DIGITAL TRANSFORMATION IN EDUCATION AND TRAINING IN VIET NAM

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ABSTRACT

There are many different definitions of digital transformation (DT) but be understood simply as transforming human activities from the concrete world to the virtual world in the network environment. The emergence of Artificial Intelligence (AI) has had an enormous impact on life, the economy, and society, brings incredible changes in the environment, working methods, and information. As a result, people approach more information, reduce distance, narrow space, and save time. Digital transformation represents an inevitable trend, happening rapidly, and the education and training industry can not be out of that trend, despite being considered by experts to be the safest industry in the AI explosion. The article analyzes some basic contents of DT applying technology in Education and Training, the current situations, future tendencies, and proposing solutions in the new period.

Keyword*: Digital transformation, Artificial Intelligence, Education and Training, Information Technology*

1. The state of Digital transformation in Education and Training in Viet Nam

Digital transformation will support Education and Training innovation towards reducing lecturers, imparting knowledge to develop the capacity of learners, enhancing self–study ability, creating learning opportunities anytime and anywhere, personalizing learning, contributing to creating a learning society, and lifelong self-learning. The explosion of Information Technology (IT), especially technology platforms IoT (Internet of Things), Big Data, SMAC (Social – Mobile – Analytics – Cloud), constitutes the digital education infrastructure. Multiple modern educational models are being developed and developed based on IT applications; effectively support personalization of learning (each person learns a curriculum and by a separate method, which is done automatically by IT systems); learning and research materials are accessed in a massive internet knowledge base; exchange information, the interaction between students-teachers, and families.

Digital transformation in education and training focuses on two main subjects: digital transformation in educational management and digital transformation in teaching, testing, monitoring, evaluation, and scientific research. In education management, including digitizing management information, creating shared database systems, deploying online public services, applying 4.0 technologies (AI, blockchain, data analysis, ...) to manage, monitor, administer, predict and assist in making quick and accurate

decisions. In teaching, evaluation, and testing, including the number of materials (e-books, e-lectures, multiple-choice test banks), digital library, laboratory simulation, construction and implementation of training models created online, build virtual universities (cyber university).

Figure 1: *Illustration of online learning model*

Currently, education retains a policy of defining the application of information technology as one of the nine main groups of tasks to effectively implement Resolution No. 29 of the Party Central Committee on the innovation of the comprehensive exchange of Education and Training. The Prime Minister has also issued a project to enhance educational management's application, support innovation in teaching-learning, and scientific research to be deployed in the robust industry. The education has digitized and established a database using 63 Departments of Education and Training, 710 Divisions of Education and Training, and about 53,000 educational institutions inside and outside the public. Currently, approximately 53,000 training institutions, 1.4 million teachers, and more than 23 million students have

been digitized and identified. The e-administrative management system connecting 63 Departments of Education and Training and more than 300 Universities and Colleges across the country connected with the Ministry of Education and Training operates effectively, stably, and promotes positive effects.

2. The benefits of technology to Education and Training

Improving the quality of education: The explosion in education technology has been producing modern academic methods, encourage the growth of education in the future with the emergence of AI combined with 4.0 technology platforms offers better learning experiences. Technology platforms such as IoT help increase security walls in educational institutions, track student behavior, monitor, manage and predict to issue alerts to administrators; big data help analyze learners' learning behavior for appropriate counseling support; Blockchain helps build a rational and intelligent record information management system to ensure a consistent and transparent sharing of data. Many large lecture halls at universities are equipped with large touch screens, placed in many positions to help learners keep track of teachers' lectures. The learning space is covered with wifi to support the research and exchange of documents.

The increase applied practical interaction: Virtual reality (VR) applications or enhanced reality in education to build virtual labs, virtual labs, virtual reality models capable of

interacting with people or AR books that teach virtual reality, etc. helps students have multi-sense experiences, understandable, curious and stimulate learning excitement, giving students the same experience as studying in real classrooms.

Creating flexible learning spaces and times, promoting open education: In recent times, open public (MOOC [1]) courses are exploding with big names: Coursera, edX, Udemy, Microsoft,... develop conditions for learners to acquire knowledge flexibly and conveniently anytime, anywhere and at all ages. Promote a modern education that enhances people's knowledgeable, multi-dimensional information, narrows all spaces, delivers time, and develops knowledge, awareness, and thinking. Learning spaces, tools, and infrastructure are focusing on digitization and intelligence. Classrooms in the 21st century provide interactive electronic boards, elegant desks instead of typical desks, learners visit virtual reality instead of imagining and viewing models.

Open learning resources help learners-teachers can access knowledge effectively at any time. Digital libraries represent an indispensable trend for modern education in the future.

Reducing training costs: technology has advanced, E-learning services have developed pricing policies for their customers. Courses will reduce costs for the organizers (space costs, learning tools) and significantly reduce tuition for learners (fees, travel costs) by studying online.

Knowledge assessment: use flexible forms of assessment incorporating technology, especially AI, helps to deliver time synthesizing and analyzing data.

3. Advantages and disadvantages

3.1. Advantages

Our Party and State are always interested in education, especially in the context of rapidly developing science and technology. Project "Strengthening the application of information technology in management and support of teaching-learning activities, scientific research to contribute to improving the quality of education and training in the 2016-2020 period, with a vision to 2025." was approved by the Prime Minister on January 25, 2017. According to the plan, by 2020, 100% of state management agencies on Education and Training and educational institutions should manage administrative work in a network environment, and 70% of meetings between agencies and educational institutions should use an online form.

Vietnam has an enormous advantage in the popularity of smartphones and the internet. According to the Digital Situation Report 2020 in Vietnam market statistics by We are Social and Hootsuite in hunger, about 70% of Vietnam's population uses the internet. The high percentage of internet users is one of the conditions that help Vietnam access education 4.0 faster.

Educational institutions have actively approached new technology to implement training based on open

online courses (MOOC), set AR and VR into building learning systems, or deploy digital learning systems.

3.2. Disavantages

However, the digital transformation of the education and training sector is still faced with many difficulties, which need to continue to be overcomed and completed as follows:

Network infrastructure, IT equipment (such as computers, cameras, printers, and machines), transmission lines, and internet services for schools, teachers, and students in remote and difficult areas are insufficient; many localities are lagging in terms of digital transformation (both in terms of education management and teaching – learning).

Digitalization, construction, updating of digital learning, appraisal and sharing of digital learning require a large investment in human resources (including human resources and human resources deployed) as well as finance to ensure adequate and quality digital data warehouses, meeting the requirements of learning, research and reference. As a result, the problem of developing digital learning (such as e-books, e-libraries, multiple choice question banks, e-lectures, e-learning software, simulation application software) has emerged as a standalone issue, making it difficult to control the quality and content of learning.

Collection, sharing and exploitation of educational management data and digital data needs a common legal corridor by regulations on copyright, intellectual property, information

security, and electronic transactions, and information sharing law. It is necessary to complete regulations on online learning programs, study duration, online assessment and assessment, online learning quality accreditation, recognition of online learning results (different from traditional learning); stipulating conditions for organizing classes and schools in the network environment (including both short and long term).

4. Conclusion

Digital transformation in education is not only innovation or technology but also about culture and people. By digitizing the learning experience, both teachers and learners can improve their skills, with one common goal: to create a more engaging and effective educational process. To promote digital transformation in education and training, and not to miss out on the opportunity that the Fourth Industrial Revolution brings, the education and training sector should focus on implementing the following specific contents in the coming years:

Firstly, disseminating, propagating, raising awareness and accountability, understanding ideology, and determination to join forces in digital transformation throughout the education sector, to each locality, to schools, teachers, and teachers and officers; building digital culture in the education sector.

Secondly, continue to promote the complete database system of the entire education and training sector (general education and higher education) connecting, and sharing data from the

central to local levels and schools; to thoroughly digitize, use electronic documents, school records, electronic scorebooks to replace paper, paper documents; activities of direction, administration, transactions, meetings, and training are primarily carried out in a network environment.

Thirdly, training and fostering a contingent of managers and teachers with the knowledge and IT application skills, enhancing the quality of forecasting through the application of technology platforms like Big data, AI, Blockchain. Ensure security necessary information to operate in the digital environment, to meet the requirements of digital transformation.

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CHUYỂN ĐỔI SỐ TRONG GIÁO DỤC VÀ ĐÀO TẠO TẠI VIỆT NAM

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TÓM TẮT

Có rất nhiều định nghĩa khác nhau về chuyển đổi số (Digital Transformation) nhưng có thể hiểu đơn giản là chuyển đổi các hoạt động của con người từ thế giới thực sang thế giới ảo trên môi trường mạng. Sự xuất hiện của Trí tuệ nhân tạo (Artificial Intelligence) tác động mạnh mẽ vào đời sống, kinh tế, xã hội, đem lại những thay đổi đáng kinh ngạc về môi trường sống, phương thức làm việc và trao đổi thông tin. Theo đó, mọi người tiếp cận thông tin nhiều hơn, rút ngắn về khoảng cách, thu hẹp về không gian và tiết kiệm về thời gian. Chuyển đổi số (CĐS) là xu thế tất yếu, diễn ra rất và ngành giáo dục đào tạo (GDĐT) cũng không thể nằm ngoài xu hướng đó dù được giới chuyên gia đánh giá là ngành an toàn nhất sự bùng nổ về AI. Bài viết phân tích một số nội dung cơ bản của CĐS ứng dụng công nghệ trong GDĐT, thực trạng hiện nay, xu hướng tương lai và đề xuất giải pháp trong giai đoạn mới.

Từ khóa: *Chuyển đổi số, trí tuệ nhân tạo, giáo dục, công nghệ thông tin.*

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