

DIGITAL TRANSFORMATION IN OPEN EDUCATION FOR DIGITAL CITIZENSHIP TRAINING

*Dang Hai Dang**, *Lai Minh Thu†*
Email: dangdh@hou.edu.vn

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Abstract: *Digital transformation can be considered as an inevitable process of any organization to serve the increasing demand for creating new values based on innovation, creativity, and effectiveness in accordance with customer experience. In this race, all organizations, large or small, are in the process of implementing, and the more well-prepared, the more competitive advantage they have. Under the pressure of an environment that promotes culture to create new values of products and services, education, especially open education, must improve the quality to meet the needs of society in lifelong learning for the whole population. This article analyses the role of digital transformation in the national education system, the importance of digital transformation for open education in the current period, and the relationship between open education and digital citizenship. On that basis, the author proposes implementing digital transformation in open education to serve digital citizenship training.*

Keywords: *Open education, learning society, lifelong learning, digital transformation, e-learning.*

I. Introduction

Open, integrated and inclusive education was mentioned extensively in Resolution 29. Fortunately, digital transformation contributes to making education more accessible. Open education also occurs to help the digital transformation process take place faster, at least from the perspective of knowledge

transmission. This mutual relationship can be summarised as follows: When digital transformation is applied, the teaching and learning process will occur mainly on the Internet. The number of people accessing the online training system has increased and when there is a sufficient number of desired users, the data will be analysed to find behavioural factors participating in

* E-learning Center, Hanoi Open University

† University of Labour and Social Affairs

learning to optimise the system experience and improve knowledge acquisition efficiency.

The article synthesises and analyses existing documentary sources to understand the process of developing open education through periods and educational policies related to open education in Vietnam. The relationship between open education and digital transformation is shown through analysing trends between enrollment data of different types of training over the past ten years at Hanoi Open University. It has proved that the more the openness level of education, the more the enrollment number is acquired. Moreover, the need for an online platform for providing basic and necessary knowledge to the whole community has restricted the equal education policy of the nation. Hence, a national policy and a common platform should exist to provide such services. In accordance with the digital transformation of the country, the priority of deploying digital citizenship training is initially put forward. Consequently, when every citizen is equipped with digital citizenship training, participating activities in the digital economy and society are deeply leveraged, boosting the digital transformation process to become faster.

II. The role of digital transformation in the national education system

In modern education, besides ensuring the provision of fundamental knowledge, we must also provide openness and flexibility to meet the learning needs of the masses. Open education, at this time, is not only an extension of traditional

education but also a positive dimension to change the traditional way of teaching and learning.

Thus, to have an overall view of the role of digital transformation in education, especially open education, let's look at how information and communication technology (ICT) has played a role in education since its early development.

After Doi Moi, Vietnam's economy gradually shifted from a planned economy to a market economy. At the same time, awareness of the role of higher education gradually shifted from elite education to mass education to meet the needs of human resource development. By 1993, the simultaneous establishment of two Open Universities in Hanoi and Ho Chi Minh City significantly boosted open education. At this time, other universities also began to charge tuition fees for all students. They only provided scholarships to students with high entry scores or good academic records during their studies. The number of learners accessing higher education has begun to surpass 15%. There was a sign of a gradual transition to mass higher education in the middle of the first decade of the 21st Century (Thiep L.Q, 2008).

Previously, the in-service training system was considered as a solution for working people to learn and improve knowledge for their professional skills. Parallely, correspondence education in the pre-internet era was also piloted in some educational institutions in the early 90s of the last century. These two forms of training mainly served public officials and employees who already have a certain level

of knowledge and access to educational information. In 1990, the famous TV channel VTV2 was born, which was also a breakthrough in providing education-scientific programs broadcast throughout the country.

Despite the limitations of the target audience, correspondence delivery method, and limited television broadcasting hours, the above forms also partly meet the learning needs of a large number of people.

According to a World Bank report in August 2022, only about 28.6% of young Vietnamese in the right age group have access to higher education, while this rate in developed countries is about 55% (World Bank, 2008). Every year, a large number of young people enter the labour market, join the army or become unemployed and need access to higher education.

Furthermore, in a recent report by the Vietnam General Confederation of Labor, by the end of 2021, Vietnam will have more than 200,000 technology drivers (motorcycles and cars), of which 26% have a college degree and above (Vietnam General Confederation of Labour, 2022).

Currently, digital transformation in the education sector is being implemented synchronously at all levels, the centralised database system in schools, students, and teachers has been digitised and stored at nationwide. Many operational software for training, enrollment, and office administration at educational institutions have been gradually improved and complied with regulations and standards for connection to the national system.

Digital transformation for the national education system has made positive changes due to high political determination coupled with investment resources of the country in general and educational institutions in particular. In addition, the market factor is also one of the pressures for the digital transformation in education to take place faster.

III. Types of open education in the current period of Vietnam

Returning to open education, this sector is almost unexplored due to the nature of open education which is voluntary and non-profit. When implementing open education, at first glance, educational institutions may not be suitable because the nature of educational institutions is to operate for profit. Therefore, although open education is mentioned in Resolution 29 twice, it is only stated in terms of orientation, but not the means, methods and organisations in charge of implementation.

Open education, by its very nature, is the right to access education without restrictions by geographical location, income, social status, ethnicity and religion. Teachers and learners are entitled to participate, share learning materials and exchange knowledge through open education without paying or paying only a small part of the cost directly related to the content. This is generally a barrier to open education due to intellectual property and the ability to earn additional income from content development.

Resolution 29 states that open education can integrate, expand and interconnect at the junction points

between traditional education levels through a mechanism of flexibly assessing and accepting different types of education and training, including short-term and vocational training as part of an exemption that an individual obtains after finishing in these types of training.

To put open education into practice to meet the needs of equal access to education, covering almost all subjects in society, open education is the most appropriate approach.

Thus, for open education to develop, we must be able to answer some of the following questions:

- Who should open education be for?
- How is the acceptability of open education determined?
- Should open education be offered as free or low-cost mass promotion?

First of all, open education should be for the higher education audiences who have reached a certain level of knowledge. Access to open education is easier than ever with the advent of online training or Massively Open Online Courses (MOOCs). The COVID-19 pandemic, despite being one of the worst epidemic disasters in human history, is an invisible push for digital transformation in all aspects of socio-economic life to happen faster. Teachers and learners are already

familiar with online learning. Whenever the learning community reach a sufficient size, a market will appear along with the competition of educational institutions. Regulatory agencies will also issue standards for accrediting online education to regulate the activities of the parties involved. However, in order for open education to have the true meaning that it can reach the largest number of learners, it is necessary to define open education that will include both degree education and self-directed education. Thus, the concept of open education for higher education can include the following types:

- Online degree and certificate programs.
- Online/MOOC courses in certain areas of study may be accepted for credit with universities.
- Online courses / MOOC to disseminate basic knowledge to the people.

IV. Analysing the relationship between open education and digital transformation from the case of hanoi open university.

To get an overview of the shift in open education from traditional education, in-service learning, distance learning and online learning, let's look at enrollment data for the past ten years at the Hanoi Open University.

Year	Formal	In-service training	Distance Learning	E-learning	Total
2014	2314	552	4688	546	8100
2015	2729	610	5606	1016	9961
2016	2520	427	3565	1593	8105
2017	2794	716	1979	1616	7105
2018	3333	887	867	2965	8052
2019	3455	518	1106	3294	8373

Year	Formal	In-service training	Distance Learning	E-learning	Total
2020	3970	932	1471	5982	12355
2021	4181	375	202	7367	12125
2022	3785	633	458	5120	9996
2023	4032	606	843	3573	9054
Total	33113	6256	20785	33072	93226
Average	36%	7%	22%	35%	100%

Table 1. Enrollment data in the period 2014-2023 at Hanoi Open University

Year	Formal YoY	In service YoY	Distance YoY	E-learning YoY
2015	18%	11%	20%	86%
2016	-8%	-30%	-36%	57%
2017	11%	68%	-44%	1%
2018	19%	24%	-56%	83%
2019	4%	-42%	28%	11%
2020	15%	80%	33%	82%
2021	5%	-60%	-86%	23%
2022	-9%	69%	127%	-31%
2023	7%	-4%	84%	-30%
Total Average	7%	13%	8%	31%

Table 2. Annual growth rate (year-on-year) of different education types

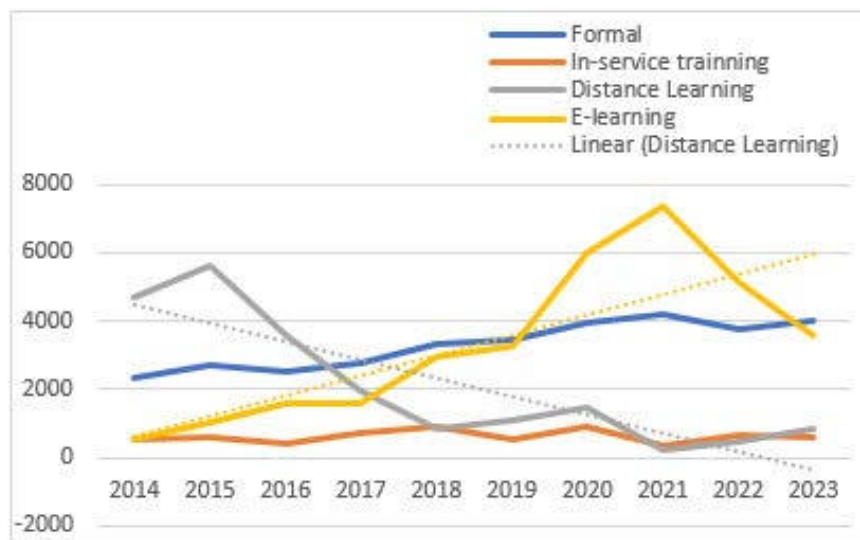


Figure 1. Trend lines of different education types (from 2014 - 2023)

From Figure 1 and Table 2, while the formal and in-service training enrollment has flat trend lines with average annual growth rates of 7% and 13%, respectively, the distance and open learning enrollment show two opposing trends. For online

education, the trend line shows an increase with an average annual growth rate of 31%, while the trend line for distance learning shows a downward trend with a yearly growth rate of 8%.

From Table 1, it can be seen that the university enrollment reached 36%, 7%, 22% and 35% respectively for formal, in-service learning, distance learning and online learning.

If ranked according to the openness level of the education types, online distance learning is the most open and flexible and tends to grow fastest. To achieve this, the university had to go through a process of building and developing a comprehensive system for E-learning. The system serves online training students and meets the learning demand from other education types during the peak period of the COVID-19 epidemic. It once again confirms the strong relationship between digital transformation and open education, the more open and the more enrolment.

Building such a complex online training system took Hanoi Open University 2 years, with investment from KOICA and a counterpart fund from the university. During and after the development process, the lecturers, course designers and technical staff developed and upgraded the system themselves to serve thousands of users simultaneously. It can be considered a completed digital transformation cycle from the early phase to the deployment phase. The entire process of managing, teaching, learning, testing, and evaluating the online training system is carried out entirely in the online environment. The rapidly increasing number of courses, educational contents and learners in the system is a solid confirmation of the success of digital transformation in this case.

V. Open education and digital citizenship

A strong community participating in the development, implementation and use of open education is the first step to building a learning society. Besides the building and developing appropriate education programs from educational institutions, efforts from individual learners also require a legal framework and policies to encourage development from the state management agencies. In terms of policy, the Party and State have issued a series of legal documents on digital transformation, specifically as follows:

- Resolution No. 52-NQ/TW dated September 27, 2019 of the Politburo on a set of guidelines and policies to actively participate in the Fourth Industrial Revolution;

- Decision No. 749/QD-TTg dated June 3, 2020, of the Prime Minister approving the “National Digital Transformation Program to 2025, with orientation to 2030”;

- Decision No. 942/QD-TTg dated June 15, 2021, of the Prime Minister approving the Strategy for E-Government Development towards Digital Government in 2021 - 2025, with a vision to 2030.

Based on the guidelines and policies of the Party and the State on digital transformation, the Ministry of Information and Communications has also issued Decision No. 922/QD-BTTTT approving the project “Determining a set of indicators for digital transformation of ministries, ministerial-level agencies, provinces and cities directly under the Central Government and of the country”.

Based on the guidance, each agency shall develop sets of digital transformation indexes to suit the specific conditions of each affiliated agency or unit.

One of the important indicators of digital social development is digital citizenship, with nine components, including digital access, ethical standards in the digital environment, digital rules and communication in the digital environment, online shopping, basic digital knowledge and skills, physical and psychological health in the digital environment, rights and responsibilities in the digital environment, safety in the digital environment (Mike R, Gerald B, 2011).

To become a digital citizen, each individual must continuously update skills and knowledge. For higher education, students will be equipped with a lot of knowledge related to digital citizenship, but self-study learners must learn knowledge by themselves. This is almost only possible with orientation and skills in searching, using and exploring information. Another reason is that there is a lot of noise false and malicious information on the Internet.

Nowadays, there are a lot of MOOC / online learning providers in Vietnam. However, learners have to pay tuition fees to attend these platforms. Furthermore, educational content only focuses on providing personal development skills, foreign languages, examination training, etc. Hence, the goal of equal education for all is only achieved if the education sector finds a way to provide mass and free education services to a larger community.

The effort can only be made with the involvement of the government.

Therefore, the author proposes a model of centralised MOOC infrastructure at the national level to equip the community with the necessary knowledge, especially towards developing digital citizenship training courses for the first phase.

VI. Deploying digital transformation in open education to serve digital citizenship training.

Defining digital transformation as not a destination but a process, open education is facing the opportunity to demonstrate its ability to provide knowledge to the masses. Among the three pillars of higher education, including teaching, research and community service, Vietnamese universities are increasingly approaching international teaching and scientific research standards. Double standards for teaching and community service can be achieved by providing free MOOC courses to spread knowledge and improve people's awareness of all segments of society.

To be able to take full advantage of online training/MOOC, higher education institutions need to implement a detailed roadmap from surveying, building programs, developing and assessing learning outcomes, linking data between educational institutions / vocational institutions, and analysing obtained data by A.I to optimise the teaching-learning process.

To do this, it is necessary to have close coordination mechanism between the Ministry of Education and Training, the Ministry of Labour, Invalids and

Social Affairs in analysing the national qualifications framework and guiding the implementation of the national qualifications framework. As a result, educational institutions can integrate some relevant modules of vocational education into higher education. An inter-connected data sharing mechanism and business processes related to subject exemption, credit transfer, and professional outcomes/training programs should also be coordinated and deployed between the two agencies mentioned above.

Telecommunications service providers construct and deploy infrastructure for national MOOC infrastructure. Professional associations can participate as appraisal organisations for content in their fields of activity. The Vietnam Association for Promoting Education plays the role of propagandising, promoting and guiding learning communities through channels from central to local.

Thus, digital citizenship training can only be effective if a digital transformation in open education is implemented in line with a clearly defined roadmap and the close coordination of stakeholders. Here is a proposal for implementing digital transformation in open education to serve the learning needs of the community:

- Identifying and developing a framework of national digital citizenship standards, on that basis, develop a framework and a roadmap for digital citizenship training on a nationwide scale.

- Digitising, linking business processes, sharing curriculum, learning outcomes, and professional outcomes

between the Ministry of Education and Training, the Ministry of Labor, Invalids and Social Affairs.

- Building a national MOOC learning platform.

- Each university registers, builds and contributes digital citizenship courses on the platform conforming with their respective strengths.

- Extending the platform to become a bank of MOOCs courses to serve the diverse learning needs of the community.

- Collecting data and using A.I to optimise the teaching-learning process.

VII. Conclusion

Vietnam currently ranks 55th in digital transformation out of 79 ranked countries and territories in the GCI 2020 Global Connectivity Index report. One of the prerequisites for successful digital transformation is the harmonious and equal development of all three pillars: digital government, digital economy and digital society. However, success can only come with digital citizens, who are affected and benefit simultaneously. To provide knowledge, help all citizens to communicate, carry out civil transactions, and actively participate in socio-economic activities in the digital environment. It is necessary to have agencies that organise the provision of information and services provide training content on digital citizenship. In this case, higher education institutions with high-quality knowledge staff, diverse learning materials, modern technology infrastructure and organisational experiences should build and contribute MOOC to the learning

community. Above all, the country needs to develop an appropriate legal and policy framework to develop digital citizenship training programs at the national level. Telecommunication service providers are responsible for the ICT infrastructure. With the participation of the entire political system, it will soon help each Vietnamese citizen become a digital citizen. Open education concentrates on digital citizens, which will boost the building process of a digital society to accelerate the national digital transformation.

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CHUYỂN ĐỔI SỐ TRONG GIÁO DỤC MỞ TRONG ĐÀO TẠO CÔNG DÂN SỐ

Đặng Hải Đăng[‡], Lại Minh Thu[§]

Tóm tắt: Chuyển đổi số có thể xem xét như một tiến trình phát triển bắt buộc đối với bất cứ tổ chức nào nhằm phục vụ nhu cầu ngày càng tăng trước áp lực của đổi mới, sáng tạo và hiệu quả, phù hợp với trải nghiệm khách hàng. Trong cuộc đua này, các tổ chức dù lớn hay nhỏ đều đang trong quá trình triển khai, đơn vị nào càng có sự chuẩn bị kỹ càng thì càng có lợi thế cạnh tranh. Dưới áp lực của môi trường đề cao văn hóa tạo ra các giá trị mới cho sản phẩm và dịch vụ, giáo dục, đặc biệt là giáo dục mở phải tăng cường chất lượng đào tạo để đáp ứng nhu cầu học tập suốt đời cho toàn thể xã hội. Bài báo này phân tích vai trò của chuyển đổi số trong nền giáo dục quốc dân, sự quan trọng của chuyển đổi số đối với giáo dục mở và mối quan hệ giữa giáo dục mở và công dân số. Trên cơ sở các phân tích đó, tác giả đề xuất triển khai chuyển đổi số trong giáo dục mở để phục vụ đào tạo công dân số.

Từ khóa: Giáo dục mở, xã hội học tập, học tập suốt đời, chuyển đổi số, đào tạo trực tuyến.

[‡] Trung tâm Đào tạo trực tuyến - Trường Đại học Mở Hà Nội

[§] Trường Đại học Lao động - Xã hội