

## DIGITAL TRANSFORMATION IN MANAGEMENT AND TRAINING ACTIVITIES AT HUNG VUONG UNIVERSITY

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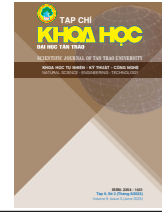
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### Abstract:

In the 4.0 revolution, the implementation of digital transformation in management and training activities is an urgent job at universities. The application of information technology to management and training activities not only helps universities improve management and training efficiency, but also changes the thinking, capacity and methods of the whole team: from experts, lecturers to leaders whom be able to build and operate the education system on a digital platform. In recent years, Hung Vuong University has also approached and digitised a number of management processes, e-learning materials, and online learning on the E-learning system. Digital transformation helps the school make the most of its resources to meet the increasing requirements of human resource training in both quantity and quality for socio-economic development.



## CHUYỂN ĐỔI SỐ TRONG HOẠT ĐỘNG QUẢN LÝ VÀ ĐÀO TẠO TẠI TRƯỜNG ĐẠI HỌC HÙNG VƯƠNG

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Thông tin bài viết	Tóm tắt
Ngày nhận bài: 05/12/2022	Trong cuộc cách mạng 4.0, việc thực hiện chuyển đổi số trong hoạt động quản lý và đào tạo tại các trường đại học là một việc làm cấp thiết. Việc ứng dụng công nghệ thông tin vào hoạt động quản lý và đào tạo không chỉ giúp các trường đại học nâng cao hiệu quả quản lý, đào tạo mà còn làm thay đổi tư duy, năng lực và phương pháp của cả đội ngũ từ chuyên viên, giảng viên cho đến lãnh đạo để có thể xây dựng và vận hành hệ thống giáo dục trên nền tảng số. Trường Đại học Hùng Vương trong những năm gần đây cũng đã tiếp cận và thực hiện số hóa một số quy trình quản lý, học liệu điện tử, học tập trực tuyến trên hệ thống E-learning. Chuyển đổi số giúp nhà trường khai thác tối đa nguồn lực để đáp ứng yêu cầu ngày càng cao trong đào tạo nhân lực cả về số lượng và chất lượng cho phát triển kinh tế - xã hội
Ngày sửa bài: 12/03/2023	
Ngày duyệt đăng: 16/5/2023	
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### 1. Introduction

The Fourth Industrial Revolution is a revolution based on digital technology, applying Information Technology (IT) to all areas of life to build a super-connected world and integrate intelligent technologies to optimize processes and production methods. The most advanced breakthrough technologies today are: Artificial Intelligence (AI) - Chat GPT, Big Data, 3D Printing Technology, Self-driving Cars, High-end Robots, Internet of Things (IoT), Nano Technology, New Materials and Sensors, Biotechnology... The achievements of the Fourth Industrial Revolution have created opportunities as well as the inevitable requirement to build a 4.0 education system[4] In higher education, digital transformation gradually changes teaching methods from traditional teaching methods to active teaching methods, helping teachers and learners to develop their thinking ability, creativity, initiative

and achieve efficiency. The classroom model has gradually shifted to online learning models, B-learning combined teaching models. Digital transformation has made education management activities more effective, faster and more convenient; storage and retrieval of documents are more convenient. The application of IT helps learners access knowledge anytime, anywhere, actively in learning and applying knowledge to practice.

Universities play an important role in training human resources to serve economic and social development, especially in the knowledge economy, where human resources are an endless resource. High-quality human resources are those who have knowledge, skills, master new technologies, and special technologies of digital transformation such as artificial intelligence, data science, automation or blockchain. This poses a task for universities to train human resources that meet the increasingly high demands of businesses and society.

To achieve this goal, universities must first gradually carry out comprehensive digital transformation, synchronize management systems, teaching methods, testing and evaluation...

## **2. Issues of digital transformation and digital transformation in education**

### ***2.1. Digital conversion***

Digital transformation is an inevitable trend in the era of Industry 4.0. Currently, there are many understandings of the term digital transformation in the world. According to Westerman and colleagues (2011), digital transformation is the use of information technology to completely improve the efficiency and scope of operations of businesses, which is a hot topic for global companies [5] According to Mazzone (2014), digital transformation is the intentional and continuous development of a company's digital technology, business model, idea or methodology, both strategically and tactically [3]

In Vietnam, the concept of "digital transformation" is often understood as a comprehensive and overall process of individuals and organizations changing their way of life, work and production methods based on digital technologies by applying advances in digital technologies such as cloud computing (Cloud), big data, Internet for everything (IoT) to change management methods, management systems and work processes..

### ***2.2. Digital transformation in education***

Digital transformation in the education sector is the application of information technology, science and technology to serve the purpose of education. Decision No. 749/QĐ-TTg dated June 3, 2020 of the Prime Minister on "National digital transformation program to 2025, vision to 2030" identifies: Develop a remote learning support platform, fully apply digital technology in management, teaching and learning; digitize documents and textbooks; build a platform for sharing teaching and learning resources both directly and online [4] Develop educational technology towards personalized training. 100% of educational institutions implement remote teaching and learning activities, in which the training program allows students to study online at least 20% of the program content. Apply digital technology to assign homework and check students' preparation before coming to class.

Digital transformation in education and training focuses on two main contents: digital transformation in education management and digital transformation in teaching and learning activities. Digital transformation in university administration is carried out on a digital environment that includes all aspects of school operations such as training, student affairs, human resources, finance, infrastructure, and international cooperation. Digital transformation in teaching and learning is the complete transformation of teaching methods, classroom management techniques, interaction with learners into digital space, exploiting information technology to organize teaching, deploying online training systems, digitizing learning materials (textbooks, lectures, question banks).

Digital transformation in management is specified through the following tasks: Digitizing management information, creating interconnected large database systems, deploying online public services, applying 4.0 technologies to manage, operate, forecast, and support leadership and management levels in making decisions in education leadership and operation activities. Digital transformation in teaching and learning activities changes teaching methods, and pedagogical tasks must also change accordingly. Traditional methods are no longer suitable and effective. The implementation and deployment of methods must be changed, requiring creativity and flexibility in applying and using devices and features of technology to achieve expected teaching results. Digital transformation is not only digitizing lectures or applying software to lesson preparation but also transforming the entire teaching method, classroom management techniques, interaction with learners into digital space, exploiting information technology to organize successful teaching.

For digital transformation to be successful, universities need a system of policies that recognize online training as legitimate, creating a truly favorable environment for both lecturers and students to learn and be recognized for their learning outcomes. Building and issuing policies requires careful and scientific research but is not fundamentally a big challenge. The main challenge lies in policy implementation because to put policies into practice, we need a system of tools to monitor, manage and ensure the quality of online education to ensure the value of this form of training.

### **2.3. Requirements of digital transformation at higher education institutions**

#### *a. Technology infrastructure*

To implement digital transformation in higher education, technology infrastructure is an essential requirement. Technology infrastructure includes hardware devices, applications/software, network connectivity, strong bandwidth, teaching/research support tools/platforms and student experiences. These tools, as technical infrastructure, must be stable and reliable enough to operate the requirements and features of education and training. In addition, digital transformation requires individual programs and software to be integrated and compatible with each other, thereby helping students, teachers and schools interact in teaching, management, learning, evaluation, testing and management activities.

#### *b. Information technology skills*

To make the digital transformation process fast and effective, universities need to improve their IT skills, skills in using electronic devices, teaching support tools and management on digital platforms. In addition, teachers need to constantly update, learn and master technologies to be able to guide and support learners on how to access and accept technology, inspire learners to maximize resources. Learners on digital platforms also need to ensure that they have proficient IT skills and can adapt to the development of teaching tools and online learning platforms.

#### *c. Internal regulations system*

If universities want to digitize their internal regulations system, first of all, universities must build processes, regulations, rules and internal regulations of the school at a certain level of completion and stability.

### **3. Digital transformation in management and training activities at Hung Vuong University**

Following the decision of the Prime Minister on digital transformation in education, Hung Vuong University in recent years has always been concerned about the issue of applying IT in teaching and management activities of the school, helping the school improve management capacity, improve administrative reform and improve training quality, creating human resources that meet increasingly stringent requirements today.

### **3.1. In management activities**

The school has implemented and put into use the document management and operation information system since 2020. The system has overcome difficulties in managing documents in the traditional way. Documents are stored in large quantities and fully on the system to facilitate searching and reviewing issued documents, saving costs for printing paper documents, time for transferring and receiving documents between faculties, departments, centers, and school leaders quickly, especially ensuring the interoperability of documents between faculties, departments, and centers. The system also helps school leaders monitor the progress of work of each individual and unit.

### **3.2. In training activities**

In training activities, the school focuses on building a digital library with thousands of documents to meet the document needs of all students; deploying the use of the course registration system. At the same time, the school builds e-learning software and moves towards implementing B-learning on a school-wide scale.

#### *a. Electronic Library*

Currently, with the development of modern devices such as computers, tablets, smartphones,... it is easier for us to access digital documents. Therefore, the demand for using digital documents of students and lecturers to serve research activities, teaching and learning is increasing and becoming more urgent, requiring schools to build an electronic library system to meet the needs of accessing and using information sources anytime, anywhere for readers.

In recent years, the school has built and put into use a digital library system with a relatively large number of documents. The electronic library system has some main functions as follows:

- Students and lecturers can access digital archives;
- Update digital documents conveniently;
- Access to the system anytime, anywhere;
- Search for documents by information: Author, document name, publisher,..;
- Documents are stored stably, can be downloaded to personal devices;

Supporting in performing the tasks of traditional libraries such as: storing, accessing and preserving information, looking up information;

The digital electronic library system helps students and lecturers to access digital documents easily, quickly meet the

needs of searching and finding information anytime, anywhere. Up to now, the digital library has had 100456 visits.



Figure1. Electronic Library

*b. Course registration management system*

Since 2009, the school has implemented training under the credit system, so it has put into use edusoft training management software. In recent years, the school has developed an intelligent university administration system to replace the edusoft system. These systems basically meet the requirements of training management at the school. The main functions of the software are:

- Manage students to register for courses
- Manage and schedule timetables of lecturers and students.
- Manage student learning outcomes.
- Effective classroom management

The introduction of smart university administration software is a wise decision of the school's leadership. The software has very well supported activities in learning under the credit system: students register for courses before each semester, update and store student learning results, arrange student timetables. and teachers, arrange classrooms. In the academic year 2022-2023, the system has completed registration of subjects for nearly 5000 students, scheduling timetables for 1120 courses.

*c. Online teaching system and E-Learning*

During the Covid-19 pandemic outbreak, Hung Vuong University quickly researched and put into use online teaching software that allows teachers and students to easily connect with each other and integrate many features to serve teaching activities such as recording, setting up customizations, creating effects, sharing and presenting electronic lesson plans, correcting recorded clips, exporting films in required formats. Google Meet, Microsoft Teams, Zoom are applications that the school has chosen, in which Microsoft Teams software is the main software used for all lecturers and students during online teaching time. In addition, lecturers can use other online teaching software to increase interaction with students.

When the Covid situation subsided, it was realized that online learning was a trend in the future. Therefore, the school has implemented the construction and deployment of E-learning online learning system. The E-learning online learning system allows lecturers, students and related departments to organize teaching and learning on an online environment very effectively. With E-Learning system, lecturers can directly teach learners or assign homework, store lectures, study materials under many different formats such as Word, PDF, Video, ...; learners can follow live lectures or can

study anytime, submit assignments to teachers, discuss in forums, perform online tests. Lecturers can organize tests and evaluate students directly on the system with many different forms of testing evaluation suitable for each subject and characteristics of each field.

In 2021, E-learning learning system was built and tested with 60 courses at Faculty of Engineering – Technology and Foreign Language Departments with 1312 students, 45 lectures, initially bringing quite high efficiency in helping students access learning resources on the system and studying.

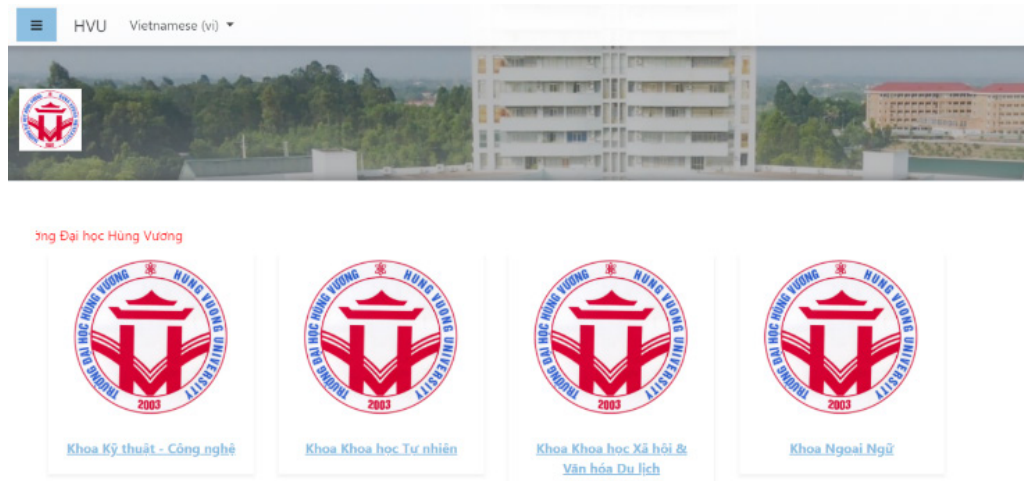


Figure 2. LMS system

d. Evaluation system

In higher education, assessing learners is an extremely important activity that cannot be separated from training activities. Applying information technology in assessment is a necessary condition for schools to improve learners’ assessment capabilities. Hung Vuong University has recently implemented standards. This is a powerful support tool for the school’s assessment work. In the academic year 2021-2022, the school had 245 multiple-choice tests on the system.

online testing software: <https://thitruoctuyen.hvu.edu.vn>. The software has been applied in organizing and managing tests for subjects with multiple-choice tests, organizing English language proficiency assessments, computer science assessments that meet student output

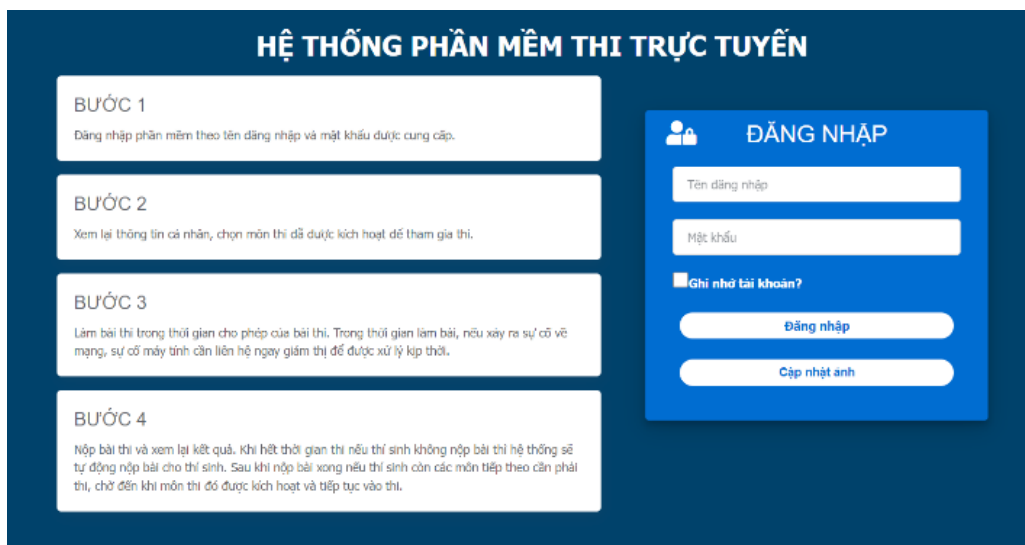


Figure 3. Online Exam System

#### 4. Assess the degree of digital transformation of Hung Vuong University in the direction of smart university governance

According to Decision No. 4740/QĐ – BGTĐT issued on December 30, 2022 on promulgating a set of indicators to assess the degree of digital transformation of higher education institutions [2], the research team synthesizes and conducts the assessment of the degree of digital transformation of Hung Vuong University is as follows:

**Table 1. Evaluation of digital transformation**

TT	Evaluation Criteria	Degree of meeting criteria
1	Digital transformation in training	
1.1	There is a plan and regulation of online training	100%
1.2	Deploying online software: Msteam,..	90%
1.3	Implement online learning management system LMS	94%
1.4	There is an online library system	95%
1.5	organize exams and tests on computers connected to the network	92%
2	Digital transformation in management	
2.1	implementation of management software for higher education institutions	80%
2.2	deploying electronic office (electronic documents, work records, digital signatures,..).	95%
2.3	deploying services to serve learners (online enrollment, credit registration, information search and study results, tuition payment, diplomas and certificates, graduate students..).	92%

#### 5. Conclusion

Digital transformation in university management and training is an urgent issue at present. Digital transformation is not only about applying new technologies, digitizing data, but it is also about changing thinking, capacity and methods of the entire team from officials, lecturers to leaders to be able to build and operate an education system on a digital platform. Digital transformation at universities creates a new working and learning environment, changes the way universities are managed and operated, changes teaching methods, and changes teaching techniques, teaching technology, and changes learning methods on digital platforms for learners.

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