

# DIGITAL TRANSFORMATION IN UNIVERSITY EDUCATION: DIFFICULTIES AND CHALLENGES

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## **Abstract:**

With the continuous development of technology, digital transformation is the trend of society and especially in higher education. The application of technology in higher education plays an extremely important role, creates a turning point in the development of higher education, creates many new, smarter, more effective and economical higher education methods. Digital transformation in higher education is the application of advanced technologies to enhance the learner's experience; improve teaching methods as well as create the most convenient learning environment. This article will analyze the benefits, difficulties, challenges and proposes some solutions to promote digital transformation in higher education.

**Keywords:** digital transformation; university education; benefit; difficult; challenge; solution.

## **1. Introduction**

The National Digital Transformation Program to 2025, with orientation to 2030 approved in Decision No. 749/QĐ-TTg dated June 3, 2020 of the Prime Minister is “Development of a platform to support teaching and learning distance learning, thoroughly applying digital technology in management, teaching and learning; digitizing documents and textbooks; building a platform to share teaching and learning resources in both face-to-face and online forms, developing technology for education for personalized training. 100% of educational institutions implement distance learning and teaching, in which pilot training programs allow students to study online at least 20% of the program's content. Using digital technology to assign homework and check students' preparation before going to class” [1]. Digital transformation applications will create a smart educational model, thereby make learning knowledge simpler and easier for learners. The explosion of technology platforms has created favorable conditions to impart knowledge and develop learners' self-learning ability without being limited in time and space. Currently, digital transformation applications are applied in three main forms [2]: firstly, apply technology in teaching methods: smart classrooms, programming, ... in teaching; second, apply technology in management: tools for operation and management; Third, apply technology in the classroom: teaching tools, facilities.

Simply, digital transformation is “a change in the way an organization operates to improve the quality of products and services by exploiting the application of technology and data”. For higher education, this goal is to improve the effectiveness of

governance, improve the quality of training, and serve the development of the country. In essence, digital transformation does not change the core values or model of a higher education institution, but transforms core operations through technology and digital platforms, and seizes opportunities that they bring. In other words, digital transformation is the intersection between technology and training strategy. Three factors that promote to apply digital transformation at a university are: (1) State budget reduction; (2) learners' expectations; (3) technology development [3]. Three basic components of the digital transformation process include: (1) people; (2) strategy; (3) technology. Four expected effects when implementing digital transformation are (1) improve training quality, (2) enhance research efficiency, (3) create new training methods/models, and (4) increase financial resources. It will be one-sided if digital transformation is considered as the way to teach via webcam. It is necessary to inspect digital transformation as a whole modern training system with many new challenges and new opportunities. Therefore, digital transformation is based on: (1) fast adaptive thinking and accept changes, from habits to business processes; (2) basic knowledge of using technology of administrators, lecturers and learners; (3) technology infrastructure (network and computing systems), equipment, and software.

## **2. Benefits, difficulties and challenges of digital transformation in university education**

### ***2.1. Benefit***

#### *2.1.1. Monitor student performance effectively*

One of the positive effects of digital transformation on the higher education sector is to provide a more practical way to control students' learning and their achievements. Technology plays an important role in the way to allow teachers and parents to check students' progress. For example, teachers and parents can compare the difference in students' actual learning and working results from time to time with the data recorded by the digital system. From that, teachers and parents can control or received students' achievement.

#### *2.1.2. Improve student learning outcomes through data analytics*

Schools can use statistical tools to control or give the solutions to improve student learning outcomes. By collecting the information through technical tools, schools can clearly understand what the needs of each student are. For example, technical tools help to find the reason why students are absent from school without permission, from that, the school can come up with appropriate solutions to support students. Technology will help us "diagnose" the causes of problems more efficiently, easily and reliably.

#### *2.1.3. Learn "collaboratively"*

Learning on digital platforms forces teachers and learners to collaborate. Instructors can create and manage student groups on online learning platforms. Doing research, writing scientific articles or making presentations becomes easier with the help

of creative, online collaboration platforms such as google docs, twiddla, edmodo,... These interactive tools have been adopted and used in many universities.

#### *2.1.4. Have future-focused training programs*

When applying digital transformation, the training program can be easily updated the content that has potential or it will be improved the world technology such as: robotics, artificial intelligence, automation, etc. Thereby the quality of human resources will be improved.

#### *2.1.5. Enhance cooperation between parents and teachers*

Automatic software provides information about students and transmits this information to parents and teachers, thereby the cooperation between parents and teachers in educating becomes earlier.

#### *2.1.6. Save time*

Digitization technology saves a lot of time for education managers and learners; flexible and high efficient.

### **2.2. Difficulties and challenges**

#### *2.2.1. Leadership determination, thinking, management capacity and teaching*

The ability and readiness for digital transformation, understand the meaning and core values of digital transformation for leaders, lecturers and learners and stakeholders are difficulties and challenges with digital transformation in higher education. Education leaders, school leaders, teachers must change. They have to deal with methods of teaching, training and management in virtual space, effectively exploit technology for this purpose. Therefore, they need to be equipped with digital knowledge and thinking to be able to master and understand the limitations of technology. The way and the transformation process do not have a common formula, which require leaders to set up their own transformation strategies, solutions and roadmap without much reference from experience and practice in other countries, other schools, other countries [4].

#### *2.2.2. Skills in using and mastering technology*

Digital transformation requires those who directly conduct the training to have sufficient technology skills.

#### *2.2.3. Infrastructure and technology platform*

The transmission line, bandwidth, the software and equipment to support teaching and learning are big challenge. Digital transformation requires new technology infrastructure for both learners, teachers, educational institutions and management agencies. Accompanied by software applications and platforms so that all educational and management activities at all levels take place on the same platform, compatible, connected and integrated.

#### *2.2.4. Readiness of learners*

A lot of students are not ready for online learning for many reasons: The equipment, telecommunications infrastructure, teaching methods and techniques of the lecturers.

#### *2.2.5. Cost*

The initial investment cost for digital transformation is highly compared to the initial efficiency.

The biggest difficulty of digital transformation is changing habits. The biggest challenge of digital transformation is having the right perception. Digital transformation is unprecedented, so getting it right is difficult. The correct perception of digital transformation must also be placed in the specific context of an organization. Digital transformation is a matter of awareness, not a technology issue, or a dare of leaders.

### **3. Proposing some digital transformation solutions in higher education**

#### ***3.1. Maintain continuity and adaptability of training activities***

- Compile the textbooks or choose the course books suitable for both online (online) and face-to-face (offline). The detailed outline and materials must be fully updated before the new course begins.

- Make sure to have the minimum requirements for transmission lines, bandwidth, and necessary equipment. Organize training courses for lecturers and managers on how to operate and operate in the digital environment.

- Add to the training program a number of compulsory basic subjects on technology to provide the minimum knowledges to help learners integrate into this digital education environment.

- Develop and issue regulations and regulations on digital transformation.

#### ***3.2. Teaching methods meet high technology requirements - highly interactive***

- Take advantage of digital tools and platforms to provide knowledge continuously, anytime, anywhere for learners.

- Provide opportunities for learners to approach the real environment through training combined with enterprises. With this approach, learners will experience new learning models: practical experience, problem-solving methods, learning how to integrate into the real environment,...

#### ***3.3. Build a teaching staff to meet high technology requirements - highly interactive***

- Organize training courses: teaching with technology, teaching in mixed model, training on using digital tools and platforms,...

- Organize and recompile subjects according to mixed teaching model, open learning model, interactive lessons, etc. Some subjects can refer to or use learning materials and documents from schools advanced university in the world.

- Promote the form of rewarding lecturers with excellent teaching achievements, forming a network of excellent lecturers so that they can guide colleagues in their departments/subjects.

- Bring lecturers to study and experience at domestic or international technology units.

### ***3.4. Digital transformation for scientific research***

Develop a network of scientific consultants: this will be the place where research proposals are publicly commented and evaluated, where businesses put their research paper first, where research proposals are received and funding is provided.

### ***3.5. Expand the audience of learners, expand access to technology for learners***

- Establish practice rooms, interactive technology experiments with full equipment and necessary support tools. Learners can realize their ideas or projects.

- Build extracurricular clubs, popularizing necessary technology knowledge for new learners.

- Integrate virtual reality, augmented reality and mixed reality into learning environment. This is an effective assistant for learners to experience technology.

- Minimize the release of traditional books and documents. Instead, provide digital learning materials, open repository of learning materials for learners.

- Open 24/7 channel to answer general questions and provide technical support.

### ***3.6. Development of applications for administration and administration***

On the common data platform are systems of supporting applications for operation and administration. These systems include applications for digital management - digital signatures, electronic offices, data statistics for report development, management work such as rewards, ratings, etc. These applications need to ensure consistency and interconnection throughout the system.

### ***3.7. Digital transformation infrastructure***

The success of digital transformation in higher education requires digital infrastructure. Digital infrastructure includes logical infrastructure and physical infrastructure. Logical infrastructure is data. Physical infrastructure includes connection network, strong bandwidth, modern pedagogy, scientific research, learner experience and the most important - tools/platforms to support deployment. These tools, which in the form of technical infrastructure, must be stable and reliable enough to operate the requirements and features of the new generation of education and training. Therefore, implementing digital transformation requires a clear and specific policy for this prerequisite component.

## **4. Conclusion**

Properly understand digital transformation, properly assess the current situation, correctly identify and forecast challenges and problems to build a reasonable digital

transformation implementation roadmap to quickly improve training quality and efficiency. Creation is very important for universities in the current period. Digital transformation in moral education institutions should be seen as a long-term, strategic solution, associated with strong and radical reforms in teaching, learning and training management, not a situational solutions to deal with Covid. In digital transformation, the most important thing is not technology, either financial investment, but the high political determination of the head of the higher education institution and the willingness of the staff will be needed to change positions, teachers in the school.

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