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Opportunities and Challenges of Digital Transformation in Improving Quality of Higher Education in Vietnam

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Abstract

Digital transformation in the world began to be discussed around 2015 and popularized since 2017. Along with the explosion of cloud computing, artificial intelligence (AI) and the Internet of Things (IoT), digital transformation is gradually becoming a global trend, affecting all aspects of life including economy, society, education... In Vietnam, since 2018, digital transformation has received special attention from the Party and Government and up to now it has become an inevitable trend in the 4.0 digital revolution. In this article, the author will discuss the matter of digital

transformation in education, highlighting its status as an unavoidable trend on a global scale as well as locally in Vietnam. The analysis will delve into the opportunities and challenges that digital transformation presents for enhancing the quality of university education in Vietnam.

From there, with the aim to equip a workforce with digital transformation skills that meet the development requirements of the country, the author proposes a number of recommendations to speed up the implementation of digital transformation.

Keywords: Digital Transformation, Digitalization, Digital Transformation Process, Digital Transformation Content, Vietnamese Universities, Higher Education, Information Technology

1. Introduction

Digital transformation in education is the transformation of the way of teaching, learning, and managing education based on digital technology, aiming to establish a high-quality, cost-effective and easily accessible education system for all.

Since the onset of the COVID-19 pandemic and its significant impact on global education, governments around the world have enacted various policies to encourage online training.

In Canada, Bangladesh, and Mauritius, work-based learning, vocational learning, or practical content learning has been partly shifted through online platforms; online training packages are also being developed.

In Chile, educational institutions use the Padlet tool to evaluate learning outcomes through video recordings of students practicing digital simulations.

In the US, the national educational technology plan has been issued since 2010, which defines personalized education as putting students at the center and empowering students to be in control of their learning by providing flexibility in many different aspects.

The Philippines and Canada provide support for teachers and lecturers to exchange their teaching strategies, experiences and practices in the form of online tools, devices, Information Technology (IT) labs, and high-quality Internet. Additionally, telecommunications providers support teachers and lecturers in the form of tax rebates on data bandwidth.

In addition, many countries have provided diverse support measures for teachers and lecturers through online training, seminars and conferences. These activities are aimed at improving the IT skills of teachers and lecturers and supporting the preparation of e-learning materials.

In 2020, under the impact of the COVID-19 pandemic and the 4.0 Industrial Revolution, the Prime Minister of Vietnam approved a decision on the "National Digital Transformation Program to 2025, with a vision to 2030". Accordingly, education is one of the prioritized sectors for the initial implementation of digital transformation, with specific tasks including:

* Coordinating diverse forms of education; Promoting the organization and implementation of online teaching and teaching on television by subject and grade level.

* Building a shared online teaching & learning platform, standardized lecture system, and shared electronic learning materials repository to create an interactive environment and increase adaptability and experience for learners.

* Strengthening infrastructure to ensure hardware and software equipment meet digital transformation during the epidemic period.

In addition, the Government of Vietnam has directed the launch of the "Wave and computer for children" program to help students, especially students in remote and extremely difficult areas, to have equal learning conditions.

2. Theoretical Basic

Opportunities and challenges in improving the quality of Vietnamese university education in the context of digital transformation

The quality of university education depends on many factors such as: lecturers, students, training programs, content, teaching methods, assessment, learning materials, training management...

In the context of digital transformation, enhancing the quality of higher education in Vietnam is confronted with numerous opportunities and challenges.

Opportunities:

First, creating a positive learning environment and improving the quality of education by strengthening the connection between lecturers and students: Digital technology provides lecturers with various tools to improve teaching methods such as online lectures, video tutorials, games, online tests, online exercises and electronic reference materials. This helps students access online materials, online courses, interactive tools and learning support, allowing them to access knowledge more easily, flexibly and conveniently, and to study anywhere and anytime.

For example, online learning software such as Zoom Cloud Meeting, Google Meet, and Microsoft Teams help lecturers and students interact online; students can submit questions and receive immediate responses from lecturers, making the learning process more effective. Google Classroom allows students to easily access learning materials and interact with instructors: after students submit an assignment, instructors can grade, comment and return grades online. Additionally, instructors can upload documents, materials and videos to be downloaded and referenced without incurring printing costs. Second, converting to digital learning materials and digital libraries help reduce costs and save time:

Compared to traditional learning materials, digital content offers advantages such as dynamic audio-visual elements and easy sharing, storage, and searchability. This transition reduces the cost of printing and distributing curriculum, lecture, and reference materials, while increasing student access to educational resources. With software, applications and online platforms, educational materials can be created, shared and stored easily, efficiently and cost-effectively. Instructors can generate and share online documents such as electronic lectures, reference materials and instructional videos instead of having to print and distribute documents as traditional education requires. Students can access these materials at any time and from anywhere, helping them save time and allow them to study and research more flexibly.

Previously, university libraries used to have a small area, a small number of books, and a restricted borrowing period (during office hours only), which did not meet the learning

needs of students. However, digital learning materials have now evolved, allowing students to access materials from anywhere without limitations in time and space. Especially in the context of the COVID-19 epidemic, digital learning materials have become even more important as students cannot go to the library to borrow books. Digital learning materials also help students and lecturers search for domestic and foreign document sources, improving research and training capacity in higher education.

Third, digital transformation helps develop an online training system: this will help students learn online remotely, giving them the opportunity to study anytime and anywhere, creating conditions for them to save both time and effort for studying. The online training system helps universities manage and track student learning progress as well as lecturers' teaching activities, analyze data to make effective decisions, and save operating fees for universities.

Fourth, accelerating speed and efficiency in teaching management: IT and digital transformation enable teaching managers to easily monitor, evaluate and manage the teaching activities of both lecturers and students. Tools such as learning management systems, student databases, and classroom management software will help universities better manage teaching and learning processes, offering optimal solutions to manage course registration, transcripts, and more.

Fifth, the quality of education and training effectiveness is improved with digital transformation: digitalization will help Vietnamese universities offer diverse learning methods, better teaching quality and more effective assessment in promoting learners' abilities. By using digital technologies such as online training systems, lecturers and students can access a variety of learning resources including videos, lectures, documents and online tests. This equips students with better interaction and participation in the learning process and helps them access knowledge more easily. In addition, using online assessment and feedback tools also enables instructors to more accurately evaluate learning progress and provide timely feedback to help students improve learning results. These tools also help instructors create tests and exercises to assess learning outcomes more quickly and easily, thereby boosting training effectiveness.

Finally, digital transformation also aids Vietnamese universities in conducting assessments more effectively. Using online assessment tools, schools can assess students' competencies and learning progress automatically and accurately. This helps institutions make better decisions about improving the quality of education and ensures that students are learning in the most effective way.

Challenges:

First, the initial investment costs: improving the quality of university training in the context of digital transformation requires investment in infrastructure and new technologies. Currently, many Vietnamese universities still lack the latest laboratories, computer rooms, network systems and teaching software to support training according to international standards. Providing enough funding to implement these projects is still a big challenge for many Vietnamese universities. To implement a digital system, universities need to invest a large amount of money in purchasing equipment and software, as well as training lecturers and students to use that equipment.

Second, the quality of faculty: to improve the quality of education, there is a need for faculty members with high qualifications and experience in their respective fields, as well as the ability to effectively use new digital technologies. However, the shortage of highly qualified and experienced faculty members persists in many Vietnamese universities, especially in the fields of information technology, computer science, telecommunications, and data science. This leads to inadequate teaching quality and a failure to meet the requirements of the labor market.

Third, changing teaching methods: Lecturers and students need to adapt to new teaching methods, which may pose difficulties for some.

One of the big challenges for lecturers is learning and applying new technologies into the teaching process. This requires them to have time and resources to research and learn new technologies, and to adapt to new teaching approaches.

For students, a significant challenge is adapting to new teaching methods. Students may be familiar with traditional learning methods and have difficulty converting to new approaches.

Fourth, lack of alignment between training and the labor market: Currently, universities have not fully synchronized their training programs with the needs of the labor market. This leads to students not being able to meet the demands of businesses and having difficulty finding a job after graduation due to a lack of practical skills and knowledge.

Fifth, confidentiality, security, copyright concerns: With the implementation of online learning, student data is shared on online platforms, posing an information security threat. With a large number of students accessing these platforms, malicious actors can take advantage of vulnerabilities in classroom management to access students' personal information or compromise the system altogether. Furthermore, copyright-related issues are also a challenge. Numerous learning materials are shared on online platforms, but this sharing often does not adhere to author copyrights. This leads to copyright infringement and incurs harm to authors.

3. Recommendations

To seize opportunities and overcome challenges of digital transformation in improving training quality at universities, the author has put forward the following recommendations:

For the Government, State and Ministry of Education and Training (MOET):

Development and implementation of policies and regulations are necessary in creating a legal framework for digital transformation in education. This will help ensure the sustainable development of digital education and protect the rights of parties involved in the process. Providing financial and institutional support to pioneering universities is also an important step in promoting digital transformation in education. These universities can serve as models and anchors for other schools to learn and apply best practices.

To complete the legal framework for online training, the MOET should consider incorporating this method into the regulations governing university education with an appropriate percentage. In addition, the MOET should issue regulations to ensure the quality of distance education programs and develop a plan for the next phase of remote education. Furthermore, continuously promoting connections between higher education and businesses is

crucial for fostering better cooperation in the future.

For Universities:

It is essential for universities to continue to raise awareness about the inevitable trend of digital transformation in higher education for leaders, lecturers, students, and staff. Through this, schools are able to leverage assessment data, student feedback, and labor market needs to make decisions and guide future innovation of program content, methods, and forms of training.

Investing in IT infrastructure systems and synchronous facilities for teaching activities, scientific research and training process management is also crucial. Emphasis should be placed on investing in educational materials to ensure the quality of education is enhanced, teaching methods are changed, and assessments are improved. Moreover, collaboration among universities to build digital libraries will save time, effort, and financial resources. Additionally, it is necessary to seek funding from businesses, non-governmental organizations, and international organizations to support investments in IT infrastructure.

While raising investments in recruiting and training highly qualified lecturers with in-depth teaching experience, institutions should also have plans to improve the training quality of current lecturers by providing new courses and advanced programs in digital technology. Organizing training and development programs are beneficial to serve digital transformation and enhance the application of technology in teaching and learning for both faculty members and students. All of these efforts will foster enhanced teaching quality and improve the learning process for students.

Strengthening international cooperation helps universities access the latest and most innovative training and educational programs from leading universities worldwide, which betters the quality of training and effectiveness of teaching. At the same time, it is necessary to partner with businesses to ensure the alignment between universities' training programs and the labor market's needs. In order to achieve this, universities should organize exchange activities with businesses, provide training for students and offer students opportunities for external practical experiences to develop their skills and knowledge.

Lastly, instead of focusing only on traditional teaching methods, universities should strive to have a diversified teaching through combining face-to-face and online teaching, providing digital study materials, encouraging group study, and more.

For lecturers:

Actively researching to apply new technologies and advanced teaching methods into the teaching and assessment process can help enhance educators' teaching effectiveness, capture students' interest and ensure that students are equipped with the knowledge and skills needed to succeed in the digital era.

Educators can create better online learning experiences for students' by using technology tools such as video, webinar software, online forums, and online learning platforms. Through this, students are provided with study materials, lectures, online tests, and feedback quickly and conveniently. Lecturers should guide students in searching for, exploring, and actively absorbing information sources to enhance the role of self-study and self-research for students. Lecturers should continue to update their knowledge about

technology, study and learn about the latest technology applications in education. This enables instructors to use technology effectively, to make teaching more interesting, and to create more diverse and positive learning experiences for students.

For students:

To become future leaders of the nation in the 4.0 era, exceed the expectations of employers and society, and contribute to the sustainable development of the country, students should study and cultivate the following qualities, apart from their specialized knowledge:

Independent research and self-learning skills: for accessing and grasping new knowledge, enhancing professional expertise, and personal development in the rapidly evolving landscape of science and technology today.

Communication skills, both traditional and on social media: for accessing and exchanging information with diverse individuals.

Teamwork skills: for collaborating and coordinating effectively in completing academic tasks and cultivating the necessary working style for future engagement in businesses and organizations.

Creative thinking skills: for generating new ideas, products, services and processes to reduce costs and increase competitiveness.

Information technology utilization skills: The ability to use information technology such as office software, graphic design software, computers, and mobile devices is one of the most crucial skills in the digital transformation environment.

Continuous learning ability: for accessing and grasping new knowledge, thus developing themselves and becoming experts in their fields.

Problem-solving skills: for analyzing, seeking solutions, and addressing complex issues in both work and life. Accurate information processing, data analysis, and decision-making are crucial in the era of Industry 4.0.

Critical thinking: for evaluating and critically analyzing viewpoints, ideas, and solutions objectively, thus contributing opinions and engaging in useful discussions and debates.

Willingness to learn: for continuously improving their knowledge and skills as well as learning from others and practical experiences as the speed of technology and science advances are making knowledge and skills gradually outdated.

Disciplined and responsible personality: for managing time, organizing work, and efficiently completing tasks, thus ensuring professionalism and ethics in both study and work.

Open-mindedness and flexibility: for adapting and adjusting to the rapid changes in work and life environment in the Industry 4.0 era.

4. Conclusion

Digital transformation is playing an important role in improving the quality of training at Vietnamese universities. Digital solutions have been widely implemented, bringing numerous benefits such as increased access to information, knowledge sharing, learning management, interaction and support between students, lecturers and institutions. It also enhances teaching and learning methods, evaluates learning outcomes, and provides additional learning materials for students.

However, digital transformation also poses many challenges and requires universities to invest in IT infrastructure,

as well as training and capacity building for staff, lecturers and students. At the same time, digital transformation also affects the management and organization of school activities, so it is necessary to innovate management and organizational processes to meet the requirements of digital transformation.

To ensure the success of digital transformation and improve the quality of training at Vietnamese universities, there needs to be consensus and cooperation between stakeholders, from the government, universities, lecturers and students, to businesses and communities. In addition, appropriate solutions to ensure the sustainability of implementing digital transformation should be ensured to create real value for students and society in general.

In conclusion, digital transformation is presenting Vietnamese universities with the opportunities to improve training quality and enhance their positioning in modern society.

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