

Higher Education in the Fourth Industrial Revolution Age

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Received April 29, 2020; Revised June 16, 2020; Accepted June 19, 2020

Abstract The fourth industrial revolution has made an important step in the history of human development and for higher education today under the context that the impact of the industrial revolution 4.0 has been preparing for great opportunities and challenges. Within range of this article, the author focuses on researching important impacts of the fourth industrial revolution in coming time: training activities of higher education institutions; curriculum content, teaching methods; start-up issues in training institutions; learning environment, methods, materials, equipment, demand and process of learners have many changes. On that basis, the author analyzes some orientations for the higher education development in Vietnam today in the context of the fourth industrial revolution.

Keywords: *the fourth industrial revolution, impact of the industrial revolution 4.0, higher education, orientation, Vietnam*

Cite This Article: Nguyen Thi Quyet, "Higher Education in the Fourth Industrial Revolution Age." *American Journal of Educational Research*, vol. 8, no. 6 (2020): 420-426. doi: 10.12691/education-8-6-9.

1. Introduction

On the consideration of the revolution 4.0 and its impact on the education, the articles: "Strengths and Weaknesses of Education 4.0 in the Higher Education Institution" [1], "Industrial Revolution 4.0 and Education" [2], "Innovations in Teaching and Learning: Exploring the Perceptions of the Education Sector on the 4th Industrial Revolution (4IR)" [3], "Digital Revolution of Education 4.0" [4] delve into the important impacts of the industrial revolution 4.0 on education and pose requirements for formation of an innovative education system. Of which, the article "Strengths and Weaknesses of Education 4.0 in the Higher Education Institution" [1] discusses the strengths and weaknesses of education 4.0 in the Malaysian education, thereby, providing in-depth view into higher education in Malaysia to propose strategies for purposes of maximizing the strengths and overcoming weaknesses of education 4.0 and improving current quality education in Malaysia, as well.

The article "Industrial Revolution 4.0 and Education" [2] discuss changes of education system in the era of industrial revolution 4.0. The fourth industrial revolution has posed requirements for educational renewal to create a new education model for the future - Education 4.0. In order graduates to prepare for future life and have appropriate jobs in an era of the fourth industrial revolution - Education 4.0 needs to focus on developing capacity and skill systems for lifelong learning, adapting to the constant changes of the fourth industrial revolution globally. Therefore, lecturers need to have new changes in

teaching methods to equip learners with learning methods that adapt to requirements of the fourth industrial revolution.

The article "Innovations in Teaching and Learning: Exploring the Perceptions of the Education Sector on the 4th Industrial Revolution (4IR)" [3] points out the advantages of education in the context of the fourth industrial revolution, as well as development opportunities for education when taking advantage of achievements from the fourth industrial revolution to improve capacity and skills of learners. However, Africa has not yet exploited advantages and potentials of the industrial revolution 4.0 in education development and innovation. The authors analyzed and proposed a number of solutions to renovate programs and invest in education in order to exploit full advantages of the fourth industrial revolution.

The article "Digital Revolution of Education 4.0" [4] discuss the development and requirements of education system in the context of industrial revolution 4.0. The fourth industrial revolution has an important impact on employment opportunities of the graduates because the employees can be replaced by intelligent robots. The article indicates that education in the 4.0 industrial revolution is to form creative education 4.0 towards the formation of creative capabilities, skills for learners that computers and robots cannot replace. Education in the fourth industrial revolution focuses on developing skills and creative capacities towards personalization, establishing classrooms in an intelligent environment with real and virtual elements, etc. Lecturers need to actively innovate teaching methods, use modern teaching methods to meet the requirements of education in the fourth industrial revolution.

Research on higher education in the context of the 4.0 industrial revolution made by Penprase B.E. in the works "The Fourth Industrial Revolution and Higher Education" [5] provides evaluations on previous industrial revolutions that had impact on higher education in the United States and around the world. In addition, it gives analysis and evaluation based on impacts of the fourth industrial revolution in society, requiring higher education innovation, moral capacity development and cultural and artistic skill equipment to improve the adaptive capacity of learners in the context of the fourth industrial revolution. Therefore, the author supposes that: it is necessary to quickly adjust the curriculum, meet the requirements of knowledge, teachers should be active to innovate teaching methods in line with requirements of education 4.0.

In Vietnam, the in-depth impact of the fourth industrial revolution on all aspects of social life, especially education in general and higher education in particular is the reason why many scientists are interested in researching the impact of the fourth industrial revolution on education and higher education. The articles "Vietnam education in the context of industrial revolution 4.0" [6], "Development of core capacity framework for human resources in the context of industrial revolution 4.0" [7] discuss the impact of fourth industrial revolution on education, analyze and clarify the issues of Vietnam education, necessary demands for Vietnam education to adapt to demand for training human resources, thereby, meeting the requirements of enterprises and global economy 4.0, etc. On that basis, the author and group of other authors propose some basic solutions to help Vietnam education integrate into the industrial revolution 4.0, establish a core capacity framework of human resources to meet the requirements of industrial revolution 4.0 for training and fostering institutions, research institutes and other main organization in Vietnam today.

On consideration of higher and college education in the context of the fourth industrial revolution, the articles: "Industrial Revolution 4.0 and requirements on training in colleges today" [8]; "Industrial Revolution 4.0 - Practice and challenges for universities and young lecturers" [9], "Basic and comprehensive renovation of Vietnam higher education to meet the requirements of industrial revolution 4.0" [10], "The fourth industrial revolution and its impact on teaching methods at University today" [11], the author and group of other authors make in-depth researches, and analyze the impacts, opportunities as well as challenges of the Industrial Revolution 4.0 for higher education, point out some orientations for renewing program content and teaching methods, developing university lecturers and requirements for managers with an effective management mechanism in renewing content and teaching methods at higher training and education institutions.

On the consideration of impact of the fourth industrial revolution on the organization, management of higher education in Vietnam today, the author named Huynh Van Thai and M. A Le Thi Kim Anh with the article "The 4.0 industrial revolution higher education organizations' operation in Vietnam" [12] researches the impacts of industrial revolution 4.0 on organization of higher education activities in Vietnam today. On that basis, analyzing the important impacts of the fourth industrial revolution on human resources, production and business

process helps policy makers apply to improve higher education management policies in Vietnam today.

In this article, the author delves into the important impacts of the forthcoming fourth industrial revolution: firstly, training activities of higher education institutions; curriculum content, teaching methods; start-up issues in training institutions; Secondly, the impact on learning environment, methods, materials, equipment, demand and process of learners has changed much. Based on that, the author analyzes some orientations for the Vietnam higher education development today in the context of the fourth industrial revolution.

2. Content

2.1. Some Features about the Fourth Industrial Revolution

In the last decades of the twentieth century, in developed countries, many modern scientific and technological achievements such as information technology, universe, nuclear, nano, biology, genetic technology, genes... widely applied in the production process and life has made the economy and some other fields of many countries be developing extraordinarily.

In 2011, at the Hanover Technology Fair of the Federal Republic of Germany, the term "fourth industrial revolution - referred to as industry 4.0" was first used. In 2012, this concept was used to name a German high-tech development assistance program. In 2016, the World Economic Forum in Davos, Switzerland organized a Seminar on the topic "Mastering the Fourth Industrial Revolution". Up to now, the term "the fourth industrial revolution" has been widely used and it can be said that the world is entering a new revolution - "the fourth industrial revolution".

Previously, human history recorded that three industrial revolutions had occurred. Each revolution had its own characteristics, created by the breakthroughs of science and technology, which greatly changed the production and socio-economic conditions of the world. First, it must be mentioned that the first industrial revolution took place in the second half of the eighteenth century and near the first half of the nineteenth century, with the introduction of the steam engine that brought manual production to mechanical production. Next, the second industrial revolution took place in the second half of the nineteenth century to the early twentieth century, with the introduction of a series of machines run by electric power. By the 70s of the twentieth century, the automatic production based on computers, electronic devices and the internet was born that led the world into a third industrial revolution. So, what is the nature of the fourth industrial revolution?

The nature of the fourth industrial revolution "is a smart production method based on artificial intelligence and digital technology" [13], p.123] to optimize production processes and methods; emphasizing technologies that are and will have the greatest impact in the areas of information technology, biotechnology, nano-technology, etc. This is also called digital revolution.

The fourth industrial revolution is not associated with the birth of a specific technology but is a convergence

result of many different technologies. The core of the fourth industrial revolution is the breakthrough of digital technology.

Digital technology is a technology of digital resources, beginning in the middle of the last century, which has been changing many fields. There are two aspects of digital technology, one is digitalization and the other is the administration and processing of digitized data. Going through waves of digital technology, recent breakthroughs such as cloud computing, smart mobile devices, artificial intelligence, big data... are facilitating the smart manufacturing process taking place more and more widely with the machine system of automatically connecting, self-organizing and self-managing. As a result, the interaction process takes place more quickly, conveniently and accurately, allowing human to control everything from a distance, without limitation in space and time.

The fourth industrial revolution has been and will lead to the production process with machines, equipment, production lines, and intelligent management systems; create the smart industry, agriculture and trade - service. This is an important driving force to promote the country's socio-economic growth and development.

With these achievements and breakthroughs, the fourth industrial revolution is forecasted by many researchers to grow at a faster rate than the previous industrial revolutions, and strongly impact on the socio-economic situation, leading to changing the production methods and forces of society.

The fourth industrial revolution will create many opportunities for countries (especially developing countries), fields, including education - training...if they know how to make use of new scientific and technological achievements to renew production, management and training processes. Besides, this revolution also created great challenges. That is the difference in development level, gap between rich and poor countries; the lagging in the level of human resources; unemployment risk is higher for unskilled workers; many complex socio-political issues arise and are hidden.

Facing the emergence and transformation of the fourth industrial revolution, require countries, fields and professions to be rightly aware of the opportunities and challenges that the revolution brought. Since then, there are optimal development strategies and plans to enlist all advantages. To do this well, it is indispensable for high quality human resources. This is an important condition for the fast, sustainable development, and higher education is the place to carry out the training of such quality human resources.

2.2. The Impact of the Fourth Industrial Revolution on Higher Education in the Current Period

According to the Ministry of Education and Training, in 2018, Vietnam has 235 higher education institutions (Data does not include universities and institutes of security and defense) [14]. Over the past years, under the direction of the education sector, the higher education institutions have actively innovated the training content, programs, teaching methods towards capacity approach, enhanced application skills and practice; attached the training to the labor

market, actively grasp the needs of enterprises or develop training programs with the participation of enterprises. Scientific research work of universities and institutes has also achieved many positive results. Therefore, in 2018, Vietnam has 05 units presenting in the list of top 400 best universities in Asia, namely: Vietnam National University, Hanoi (ranked 139), Ho Chi Minh City National University (ranked 142), Hanoi University Of Science And Technology (ranked 291-300), Can Tho University (ranked 301-350), Hue University (ranked 351-400). From this actual situation, a question arises: In Vietnam, there are many universities and institutes but the quality of teaching and training is really good, isn't it?

The reality shows that Vietnamese higher education now has many achievements and positive changes but still has limitations, weaknesses and many problems need to be solved. Many higher education institutions have not high quality of training, especially post-graduate training, joint training, and inter-college training. The training program is still heavy on theory, be light on practice, lack of practicality, has not yet created the unity of linking educational goals with the goal of finding jobs for learners; has not yet created a link between domestic and international higher education standards; the program is still heavy in large quantities. The role of higher education is not really clear and improved when setting the goal of higher education is to train talents, and mainly equip learners with basic knowledge. The connection between universities and enterprises in training, scientific research and technology transfer activities is still weak...Therefore, the number of students graduating from universities is unemployed highly: In 2018, about 200,000 university-level workers in the working age group have no job [15] or the working process does not meet the social needs. Activities of scientific research, technology transfer and community service are limited by the number of works, articles, and inventions that are not commensurate with the potential...

With this situation, in the era of the fourth industrial revolution, how will Vietnamese higher education be affected?

First of all, the fourth industrial revolution affects the training activities of higher education institutions: The fourth industrial revolution created a smart society - economy. In all fields, artificial intelligence, robots, internet, nanotechnology, biotechnology... will still have a strong impact on social life. Therefore, the training activities of higher education institutions such as training programs, teaching methods, student management, testing methods, the output standard assessing...have changed, it must be associated with the applications of science and technology and meet the requirements of the fourth industrial revolution. This is a challenge for Vietnamese higher education in the current period, because, in many higher education institutions, the use of modern machines, equipment and software for training, managing, teaching and learning have not been popular yet. Limited funding, lack of high quality human resources are some reasons why scientific - technological applications have not been applied much in universities and institutes.

Secondly, the fourth industrial revolution affects the content and training programs: With the rapid change of technology, the appearance of robots with artificial

intelligence with features that can replace people, even be more optimal. Demand in some professions such as information technology, biotechnology, automation, mechatronics, informatics applications, data processing ... will have an expansion in the training knowledge as well as specialized skills. Now, the demand for skilled labor resources with creative thinking, carrying out complex tasks, mastering machinery as well as the need for additional knowledge to meet the requirements of the fourth revolution increases. For that, workers must be trained in a learning environment with new knowledge and skills, equipped with self-study methods, lifelong learning sense, creativity, adapting to new challenges and requirements that traditional education methods cannot meet. In other words, the fourth industrial revolution requires higher education institutions to innovate comprehensively, to move from an education "teaching what the academia are available", be heavy on equipping knowledge for learners into an education that comprehensively develops the qualities and capabilities of learners, "teaches what the market and businesses need", or even beyond that "teach what the market and businesses are going to need" to meet the requirements set for workers in the new era. This is a big challenge, especially in the context of Vietnam's higher education has revealed lots of limitations. However, the need for retraining and supplementing knowledge for workers to meet the requirements of the fourth revolution will open out a large training market for higher education institutions.

Thirdly, it is easier to give the business start-up knowledge in training activities at higher education institutions: One feature of the fourth industrial revolution is the foundation of a number of core technologies combined with highly globalized and universal technology infrastructure, which are good conditions for startups. Starting a business can be deployed with anyone, anytime, anywhere, in every field. This is an opportunity to bring entrepreneurial spirit into training activities at higher education institutions. However, how to introduce startup into the professions, training programs, and output standards along with the skills that meet the requirements of the fourth industrial revolution will be a challenge with many higher education institutions now.

Fourthly, teachers' organizing and teaching methods will change: The development of information technology, digital tools, networking systems and metadata will be good tools, means for teachers to change the organizing and teaching methods. Through the school's management software, information of schools, students and lecturers will be digitized at a storage location and provide data systems to help teachers grasp the activities of school and colleagues, monitor happenings and promptly solve problems arising in the learning process of students. In addition, with the explosion of science and technology, many new teaching and learning methods are easily applied. This is a good condition for teachers to innovate teaching methods. But this also requires teachers to constantly innovate, create and how to make use of, master technology, and how this tool supports and creates freedom and creativity in education is also a challenge for each lecturer and higher education institution.

Fifthly, the learning environment, methods, materials and equipment of learners have changed: In the fourth

industrial revolution, documents, means, teaching and learning equipment, and lessons will not only be traditional textbooks, books or references but also will have a lot on the information channels like Facebook, YouTube, google....Learners will now easily find the information they need with just a smartphone or tablet. Moreover, the learning space will also be more diverse, instead of going to class, in the traditional labs or simulation rooms, learners can experience learning through virtual classes, studying online through softwares and network system. This will be the development trend in university training activities in the coming time. At that time, knowledge will not be restricted and exclusive by anyone, any organization, learning will not only confined on lecture halls. Therefore, learners have the opportunity to study anytime, anywhere and the process of approaching and accumulating knowledge also takes place more quickly. This is convenient for building a learning society with the need for lifelong learning, meeting the requirements of people in the 4.0 era. From this fact, if higher education institutions do not change the training model, they will be outdated and have few learners.

Sixthly, the needs and learning pathway of learners will change: Each student and learner have different learning needs and abilities. Technological advances in the fourth industrial revolution will create modern educational software, allowing learners to follow the programs and pathways that suit their own needs. In many countries around the world, this adaptive learning software has quickly replaced the textbook's role partially or fully. In Vietnam, this software is also being applied in some areas, including educating - training. This is both a favorable condition and a challenge for higher education.

2.3. Some Orientations for Vietnamese Higher Education in the Fourth Industrial Revolution

Facing with the explosion of the fourth industrial revolution, the Communist Party of Vietnam confirmed: "Continue to innovate strongly and synchronously the basic elements of educating and training in the direction of attaching importance to developing the qualities and capabilities of learners. Renovating educational programs and contents in the direction of streamlining, being modern and practical, suitable to ages, qualifications and professions. Diversify learning contents and materials to meet the requirements of all educating and training programs and the need for lifelong learning" [16], p.115] This shows that the Communist Party of Vietnam has been aware of the role and impact of the fourth industrial revolution on the field of educating and training, on that basis, there are basic orientations for Vietnam education in general and higher education in particular, meeting the requirements of this revolution. However, in order to have a 4.0 education, the education sector as well as the higher education institutions must have accurate and appropriate directions and solutions. We present some following orientations for Vietnamese higher education in the fourth industrial revolution.

- For the school:

Recognize accurately the role and impact of the fourth industrial revolution on higher education: The fourth

industrial revolution that is happening at a rapid pace will lead to a smart, modern production and society and create profound changes in all areas, including educating - training. Therefore, higher education in general, schools, education management teams, lecturers and students in particular need to be deeply aware of the role and impact of the fourth industrial revolution on higher education. Since then, being determined to grasp every opportunity and advantage that this revolution brings, while minimizing its negative impacts.

Develop a educational strategy and philosophy towards a sustainable education: According to Vietnam Education Law 2019, the goal of higher education is training high-level human resources, improving intellectual standards, fostering talents; studying science and technology to create knowledge, new products to serve socio-economic development needs, to ensure national defense and security and international integration. Training learners to develop comprehensively about virtue, mind, body and beauty; have knowledge, skills and professional responsibilities; be capable of grasping scientific and technological progress commensurating with the level of training, the self-study ability, creativity, adapt to the working environment; have a spirit of entrepreneurship, consciously serving the People. Therefore, with the development and impact of the fourth industrial revolution, higher education institutions must have appropriate strategies in developing training programs; towards the dissemination, application and realization of scientific knowledge; scientific and technological development; investment in facilities; standardize the education management team and lecturers to train human resources meeting the requirements of the digital era. At the same time, must choose and attract outstanding students, apply advanced programs of the world to teaching to achieve high efficiency.

Renew the training program: To meet the requirements of industrialization and modernization in the context of socialist-oriented market economy and international integration with the rapid development of science and technology, the Communist Party of Vietnam and the Vietnamese State identified: Strongly transform the educational process from mainly equipped with knowledge to comprehensive development of learner capacity and qualities [17], Strengthen education of basic skills, knowledge, creative thinking, the ability to adapt to the requirements of the 4th industrial revolution [18]. Therefore, higher education institutions need to step by step build flexible training programs, more up-to-date knowledge, aiming to develop skills being suitable to the fourth industrial revolution to ensure providing basic knowledge for learners, besides, must equip with soft skills, forming for learners the ability to think, to be creative, to have the skills of analyzing and synthesizing information, being able to work independently after graduation and a sense of lifelong learning; creating a link between levels in a profession and among professions. Especially, it is necessary to study and supplement knowledge and skills in training majors such as information technology, artificial intelligence and foreign languages to meet the human resource needs in the digital era. Furthermore, it is necessary to innovate the form and

method of examination and test towards meeting the working capacity and creativity of learners.

Innovate the training model: With the demand for labor resources and the diverse, lifelong learning needs of learners in the fourth revolutionary era, higher education institutions are not only framed in the walls of lecture halls and classrooms or a laboratory but also must create a smart educational model developing in the spirit of enlightenment and the ideal of academic freedom; links between factors: school - managers - entrepreneurs with the labor market to become an educational ecosystem. With this model, the higher education institutions will have to transform from the model of "transmitting knowledge", "teaching what the academia has" to a model of training forming qualities and developing learner capacity, "teaching what the market needs"; promote the development of training at enterprises, develop schools in enterprises, aiming to see enterprises as truly "extended arms" in the university's training activities in order to effectively use equipment and the enterprise's technology for training. Besides, higher education institutions must ensure that all people with learning needs can access appropriate higher education services through different training forms and pathways (training online, virtual classroom ...).

Strengthen the application of science and technology in educating-training activities: With the rapid development of science and technology, to form a 4.0 education, higher education institutions need to apply modern technology strongly in the managing, teaching and learning activities by investment in equipment, management information systems, online training systems, virtual equipment systems, need to construct electronic libraries, multimedia classrooms, specialized rooms, ... in order that the management, teaching - learning will take place quickly, easily and more effectively.

Build the lecturer and management team with a high level of speciality, profession: In order to train human resources to meet the requirements of the fourth industrial revolution, the management and lecturers team must have extensive professional knowledge, especially issues relating the fourth industrial revolution; know how to apply modern technology in managing and teaching; be able to adapt to changes in training programs, models and learners' needs. In addition, the management team and lecturer team need to have a quality of political ethics, profession, and be an example for learners to follow. Therefore, the schools need to organize political learning classes; create conditions for management and lecturers team to attend class in training, fostering, training speciality, profession nationally and internationally; access to the practical production and business conditions at enterprises to enhance practical knowledge and working skills; there is a special remuneration policy for a team of foreign language proficiency and be knowledgeable about high technology application in managing and teaching activities. At the same time, there is a screening mechanism to improve the quality of staff and working efficiency.

Promote scientific research and technology transfer activities: Higher education institutions need to show their pioneering role in implementing the mission of scientific

and technological research and transfer; is a platform to promote creativity. In order to carry out that mission, it is necessary to promote scientific research activities and apply such research results in teaching - learning activities and managing training at the facility. Focus on simulation studies, research on human-machine interaction. Strengthen academic exchange, sharing experiences, forming a scientific research network among domestic and foreign higher education institutions.

Enhance international cooperation in educating - training activities: In the global context and the fourth industrial revolution, higher education institutions need to strengthen international cooperation, especially with prestigious training institutions in the region and in the world in fields such as: Scientific research, academic exchange; training and fostering of teachers and managers; school administration... to approach the teaching and learning methods, management methods, the advanced, modern educational scientific achievements of the world, thereby improving Vietnamese higher education's efficiency.

- For the management team and lecturers:

Clearly define the position, role and duties of yourself with the education and training career in the fourth industrial revolution: According to the Vietnamese Education Law, teachers play a decisive role in ensuring the quality of education and have the task of teaching according to the objectives, training programs and fully, qualitatively implementing the training program; do research and develop scientific application and technology transfer, the training quality assurance; continuously learn and foster to improve the level of political theory, speciality and profession and teaching methods, preserve the quality, reputation and honor of lecturers; respect learners' personality, fair treatment with learners, protect legitimate rights and benefits of learners; education managers play an important role in organizing, managing and administering educational activities and have the duty to constantly study, practice, improve moral qualities, professional qualifications, management capacity and personal responsibility. On the basis of that role and task, in the era of the fourth industrial revolution, teachers shifted from the role, task of transmitting knowledge to inspiring, stimulating thinking capacity and learning passion and discovering new things of learners; create a learning environment for learners to have the opportunity to study in a positive and creative way; must be creative, critical, independent thinking, active cooperation capacity and effective support for learners what they want to know; be who provides new understandings way for learners; guide learners to orient their own learning process. In addition, in the information society, lecturers must also help learners to adjust the orientation of quality and meaning of information resources. Therefore, to fulfill the mission of "planting people", training the workforce to meet the requirements of the fourth industrial revolution, the management and lecturer team need to be aware of the position, role, your own task for the education and training career in the new era.

Continuously improve the politics, speciality and profession level and effectively use the scientific and technological applications in managing and teaching activities: In order to meet the training requirements in a new environment, the management and lecturer team must

have new capabilities and qualities. Therefore, it is necessary to actively and effectively participate in courses of training, fostering the level of political theory, speciality and profession. At the same time, it must cultivate knowledge, form a wide and deep knowledge foundation, not only meet the professional field they are responsible for, but also be able to answer to learners who have different professional knowledge; actively research, use and master the technology in managing and teaching. Currently, most scientific and technological achievements are conveyed in English. Therefore, in order to absorb the world's intellectual quintessence, university management and lecturer team must be fluent in foreign languages, especially English. In addition, it is necessary to strengthen scientific research activity and application of such research results in managing and teaching.

- For the students:

Be proactive and positive in learning: In order to survive, develop as well as meet the requirements of employers in the fourth industrial revolution, when being in the university, students must determine the purpose, motivation of learning, not only simply learn to take the exam, to get the knowledge, but also learn to have a deep background of knowledge and skills to be able to adapt to every job, every circumstance and moreover learning to be human ". On that basis, develop an appropriate study plan; actively and positively acquiring knowledge, especially knowledge of information technology and know how to apply scientific and technological achievements to life. In the process of learning, it is necessary to actively exchange and discuss with lecturers and friends about issues relating to the profession; forming self-study spirit, self-researching, solving situations, having a critical mind and a lifelong sense of learning.

Cultivate and develop skills: In addition to receiving professional knowledge, in the process of learning, training students must also cultivate the necessary skills to adapt to the needs of society. Studies have shown that soft skills (communication, teamwork, partner selection, presentation skills, time management ...) decided 75% of human success, and hard skills (knowledge, qualification) only accounted for 25%. The key to success is to know how to combine both skills in a skillful way. Therefore, in the process of studying at the school, students should actively participate in extracurricular programs, social activities, and union movements...to accumulate knowledge, experience and practice soft skills.

Strengthen foreign language learning: In the context of integration and the fourth industrial revolution, apart from professional knowledge and information technology level, foreign language is also a very important condition for employees. Therefore, it is necessary to strengthen the study of foreign languages, especially English. However, it is necessary to determine that learning a foreign language is not only knowing the vocabulary but also learning the culture of the country in order to have a proper expression. This will help us access foreign news and documents; communicate with international friends, learn the culture of the countries in the world, absorb human knowledge, thereby helping the working process be more convenient and efficient.

Accumulate experience through practical activities (extra work, internship): Experience is also a requirement

that many employers require their employees to obtain before starting work. Therefore, right in the course, students should enlist all the conditions and opportunities to get the necessary experience for the future job. Internship is the best time for learners to learn experience in the area of their interest. Additionally, a part-time job that is suitable for their major or interest will help learners learn many things. Experience with extensive professional knowledge, good foreign language, flexible soft skills will help you make a good impression on employers.

3. Conclusion

Significant impacts of the fourth industrial revolution have been posing urgent requirements for fundamental and comprehensive innovation of the current Vietnam higher education in order to meet requirements of human resources quality for the global digital economy. On the basis of analyzing impacts of Industrial Revolution 4.0 to Vietnam higher education today, the article gives some basic orientations for the development of higher education in Vietnam today, namely: *For higher education institutions in Vietnam*, they need to be aware of role and impact of the fourth industrial revolution on higher education; make education strategy and philosophy towards a sustainable education; renew training programs; innovate training models; enhance the application of science and technology in education - training activities; organize a team of managers and lecturers with high professional qualifications; promote scientific research and technology transfer activities; strengthen international cooperation in education - training activities. *For team of managers and lecturers*, it is necessary to clearly clarify their positions, roles and tasks in the field of education and training in the fourth industrial revolution; continuously improve the political and professional qualifications and effectively use technology applications in management and teaching activities. Besides, students need to be proactive and positive in learning; improve and develop skills; strengthening foreign language skills; accumulate experience through practical activities.

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