Available online at www.worldscientificnews.com

World Scientific News

An International Scientific Journal

WSN 157 (2021) 129-139 EISSN 2392-2192

Solution University Training Flexible Adapting to the Context of Digital Transformation

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ABSTRACT

The emergence of the Industrial Revolution 4.0, the digital trend or the digital transformation is really taking place strongly in all fields. The "core" issue of Industrial Revolution 4.0 is digital transformation, with the integration of digitalization, intelligent data connection and processing. The digital economy not only creates high scale and growth rate for economies, but also helps maintain more sustainable growth. This is because the core technology applied to the digital economy will help to create better and more effective solutions for people through the rational use of resources, minimizing pollution problems. The digital economy is part of the economy. Digital economy development is the use of digital technology and intelligent data processing to create new business models, create digital products or services or assist in providing digital services to businesses, with the convergence of modern technology platform. Recognizing the digital transformation trend, most developed economies in the world have adopted a digital technology development strategy. In particular, countries focus on researching and applying new technologies to economic growth. Research by Oxford University and McKinsey Consulting (USA) has shown that 50% of jobs in developed countries will be replaced by automated processes in the next 15 years. This percentage is forecast to be even higher in developing countries like Vietnam. Up to now, more than half of the world's population is connected online, one third are on social media. The developed economies in the world all offer digital technology development strategies associated with economic growth. Therefore, universities need to train digital human resources to meet the development needs of the digital economy.

(Received 10 April 2021; Accepted 27 April 2021; Date of Publication 28 April 2021)

***Keywords*:** Digital transformation, digital economy, digital education, industrial revolution 4.0, digital enterprise

JEL classification: M510, M53, M13, M14

1. INTRODUCTION

The development of new information and communication technologies has created revolutionary changes in the economy. The production, distribution, service supply and consumption activities achieved unprecedented growth and development scale. This process has presented great opportunities for economies. Digital economy includes emerging phenomena, such as blockchain technology, digital platforms, social media, e-businesses (e.g. e-commerce, traditional industries such as or agriculture using digital assistants). Digital economy - a technology-based economy that will promise a new development future, even bigger than the real economy. In the new development context, we can only rely on digital economy and digital transformation to ensure a fast, sustainable development and catch up with regional countries. Therefore, the need to train and retrain human resources to meet the requirements of the digital transformation that the Government of Vietnam sets out to 2025, with a vision to 2030 becomes increasingly urgent. This is also the responsibility and mission of Vietnam's universities in the current period. It is necessary to develop digital universities to train digital human resources to meet the requirements of the digital transformation of the economy.

The development of the digital economy depends heavily on the training of human resources, especially highly qualified human resources. To provide highly qualified human resources for the digital economy, in many countries and territories around the world (USA, Canada, many European countries, Australia, Singapore, China, Hong Kong, Taiwan ...), universities have trained digital economics bachelors in many different training levels. Based on the foundation of many new technologies whose core is digital technology (artificial intelligence, deep machine learning, big data, blockchain, cloud computing, internet of things, ...), digital transformation creating a new space for development - digital economy, digital society, digital government. Digital transformation is opening up great opportunities for Vietnam in particular and countries in general to develop breakthroughs, creating a big turning point in the economy. Therefore, developing businesses that apply, transfer, research and develop, manufacture products, platforms, and solutions based on digital technologies need to promote innovation. These businesses play a crucial role in realizing the opportunities and potential that digital transformation brings. Therefore, the role of universities must be shown in the training of high quality human resources to meet the growing needs of the digital economy.

2. SURVEY RESULTS OF UNIVERSITY TRAINING OF DIGITAL ECONOMY

Digital economy not only creates scale and growth rate for economies, but also helps to grow more sustainably. At the same time, the digital economy creates opportunities for more people, all sectors and regions, thereby contributing to reducing the gap between rich and poor,

solving many social problems. Recognizing that trend, most educational institutions offer strategies for developing digital human resources.

Currently, in the world, universities have training short courses or graduate programs in digital economics and digital transformation for businesses: MIT (USA), Monash (Australia), King's College London (UK), University of Toulouse 1 (France), ... Especially, bachelor's training in the field of digital economy or digital business is also done by many schools such as:

- Latrobe University, RMIT University (Australia): training bachelor of digital business (Bachelor of Digital Business), study for 3 years.
- NORD University (Norway): training bachelor program in digital economics and management (Bachelor of Digital Economy and Organization) with a training period of 180 credits in 4 academic years.
- Bangkok University of Technology (Thailand): training bachelor program in information science in digital economy with a study period of 4 years.
- University of Brunei (Brunei Darussalam): training degree program in digital economics (BSc in Digital Economy) with 4 years of study, 2 semesters per year.
- International University Berlin (Germany) training bachelor program in management and digital business (Bachelor of Digital Business and Management), study for 4 years with 8 semesters. In Vietnam, there are many bachelor's degrees in economics, but digital economics is very few. Currently, there are a number of schools interested in training.
- First, National Economics University: training Bachelor of Digital Business (Digital Business) in English. The training program aims to provide high-quality human resources, knowledge of basic and modern knowledge of business administration, with background knowledge and skills in applying digital tools and approaches. management of business organizations. The training program of the National Economics University is designed with 139 credits with 8 semesters.
- Second, RMIT Vietnam University: offers a Bachelor of Digital Business to provide the knowledge and professional skills essential to adapting to the era of shifting around technological innovation. This training program equips knowledge of modern business, integrates strategic thinking in information technology, management, financial technology, digital revolution in business, design and innovation. The training program of RMIT University is divided into 288 credits with 24 subjects with 9 semesters.

In the context of the fourth industrial revolution, the most competitive advantage is the advantage of high-quality human resources. Therefore, building a strong innovation and human development strategy in education to equip knowledge, promote creative capacities and skills, and visions for learners in the digital age is an inevitable issue. concerned.

Therefore, opening a digital economy training is a necessary issue, meeting the requirements of society in terms of high quality human resources, digital human resources to participate and operate in the digital economy.

3. DETERMINE EDUCATIONAL GOALS AND DEVELOP THE LEARNING OUTCOMES OF THE TRAINING PROGRAM

The digital economy training program aims to train a workforce with political and ethical qualities, consciously serving the people, having good health, meeting the requirements of building and protecting the country.

Figure 1. Formation of the pillars of competency in learners

They must have basic and in-depth knowledge of Digital Economy. Students develop the ability to advise, analyze, design, build and implement socio-economic development strategies and solutions. After graduating, students will understand business processes and plan development strategies for digital businesses. Graduates of the digital economy training program will be fully equipped with the knowledge, skills and capabilities to participate in the digital economy.

Students are equipped with general education, core technical foundations and in-depth knowledge in the areas of digital business, enterprise digitalization, digital finance and digital business. Students develop lifelong learning abilities, problem-solving skills, and professional skills to perform well in social responsibility and professional ethics. Students are improved communication skills and skills in teamwork and organization. Students are developed the ability to conceptualize, design, construct, implement and operate strategies and solutions. Students who have good English proficiency can communicate and work with international partners.

Table 1. Program Outcome Standard

1. TECHNICAL KNOWLEDGE AND REASONING 1.1. KNOWLEDGE OF UNDERLYING SCIENCE 1.2. CORE ENGINEERING FUNDAMENTAL KNOWLEDGE 1.3. ADVANCED ENGINEERING FUNDAMENTAL KNOWLEDGE **2. PERSONAL AND PROFESSIONAL SKILLS AND ATTRIBUTES** 2.1. ENGINEERING REASONING AND PROBLEM SOLVING 2.2. EXPERIMENTATION AND KNOWLEDGE DISCOVERY 2.3. SYSTEM THINKING 2.4. PERSONAL SKILLS AND ATTITUDES 2.5. PROFESSIONAL SKILLS AND ATTITUDES	**3. INTERPERSONAL SKILLS: TEAMWORK AND COMMUNICATION** 3.1. MULTI-DISCIPLINARY TEAMWORK 3.2. COMMUNICATIONS 3.3. COMMUNICATIONS IN FOREIGN LANGUAGES **4 CONCEIVING, DESIGNING, IMPLEMENTING, AND OPERATING SYSTEMS IN THE ENTERPRISE AND SOCIETAL CONTEXT** 4.1. EXTERNAL AND SOCIETAL CONTEXT 4.2. ENTERPRISE AND BUSINESS CONTEXT 4.3. CONCEIVING AND ENGINEERING SYSTEMS 4.4. DESIGNING 4.5. IMPLEMENTING 4.6. OPERATING

Students studying Digital Economy after graduation can confidently work in the State sector and the private sector in positions such as:

- Expert in digital transformation planning and project planning, economic information security and confidentiality at ministries, sectors from central to local, banks, financial companies, and business and online business.
- Expert advice on digital transformation solutions for businesses and organizations in need.
- Expert in commercial management, online business system management, distribution channel management for manufacturing enterprises, economic groups, trading - service companies, ...
- Professionals or managers at businesses providing e-commerce solutions, digital-based business solutions.
- Webmaster specialist for organizations or businesses.
- Research and teach about Digital Economy, Digital Business at research institutes, universities and colleges.

4. THE DESIGN OF SEMINAR SUBJECTS OF THE SURROUND OF THE DIGITAL ECONOMICS TEACHING PROGRAM

Department of digital economy is a discipline that includes two parts of knowledge: digital knowledge and economic knowledge. Knowledge of digital technology is knowledge of information technology applied in the economic field. Economic knowledge is basic and in-depth knowledge of economics, business administration and e-commerce. In addition, there is also knowledge about digital economic ecosystems that act as a bridge between technology and economics such as: digital economy, digital economy ecosystem. Digital economics must equip learners with basic knowledge of big data, artificial intelligence, information technology and economic management in the digital age. Learners need to be trained with in-depth digital business knowledge and leadership skills for digital transformation for organizations or businesses. After graduating, a bachelor's degree in digital economics should be equipped with independent research thinking, self-study capacity to supplement knowledge, improve professional qualifications to adapt to the changing working environment. In particular, the training program should form learners to think sustainably on all three aspects: knowledge, skills and attitudes.

About knowledge: Learners need to master basic knowledge, the foundation of worldview and scientific methodology. Learners need to understand, analyze, evaluate and apply scientific knowledge of Marxism-Leninism in solving practical problems. Learners need to understand the State institutions, have a firm grasp of basic legal knowledge, especially the law on economics, investment and business. Learners need to master the methodology, apply math, statistics and economics tools to analyzing, solving economic problems, managing and managing business. They need to be competent to carry out research tasks. Learners need to understand the process and impacts of policies (especially economic policy), apply them to planning, implementing and evaluating policies. In particular, learners need to be knowledgeable about business and economic related operations in a globalized environment and technology platforms that support business activities in the context of the industrial revolution 4.0. They must have a good programming mindset and use the tools well to be able to design, operate, administer and advise on e-commerce websites. Learners need to be knowledgeable about digital business models, digital economic ecosystems to advise and implement digital transformation to optimize the operations of agencies, organizations and enterprises. Learners need to apply their knowledge of big data and data analysis to serve digital transformation as well as digital-based business activities.

In terms of skills, learners need to be equipped with two groups of basic skills related to careers and soft skills. Skills of proficient application of specialized knowledge in construction, organization, and consulting the implementation of business strategies and plans of enterprises and economic organizations in the digital age; Skills to synthesize, analyze, evaluate data and information, synthesize collective opinions and use new achievements in science and technology to solve emerging problems in the economic field. Learners need to meet the ability to work independently, teamwork, work organization and administration skills, and be qualified to become a manager or leader. In terms of autonomy and responsibility, after graduation, learners need to practice political qualities; good health; healthy lifestyle; have social responsibility; adhere to the rules and professional ethics. They must have the ability to lead the profession, the profession that has been trained, the ability to make professional conclusions at a basic level and some issues of expertise; self-study,

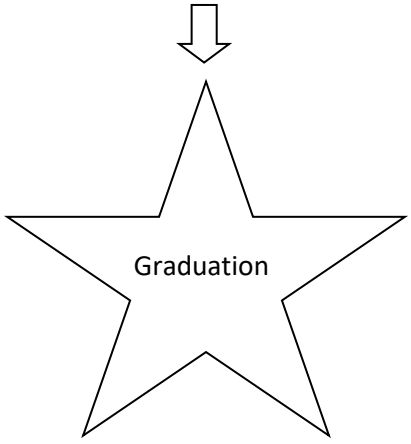
accumulate knowledge and experience to improve professional qualifications. Learners need to be ready to face risks, difficulties, persistence, confidence, optimism, creativity in work and life.

Table 2. Curriculum and content order knowledge map of the semester in the teaching program

Year 1			
Semmester 1 (15 ECTS)		Semmester 2 (17 ECTS)	
Module	ECTS	Module	ECTS
English 1	3	English 2	3
Philosophy	3	Political Economy	2
Basic law	2	Industry group basic subjects 1	3
Basic information	3	Industry group basic subjects 2	3
Soft skills	2	Industry group basic subjects 3	3
Corporate Culture	2	Industry group basic subjects 4	3

Year 2			
Semmester 1 (14 ECTS)		Semmester 2 (14 ECTS)	
Module	ECTS	Module	ECTS
English 3	3	English 4	3
Science socialism	2	Party History	2
Industry group basic subjects 5	3	Industry group basic subjects 8	3
Industry group basic subjects 6	3	Industry group basic subjects 9	3
Industry group basic subjects 7	3	Industry group basic subjects 10	3
Year 3			
Semmester 1 (14 ECTS)		Semmester 2 (16 ECTS)	
Module	ECTS	Module	ECTS
Ho Chi Minh Thought	2	Industry basic subjects 4	3

Method of scientific research	3	Industry basic subjects 5	3
Industry basic subjects 1	3	Subjects specialized 1	3
Industry basic subjects 2	3	Subjects specialized 2	3
Industry basic subjects 3	3	specialized internship subjects	4
Year 4			
Semmester 1 (15 ECTS)		Semmester 2 (15 ECTS)	
Module	ECTS	Module	ECTS
Subjects specialized 3	3	Subjects specialized 5	3
Subjects specialized 4	3	Graduation internship	5
Elective subjects 1	3	Graduation thesis	7
Elective subjects 2	3		
Elective subjects 3	3		



The training program in digital economics is guaranteed to be compared to the university program framework with a total of 120 credits. In addition to basic knowledge, general knowledge, knowledge of economics, it is necessary to focus on the following specialized knowledge:

- Mathematics: Economic statistics, processing statistics, econometrics.
- Digital economics, digital transformation, digital business models, digital media.
- Subjects related to e-commerce, international business.
- Information technology and data science subjects: database management systems, big data, data analysis, application programming.

5. CONCLUSIONS

With the continuous development of the 4.0 technology revolution, the Party and State of Vietnam have had specific and drastic undertakings and solutions to implement the transition to a digital economy. A series of resolutions and directives were issued during this period: Resolution No. 36- NQ / TW, dated 01-0702914, of the Politburo, session XI, on promoting the development of information technology, meeting the demand for sustainable development and international integration; Resolution No. 41- NQ-CP, dated May 26, 2016, of the Government on tax incentives to promote the development and application of information technology. Directive No. 6 / CT-TTg, 2017, of the Prime Minister on strengthening capacity to access Industrial Revolution 4.0. In September 2019, the Politburo continued to issue Resolution No. 52 - NQ / TW and set a target that by 2025, Vietnam's digital economy will reach 20% of GDP. Vietnam strives to develop the Vietnamese digital business community on an increasingly large scale. On June 3, 2020, the Prime Minister signed Decision No. 749 / QD-TTg approving the "National Digital Transformation Program to 2025, with a vision to 2030" with the goal that Vietnam will reach out to be among the top 50 countries in e-government, improving the competitiveness of the economy. Striving to 2025, the digital economy will make up 20% of the total GDP, the proportion of digital economy in each industry and field will reach at least 10%, by 2030, digital economy will make up 30% of GDP.

Proportion of digital economy in each industry or field reaches at least 20%. In early January 2021, the XIII Congress of the Communist Party of Vietnam unanimously approved the Resolution of the Congress, clearly affirming and promoting research, transfer and application of scientific and technological advances, innovation. The congress emphasized the achievements of the fourth technological revolution, implementing national digital transformation, developing the digital economy, improving productivity, quality, efficiency, and competitiveness of the economy. To implement this, the Prime Minister asked heads of agencies, organizations and enterprises to commit to innovating, applying new technologies, and promoting the development of creative industries. The Prime Minister also allows the acceptance of testing products, solutions, services and digital business models when legal regulations are not yet fully and clearly enacted.

The Government also requires relevant ministries and agencies to immediately study and propose specific policies and regulations on taxes and fees to submit to competent authorities for approval to encourage people and businesses to use and supply providing digital services. Therefore, every country that wants to make a breakthrough and thrive must arouse the spiritual strength of the nation, carry out the "revolution" and "transformation". The digital revolution, the industrial revolution 4.0 will change the future of humanity, nations will have the opportunity to break through and rise to reach the milestone of great growth and sustainable development goals.

The emergence and global "domination" of the industrial revolution 4.0 is posing to each organization and enterprise completely new challenges to survive, maintain, and develop. Just being slow in the race for digital transformation, each business can be quickly eliminated from the economy, making room for more flexible and responsive "individuals". In short, digital transformation brings many benefits to organizations and businesses such as reducing operating costs, reaching more customers, and leading faster and more accurate decisions. These things help increase the operational efficiency and competitiveness of organizations and businesses. Therefore, the need to train and train human resources to meet the requirements of the digital

economy in the era of Industry 4.0 has become increasingly urgent. This is also the lofty responsibility and mission of universities.

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