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DIGITAL TRANSFORMATION IN EDUCATION AND TRAINING IN VIETNAM

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Abstract

Digital transformation in Education and Training is an issue of concern in many countries. The explosion in information technology creates non-traditional training methods, vigorously promoting the development of profoundly transformative education for people. Digital transformation has contributed to improving the quality of management, teaching, and learning, an important factor for the education sector, and significantly impacts society in the immediate and long term. Therefore, Vietnam in general and the education and training sector in particular must urgently implement digital transformation requirements to take advantage of the opportunities the 4th Industrial Revolution brings. Through the actual situation, the article analyzes and evaluates the current situation, proposing solutions to complete digital transformation in the field of education and training in Vietnam today.

Keywords: Education and Training, Digital Transformation

INTRODUCTION

Education and training is a social phenomenon, an organized activity aimed at promoting, fostering, and developing knowledge, awareness, and skills and perfecting each individual's personality (Le & Tran, 2021). Vietnam, considered in the world's top 10 most innovative education systems, has continuously applied digital transformation to teaching and learning programs, training, and human development. In addition, Vietnam is implementing a digital transformation ecosystem, and digital transformation in education and training is inevitable. Educators and learners at all levels of education, from preschool to university, from formal to informal learning, are gradually becoming aware of the benefits of technology in general and information technology (IT) in particular in learning environments. In particular, with the great impact of the COVID-19 epidemic, digital transformation has further affirmed its importance in social development as a factor contributing to effective epidemic prevention and response to teaching and learning needs for teachers, lecturers, pupils, and students (Tran, 2023). The impact of the COVID-19 epidemic has created a driving force for digital transformation to become more vital than ever to promote universal education for all people, comprehensively develop the human element, and improve quality training human resources for the country, keeping pace with the process of international integration and comprehensive education. Realizing the importance of this issue, the article presents the theory and practice of digital transformation in education and training, from there, having an accurate and comprehensive scientific view, serving the guiding, controlling, and implementing digital education.

Literature Review

Digital transformation in education and training focuses on two main contents: digital transformation in education and digital transformation in training. Digital transformation in education includes digital transformation in educational management, teaching, learning, and scientific research. Digital transformation in control is to digitize management information, create large interconnected database systems, deploy online public services, and apply 4.0 technologies (AI, blockchain, etc.) to manage management, administration, forecasting, and supporting leadership and management levels in making decisions in leadership and administration (Kapur et al., 2018). Digital transformation in teaching, learning, testing and assessment is the digitalization of learning materials (textbooks, electronic textbooks, electronic lectures, e-learning lecture warehouses, multiple-choice

question banks), libraries numbers, virtual laboratories, deploying online training systems, conducting tests, assessing learners' capacity on azota, quizizz, testing with google forms...; Convert all teaching methods, techniques, classroom management techniques, interaction with learners to digital space, teaching and learning on platforms such as Zoom, Google Meet... Digital transformation in training is the application of IT to improve capacity, improve information technology skills, and innovate training methods in management, human resource training, vocational training, and apprenticeship (Zhang et al., 2023). Training and digital transformation in education will support innovation by reducing lecturing and imparting knowledge to develop learner capacity, increasing self-study ability, creating learning opportunities anytime, anywhere, and personalization and learning, contributing to creating a learning society and lifelong learning.

The application of digital technology in education and training contributes to improving the effectiveness of teaching activities, promoting an open education system, diversifying types of exercise, increasing the diversity and update of knowledge content, reducing costs, and increasing the efficiency of the management department.

Hanna (1998) has found that classes delivered on the Web provide a viable option for professionals. Online learning is becoming increasingly popular among professionals, offering several advantages over traditional classroom-based learning. Online classes can be taken from anywhere with an internet connection, any time of day or night. This makes them ideal for busy professionals who need more time to travel to a physical campus. Online classes typically offer a more flexible schedule than traditional classroom-based courses. Students can often choose their deadlines and pace their learning. Online classes are often more affordable than traditional classroom-based courses. This is because there are no costs associated with travel, accommodation, or textbooks. A wide variety of online courses are available, covering a wide range of topics. This means that professionals can find classes relevant to their specific career goals. In addition to the above advantages, online classes can be more effective than traditional classroom-based courses. For example, a study by the Babson Survey Research Group found that online students outperformed traditional classroom-based students on average by 5%. Of course, there are also some challenges associated with online learning. For example, students must be self-motivated and disciplined to succeed. Additionally, some students may need help learning in an online environment.

Cohen et al., (2020)summarized the problems in the current higher education system as **Accessibility and equity, Quality, and Relevance.** Higher education is not accessible to everyone, and those with access may not have the same opportunities to succeed. This is due to several factors, including financial constraints, location, and personal circumstances. The quality of higher education is not always consistent, and some students may not receive the education they need to succeed in the workforce. The curriculum in many higher education institutions is not always relevant to the workforce's needs. This can lead to graduates who are not prepared for the available jobs.

Markus & Silver, (2008) analyze how modern technology can improve learning for Generation Z and others through the example of higher education institutions in the United States. Marcus argues that Generation Z students are "digital natives" who have grown up with technology and are comfortable using it to learn. He also notes that Generation Z students are more likely to prefer personalized learning experiences and to be motivated by collaboration and social interaction. Marcus then discusses several ways modern technology can improve learning for Generation Z students and others. Marcus also discusses the importance of using technology to create personalized student learning experiences. He argues that personalized learning is more effective than traditional one-size-fits-all educational approaches. Marcus concludes his book by arguing that technology has the potential to revolutionize higher education. He calls on educators to embrace technology and use it to create new and innovative student learning experiences. Allen and Seaman (2007) analyzed higher education institutions in the United States that use distance learning in their annual report "Going the Distance: Online Education in the United States." The report provides statistics on the number of students studying remotely and determines the best universities for distance learning. The report found that the number of students taking at least one online course in the United States has increased steadily in recent years. In 2022, over 18 million students took at least one online course, representing over 37% of all students in higher education. It is important to note that the report by Seaman, Allen, and Seaman is just one of many resources that students can use to evaluate distance learning programs. Students should also consider other factors, such as the program's cost, the institution's accreditation, and the program's specific focus when choosing an online degree program.

Kwon (2021) traces the history of online learning from its early beginnings in the 1960s to the present day. They argue that online learning has undergone a paradigmatic

shift in recent years, driven by the increasing use of network technologies for collaborative learning in higher education. The authors define a paradigm as "a set of shared assumptions, concepts, values, and practices that constitute a way of viewing reality for a community of people." They also discuss the challenges and opportunities associated with the paradigmatic shift in higher education. They argue that instructors must develop new skills and knowledge to be effective in the new learning environment. They also say that institutions must provide students with the support they need to succeed in the new learning environment. Kwon et al. argue that using network technologies in higher education leads to a paradigmatic shift in how we think about teaching and learning. The new paradigm is based on the assumptions that students construct knowledge through collaboration and interaction, that understanding can be achieved in various settings, and that students learn best by working collaboratively. While some challenges are associated with the paradigmatic shift, the authors argue that the opportunities outweigh the challenges.

RESULTS

Digital transformation in education and training in Vietnam has achieved positive results, with new advances in management, training, teaching and learning methods, and applying IT to organizations. Digital transformation has been creating many positive changes in the education sector, creating a very tight system at institutions, from teaching to learning, associated with changes in methods and tools application: Big data, Blockchain, and IoT. Management now has adequate support from software such as SMAS, VNEDU - online electronic contact book, regular training software of the Ministry of Education, civil servant assessment: ETEP, TEMIS; Software for financial accounting: MISA, library management, Ioffice software to manage incoming and outgoing dispatches, ...; Zalo, Facebook, SMS serve to convey information to teachers, staff, and parents. In addition, industry data is updated in the system to help simplify the management of records and books of officials and teachers. In teaching activities, the trend of applying digital technology is expanding, making data exploitation for teaching more accessible and more effective. Teachers can capture learner information, develop appropriate teaching methods using classroom management tools, and measure and analyze learners' learning behavior. Also, documents and learning materials have been digitized and stored in virtual spaces.

The quality of electronic lectures is constantly improving, taking advantage of technological utilities in transferring knowledge skills to learners.

In training activities, online training and distance learning at educational institutions in Vietnam are increasingly developing, achieving remarkable achievements, and meeting increasingly diverse learning needs. The application of learning models (E-learning, Blended learning...) has brought changes in the way of imparting knowledge, differentiating learner levels, and personalizing knowledge reception. It can be said that learning models are not only new but also an inevitable trend in universities worldwide and schools in Vietnam in particular.

In addition, organizing training, education, and improving IT application capacity for managers, teachers, and learners at all levels has quickly accelerated the transformation process. Teachers with high IT qualifications and youthful energy are leading in developing digital competencies. This force is essential to self-training, fostering mutual support, and helping colleagues form and expand digital capabilities. Both teachers and students are equipped with the necessary skills to keep up with the pace of change in the 4.0 technology era, integrating teaching models and applying technology into learning, eliminating barriers to learning in the curriculum to train a workforce suitable for a demanding labor market.

However, there are still many difficulties and challenges on the digital transformation journey in education and training in our country. The quality and effectiveness of education and training could be much higher across regions. The education system is not synchronized, and GDPT only pays much attention to "literacy teaching," not paying enough attention to "teaching people," life skills, and "vocational training" for teenagers. Learning materials and digital data infrastructure still need to be stronger and meet the requirements for digital transformation. The application of information technology in remote areas still needs to improve. The legal corridor on IP needs to be clarified and specific. Many loopholes create opportunities for "online thieves" to operate. There is no unified coordination between the Ministry and education and training establishments in educational management; inspection, examination, and supervision work is unimportant. It can be affirmed that the education sector's facilities still need improvement and improvement. Equipment and laboratories for teaching and learning need to be improved, and vegetarianism is common. In addition, the quality of human resources needs to meet the requirements of digital transformation in education and training. The IT level of

lecturers and teachers in Vietnam is uneven, and there is still stagnation and reluctance to change teaching methods. On the other hand, regarding the knowledge reception team, many students still keep the habit of "opening their mouths and waiting for more information" and being lazy to learn and research.

The above inadequacies originate from many reasons, of which limited thinking and awareness are the key issues, the leading cause leading to many other causes. The viewpoint "Education is a top national policy" has not been thoroughly grasped at all educational management and direction levels. Many organizations and individuals at all levels of the industry do not adequately and fully realize the importance of educating the young generation, especially in the context of the country's integration with the world. They have yet to grasp the true nature of digital transformation in education, so they have not given adequate priority to creating conditions for educational development. Human resources participating in the digital transformation process still need to understand the concept of teaching innovation. Next, educational management still has many weaknesses and inadequacies: the teaching staff is weak, lacking, and inconsistent, and teaching methods are slow to innovate. Financial and budget issues are still tight, and there needs to be mechanisms and policies suitable to the context of digital transformation, which also lead to limitations in digital transformation in education and training.

DISCUSSION

With the development of digital transformation, the development of Science and Technology has brought great benefits to human life in general and in the field of Education and Training in particular.

The innovation and development taking place on a global scale is an excellent opportunity for Vietnam to quickly access new trends, new knowledge, theoretical foundations, organizational methods, and teaching content and take advantage of international experience to innovate and develop. Shortcomings in facilities, infrastructure, and databases; Limitations in guidelines, policies, and leadership teams, officials, lecturers, teachers, and learners need to be removed because they can be an obstacle to "retaining" the digital education industry at any time, causing us to miss development opportunities and most importantly, fail to meet the human resources needs of society. However, the most significant difficulty is hesitation, not understanding how to move, often leading to

shyness. Besides, the story of digital transformation requires a whole system. While we have done some stages in advance, some still need to be done, making it difficult for the online system to be effective. Third is a policy issue because doing digital transformation will have sacrifices; there are things we have to contribute, and if we lack a mechanism to create motivation, it will sometimes create obstacles in the digital transformation process."

Digital transformation in education and training has become a practical key for our country to realize national education goals in new conditions, circumstances, and the country's overall development process. Digital transformation helps complete all stages of the educational process and integrates Vietnamese education with world education. The Education and Training sector has actively implemented the digital transformation process, and we have done quite a lot. However, there are still many difficulties and challenges because digital transformation is more than just a group of solutions or a machinery and technical equipment system.

People - the root of digital transformation. Teachers and learners must rely on digital transformation's benefits to develop and learn for themselves. Because "now students have too many information channels and documents. Teachers must change from imparting knowledge to knowing how to select and gather knowledge to build programs and lesson plans, especially personalizing it for each student." Therefore, digital transformation Education and training is a large field with many challenges. However, if the organization succeeds, digital transformation will create a solid and profound revolution in the education and training industry, particularly in developing digital transformation in Vietnam.

Digital transformation is not the responsibility and job of one organization, department, or individual but everyone in the entire education sector. We need strategic solutions for solid and radical reforms in teaching, learning, and training management to accomplish this.

Based on the above analysis and assessment of the current status of digital transformation in the field of education and training in Vietnam, the authors propose the following solutions:

Firstly, the Education and Training sector is essential to promote the national digital transformation process. Therefore, the Education and Training sector needs to focus on implementing a number of specific solution tasks including: (1) Implementing solutions to improve Vietnam's human resource component index (HCI) according to the assessment

method United Nations e-government; (2) Integrate educational content on national digital transformation, especially basic skills, knowledge, creative thinking, and the ability to adapt to the requirements of the 4th Industrial Revolution appropriately introduced into school teaching; (3) Implement information dissemination (such as universal literacy), deploy primary information technology teaching, familiarize students with information technology for students at all levels, right from school, supplement knowledge awareness for people and the whole society, primarily through community education centers and continuing education centers; (4) Strengthen application-oriented training of professional IT human resources to serve digital transformation requirements in different industries, using business evaluation as a measure for the training quality of schools in the country. IT field.

Second, the Ministry of Education and Training needs to focus on directing the development and implementation of the Project "Strengthening the application of information technology and digital transformation in education and training in the period 2022-2025, with an orientation to 2030". Clearly define tasks to be performed first and charges to be completed later. At the same time, it is necessary to review the existing IT infrastructure system throughout the industry to ensure connectivity and efficiency. In addition, it is also essential to grasp and connect with each Ministry, sector, and locality so that the implementation process of the Education sector will be on a unified axis, both avoiding waste and creating sustainable and long-term effects.

Third, focus on human training, raising awareness, and training teachers at all levels: "Human factors and issues of awareness and capacity are the most important. Only by having a correct understanding of digital transformation and its urgency can we actively self-study, participate in training, and implement it in practice." Each individual must correctly and deeply perceive that "digital transformation is inevitable," which is the survival of training in the current context. To successfully apply breakthrough technologies and digital transformation in education, training, and vocational education, the critical factor is the team of teachers and teachers who are directly involved in carrying out the work. Training must have sufficient skills to use technology and readiness to accept technology on the part of learners. Therefore, it is necessary to raise awareness, popularize ideas, and organize training for each teacher and lecturer of the school to grasp the importance of digital transformation and build a culture of digital transformation in education, aiming to successfully implement digital transformation in education.

Fourth, improve the management capacity of education administrators at all levels. Officials are the root of everything, so governments at all levels need to have strategies to build good educational managers to meet the expectations of our country in the present and the future. Management is an essential factor in ensuring discipline and order. Managers must be both knowledgeable and professional to effectively and efficiently organize and implement the directives, instructions, regulations, programs, and plans of their superiors. Good models and new methods are suitable to trends and actual situations in localities and units. More practically, education and training managers need to form a political ideology of management that takes national, people, and collective interests above personal interests.

Fifth, continue to innovate and improve the legal system, building a common legal corridor for the entire field of education and training. Improving the policy and legal system plays a vital role in educational management and ensuring the rights of teachers and learners. The Ministry of Education and Training must issue timely guidelines to recognize IT and digital transformation application results, focusing on approaches to perfect the education management database. Accordingly, regulations on data exploitation and sharing must be unified; access to data and forms of teaching; effective management of online courses; constraints on combined learning between face-to-face and online formats, conditions for opening schools, content licensing appraisal, accompanied by appropriate sanctions, avoiding loss of control and protecting political interests worthy of the learner.

Sixth, build synchronous network infrastructure and practical IT equipment to serve teaching and learning, create equal learning opportunities among regions with different socio-economic conditions, and promote the development of digital learning materials. (serves teaching-learning, testing, evaluation, reference, and scientific research); Forming a digital learning resource warehouse, open learning materials shared across the industry, linked internationally, meeting the needs of self-study and lifelong learning, narrowing the gap between regions; continue to innovate teaching and learning methods based on the application of digital technology, encourage and support the application of new education and training models based on digital platforms.

Seventh, strengthen information and propaganda to raise awareness for managers, teachers, parents, and students about the role of IT applications and digital transformation in educational activities and other activities. IT application results have been achieved.

Life is constantly changing and moving. Each person must also change and adapt, or they will be left behind. Digital transformation in education and training is a comprehensive change process, so all members and organizations must participate. The country's education system is innovating and transforming daily, so the participating forces must change to keep up with that process by transforming thinking and awareness, then gradually transforming the way of living and working based on digital technologies. For example, the conference "Orientation for implementing digital transformation of Hanoi's Education and Training sector in the context of the 4.0 industrial revolution" received many lively and multi-dimensional exchanges of opinions. Opinions focus on digital transformation solutions for schools, teachers, and students. The seminar "Youth are creative and proactive in the current digital transformation" was organized by the Youth Union of the Vietnam Journalists Association in collaboration with the Youth Union of the Posts and Telecommunications Institute of Technology, which is an opportunity to enhance Raise awareness for union members and young people about the meaning, role, and importance of digital transformation, as well as the responsibility of youth in digital transformation. Department of Education and Training and educational institutions on effectively implementing digital transformation.

Eighth, promote and improve the efficiency and quality of international integration and cooperation on digital transformation in education and training between countries. Learning from the practical experiences of organizations and governments implementing digital change in education is significant in ensuring the success of digital transformation in Vietnam, integrating Vietnamese education with world education.

CONCLUSION

The article discusses the progress and challenges of digital transformation in the field of education and training in Vietnam. It highlights the positive impacts of digital transformation on education, such as improved management, teaching methods, and the application of IT in educational institutions. Notable developments include the use of technologies like Big Data, Blockchain, and IoT, as well as the digitization of learning materials.

The article recognizes the growing importance of online training and distance learning in meeting diverse learning needs. It emphasizes the role of teachers and students in acquiring

digital skills to adapt to the changing technological landscape, thereby preparing a workforce for the demands of a competitive job market.

However, the article also acknowledges several challenges, including regional disparities in education quality, a lack of synchronization in the education system, insufficient digital infrastructure, and uneven levels of IT proficiency among educators and students. These challenges are attributed to limited awareness, organizational weaknesses, and inadequate policies in place.

To address these challenges, the article proposes a series of solutions. These include enhancing human resources, raising awareness, and training teachers, improving management, and building a robust legal framework. It also emphasizes the importance of investing in network infrastructure and IT equipment, promoting international cooperation, and continually updating teaching and learning methods based on digital technology.

In conclusion, the article underlines the critical role of digital transformation in achieving educational goals in Vietnam and integrating the country's education system with global standards. It stresses the need for a collective effort involving educators, administrators, and policymakers to overcome the challenges and harness the benefits of digital transformation in education and training.

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