, the Universities will send the results back to the MOET to conduct virtual filtering (a process repeated 10 times according to the MOET's notice). Finally, the University will announce the admission benchmark scores for the training majors and the list of successful candidates. *Note: If a student passes a higher-priority aspiration, the lower-priority aspirations will be canceled.*

- **Admission enrollment:** Admitted students will confirm admission enrollment on the MOET's information portal. Training institutions have digitized the candidates' documents, making student enrollment convenient and fast.

The application of digital transformation in enrollment and admission in 2025 helps enhance fairness and transparency for candidates through clear criteria and accurate score conversion processes, thereby helping to reduce pressure on candidates and their families, increasing students' confidence, and at the same time helping higher education institutions improve enrollment quality, select suitable candidates, and develop sustainably.

2.2.2. Digital transformation in training program development activities

The training program is one of the factors that plays a decisive role in training quality. The training program needs to meet the competency requirements of learners after graduation and meet the needs of employers. Therefore, the University needs to collect sufficient information to correctly determine learning outcomes and training content.

In digital transformation, universities need to implement the application of digital technology in surveying the needs of employers, alumni, and socio-economic, scientific, and technological development trends as a basis for building learning outcomes and training program content. For instance: With the trend of globalization and international integration demanding that universities focus on foreign language skills and information technology capacities for learners; With the digital transformation trend, the school needs to focus on developing digital competencies for learners so they become digital citizens; With the help of digital technology, the source of learning material information is rich, diverse, and readily available.

Therefore, program content should not be too heavy on professional knowledge but needs to focus on equipping foundational knowledge, skills, learning methods, and technology usage for learners. Universities need to leverage digital technology to gather feedback for the program from employers, alumni, and stakeholders during the program building and updating process. Alumni are the ones who use the competencies trained at the university to apply during their working process. Therefore, they are the ones who best understand the suitability between the training program and job requirements. Their opinions play a crucial role in helping universities adjust training programs to meet demands. Previously, collecting this information was primarily through surveys and alumni meetings organized by the university. The collection of feedback from employers about the training program has been very limited and not given much attention due to the implementation taking a lot of time, being costly, and difficult to deploy. However, with the support of digital technology and smart technologies, this work can be carried out more diversely, frequently, and efficiently. To fulfill the above requirements, the information system needs a dedicated module for collecting and processing information, and evaluating the training program to have a basis for program development. From the above analysis, it shows that the content of digital transformation in training program development activities includes: Transforming methods and technologies for collecting information serving training program development; transforming methods and technologies in processing and analyzing data to serve training program development.

2.2.3. Digital transformation in the development and creation of digital learning materials

In training activities at training institutions, digital transformation will change the management and teaching environment from a traditional environment to a digital environment. When teaching in a digital environment, digital learning materials and open educational resources play a very important role. Digital learning materials (or electronic learning materials) are a collection of electronic means serving teaching and

learning, including: Electronic textbooks, electronic coursebooks, electronic reference materials, electronic assessment tests, slideshows, data tables, audio files, images, videos, electronic lectures, teaching software, simulation experiments, and other digitized learning materials [1]. Developing a shared digital learning material repository is one of the main tasks and solutions to enhance the application of information technology and digital transformation in education and training in the 2022 - 2025 period, oriented to 2030 [2]. Upon digital transformation, universities need to pay attention to Learning Management System (LMS) software that allows managers and lecturers to upload electronic learning materials, organize teaching, and manage the learning process and results of students, while students can access and exploit digital learning materials to serve their learning process.

Thus, the following main contents need to be implemented during digital transformation in building and developing digital learning materials at universities: Building digital learning materials; Transforming teaching and learning methods based on digital platforms; transforming storage methods.

2.2.4. Digital transformation in teaching - learning activities

Teaching - learning is the most important activity in training activities at the university. It is a series of teaching activities by lecturers, learning activities by learners, and testing and assessment activities. The application of information technology in teaching has brought certain successes to the training activities of universities. However, the current deployment of information technology application in teaching still bears a localized nature among faculties, departments, and individuals. For instance, for the same lesson, there are lecturers who apply information technology in designing lectures and teaching, and there are teachers who do not, and the level of information technology application among lecturers is also very different. Digital transformation in teaching activities needs to be implemented synchronously with the participation of all staff, lecturers, and learners. For example, the lecture of a lesson could be the product of an expert group, a department, an educational institution, or a leading expert in the field related to the lesson's content. All lecturers teaching this lesson will use that product to teach, or the lecturer is the one organizing the class to listen to the lecture. Teaching activities in the digital environment are carried out through the online training system. Universities need to develop and apply online teaching and learning digital platforms with advanced features that support personalized learning and enhance experiences; increase computer-based and online testing and examinations; connect the online teaching platform with the school administration platform and IoT network, establishing a digital transformation ecosystem within the educational institution. Developing and applying platforms providing Massive Open Online Courses (MOOCs), strengthening credit recognition for online courses among higher education institutions; Piloting the digital higher education model at some higher education institutions [2]. The main source of learning materials is provided in the network environment through the learning management system (LMS), learning content management system (LCMS), digital library, and open educational resources. Teaching methods, classroom management, and interaction with learners in the digital environment are carried out diversely thanks to the support of digital technical means, digital learning materials, and digital media environments. With technological support, teachers can combine multiple different teaching methods; interact with learners through multiple channels and in various forms; use different learner management tools and methods. Learners need to change their learning style from mainly absorbing knowledge from

the lecturer's lecture to mainly self-studying through documents and digital learning materials, from face-to-face learning and interaction to learning via online teaching systems, and from paper-based testing to online testing. Therefore, learners need to be conscious and proactive in their studies.

When digitally transforming teaching activities, schools need to build an online training system, build a source of digital learning materials, and develop digital competencies for lecturers and learners. Some main contents that universities need to implement when digitally transforming teaching activities are: Transforming the teaching environment; Transforming the form of teaching organization; Transforming teaching methods; Transforming how teaching resources are used; Transforming teaching technologies.

2.2.5. Digital transformation in graduation recognition and post-graduation learner support

The employment of learners after graduation is one of the output factors belonging to the training process of higher education institutions. Supporting employment for students and maintaining relationships with alumni plays an important role in building the school's brand and collecting feedback on objectives, learning outcomes, program content, and training quality to promptly adjust appropriately, contributing to improving training quality.

The goal of higher education institutions is to provide training that meets societal needs. That means learners have jobs after graduating, especially jobs right in their field of training. Moreover, recruited learners can well meet the job requirements of employers and have the potential for development. These are indicators affirming training quality, contributing to affirming the higher education institution's brand. In the context of the rapid pace of social development and the rapid changes in technology that are currently occurring, for learners to have jobs, meet job requirements, and have the potential to develop demands that the training programs of higher education institutions must be built and regularly updated. Therefore, higher education institutions need evaluation information regarding the suitability between the training program and societal needs. Alumni are a reliable and effective source for providing this information. To be able to support employment for students, higher education institutions need information on the recruitment needs of enterprises and employers corresponding to each job position and each training major. However, collecting information on the recruitment needs of enterprises and employers has not been truly focused on by educational institutions and has not been effectively implemented due to many reasons, including factors related to tools and implementation environment. When undergoing digital transformation, with the digital environment, collecting the recruitment needs of organizations and enterprises and contacting alumni is extremely convenient. The school needs to build a module in its information system to perform this work. This module needs to apply artificial intelligence to smartly search and connect stakeholders.

In summary, digital transformation in training activities requires universities to digitally transform in terms of learning results recognition and post-graduation learner support with some basic contents such as: Transforming the data format of training results; Transforming the storage method of learning results; Transforming the post-graduation learner support method; Transforming technology.

2.3. Some difficulties in digital transformation in university training activities in the

current period

Digital transformation in teaching activities will cause changes in technology, organizational methods, and teaching environments, posing not a few difficulties and challenges for universities, specifically as follows: Digital competencies of lecturers and learners: The digital competencies of lecturers and learners are the decisive factor for the success of digital transformation in teaching activities. However, for lecturers and learners to acquire the digital competencies meeting the requirements of teaching in a digital environment, there must be a process of training, fostering, and self-fostering.

3. CONCLUSION

National digital transformation poses a mandatory requirement to digitally transform within universities. One of the important tasks of digital transformation in universities is digital transformation in training activities. Digital transformation in training activities is an inevitable trend that requires research attention. Based on analyzing the digital transformation context associated with the training activities of the university, the author has presented six core contents from digital transformation in enrollment and admission activities to graduation recognition and learner employment after graduation. Besides, the article points out the difficulties and challenges in the digital transformation process of university training activities. Hopefully, the results of this research will contribute to the implementation of digital transformation in training activities at our country's universities in the coming time.

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