
**REQUIREMENTS FOR UNIVERSITY OF TECHNOLOGY UNIVERSITY 4.0
CERTIFIED IN VIETNAM**

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ABSTRACT

The fourth Industrial Revolution (also known as the 4.0 Revolution) is expected to cause a series of job losses - particularly in developing countries. However, the number of new jobs , the new profession is created more than the lost number. Revolution 4.0 will bring new opportunities and the workforce needs to change to adapt to the changes of early-stage science and technology, profoundly affecting all sectors. The problem of urgency for education (especially university education) is the necessary preparation for the learner to enter life confidently. Knowledge communicators need to equip themselves in terms of professional skills, foreign languages, informatics and basic skills in response to the industrial revolution of 4.0, giving society not only knowledge but also knowledge. The skills that are needed for the present and the future. In this general context, the author has boldly put forward his research problem of "The demand for university lecturers to meet the current 4.0 Revolution in Vietnam" in order to contribute to the approach and Get to know more about revolution 4.0.

Key Words: Revolution 4.0; Lecturer, University, Vietnam

INTRODUCTION

In order to train human resources to adapt to the new era, schools must change their thinking about education, innovate models, programs and training methods towards industrial revolution 4.0. The goal is no longer to train graduates who have jobs, but to train global citizens who are innovative and creative in their ability to acquire advanced technology. Revolutionary era. Reform must begin with the head of the university, they must be thought-changeers, ready to take on the challenge of development, ready to apply science and technology achievements. Teaching. The reality is that in schools, the training is not attached to reality, teaching theory is the main reason, so when graduating to work in companies, students are very vague in the use of equipment, Software technology, often the business must re-training from scratch. First, in order for education to be well-served, schools need to focus on building high-quality teachers, attracting industry-leading researchers in teaching and research. Besides, the schools must renovate the financial mechanism, management mechanism training, scientific research to retain talents; Assure life for scientists so that they focus on research and teaching. Next, schools need to invest in facilities, research labs, modern laboratories in automation, digital, information technology, energy and new materials, biotechnology. to create a working environment for professionals and students. In the field of research, the authors delve deeper into one of the determinants of higher education reform: the quality of university lecturers, the specific requirements of university lecturers to meet the industrial revolution 4.0 in Vietnam today.

1. Impact of the 4.0 revolution on Vietnamese higher education

1.1. Revolution 4.0

The concept of "industrial 4.0" was launched in 2011 at the Hanover Fair, introducing the plans of the German industrial program 4.0, to enhance the traditional mechanical engineering industry in Germany. Not only Germany with the 4.0 Industry Program, developed countries in the past few years have had strategic programs on production as advances in science and technology are taking place very quickly.

In 2013, a new keyword "Industry 4.0" (Industrie 4.0) began to emerge from a German government report that mentions this phrase in terms of high technology, production without human participation. At present, Industry 4.0 has gone beyond the German project framework with the participation of many countries and became an important part of the fourth industrial revolution.

The 4th Industrial Revolution - Industry 4.0 On 20/01/2016, the 46th World Economic Forum (WEF) officially opened in the Swiss city of Davos-Klosters, with owners The "Fourth Industrial Revolution" attracted the attendance of 40 heads of state and more than 2,500 guests from more than 100 countries. The Fourth Industrial Revolution, a term that encompasses a wide range of modern automation technologies, data exchange and fabrication. The 4th Industrial Revolution is defined as "a cluster of terms for the concepts and technologies of an organization in the value chain" that goes with physical systems in cyberspace, the Internet connects everything. (IoT) and the Internet of Services (IoS)¹.

Based on the digital technology platform and integrate all the smart technologies to optimize the production process; Emphasizing the technologies that are and will have the greatest impact is 3D printing technology, biotechnology, new materials technology, automation technology, robots.

Industrial revolution 4.0 is the current trend of automation and data exchange in manufacturing technology. It includes physical networking, Internet connectivity and cloud computing. Industry 4.0 facilitates the creation of "smart factories" or "digital factories." In these intelligent plants, virtual space physics systems will monitor the physical processes, creating a virtual copy of the physical world. With IoT, these virtual physics systems interact with each other and with people in real time and through IoS the user will be involved in the value chain through the use of services.

1.2. Impact of the 4.0 revolution on higher education in Vietnam

Education 4.0 is a smart education model, which is a link between school-managers and entrepreneurs alike, facilitating innovation, innovation and productivity in the corporate world. . This model also promotes the entrepreneurial spirit of faculty and students; facilitate the

¹ Lu Thanh Long (2017), Fourth Industrial Revolution, accessed April 14, 1977, <<http://vnexpress.net/projects/cach-mang-cong-nghiep-lan-thu-tu-la-gi-3571618/index.html>>.

cooperation between higher education and industrial production; Combined with the regional and local economic development efforts ... Education 4.0 helps the teaching and learning activities take place all the time and everywhere, helping learners to personalize, completely decide on learning by needs of yourself.

Education 4.0 will help change thinking and approach to the college model. Universities are not only a place for training, research but also a center for innovation, to solve practical problems, bring value to society. The school is not only framed in the walls of lecture halls, classrooms or laboratories, but must be expanded in conjunction with businesses, with the labor market to become an educational ecosystem. The development of information technology, digital tools, networking and metadata will be good tools and means to change the way we organize and teach. Traditional classes with disadvantages such as high organizational costs, limited service space, unfavorable for some objects ... will be replaced by online classes, virtual classrooms. The quality of online training is easily controlled by the support tools, such as the sensors and the cybernet connection. Learning spaces will also be more diverse, instead of traditional labs or simulation rooms, learners can experience cyber-space learning, which can interact in real-world conditions. soft and network system. Big data will be an endless source of data for analytical experience, trend identification, or high-precision business forecasting. The digital learning resources in virtual and virtual space are extremely rich, and the library space is no longer the place to be; the library can be exploited everywhere with a single operation. simple The curriculum is also designed to be more diverse, more specific and more responsive to the needs of learners.

Firstly, the foundation of the industrial revolution 4.0 is the connection between the real and virtual worlds through information technology, digital and networking software, so knowledge and skills in information technology. And digital plays a very important role for the school as well as the learner. The task of universities in the next period must train enough information technology experts; We actively equip our students with the digital knowledge and related skills to meet the social needs of the 4.0 industry. Equipped with enough foreign language skills to be able to work everywhere as a global citizen.

Second, for universities, the 4.0 revolution requires the training of human resources with new skills and higher education levels than in the past 10 years, because of the labor market demand. Higher education and training. In reality, university education in general has not met the needs of employers. According to a 2013 study by Lumin Foundation / Gallup found that only 11% of business leaders thought college graduates in the industry they were looking for was working. This figure is far from the 96% of staff in charge of training at colleges and universities are confident that their schools are training students for future careers. Scale of skill shortages varies by industry. A survey by the Manufacturing Institute and Deloitte with 450 manufacturing executives showed that the areas where most skilled workers are: technology and computers (70%), problem solving (69% %), basic technical training (67%) and computing skills (60%)²

² Impact of the 4.0 Industrial Revolution on Higher Education Institutions in Vietnam and Policy Recommendations for Vietnam - Baomoi.com.vn, 27/08/2017

The 4.0 revolution has the direct, largest impact on education - the direct training of human resources for industry 4.0. In order to meet the human resource needs of the new industry and at the same time to take advantage of the information technology (IT), many universities around the world have been innovating comprehensively and according to which Education 4.0 is being Evaluation is appropriate.

Third, employment and unemployment are the prevailing phenomena of industrialization 4.0 and especially at an early age when the labor force has not yet adapted to new industrial conditions and a dramatic shift in the structure of labor. Between fields. In fact, there have been changes in employment in the labor market, as robots have begun to work on behalf of people. Robots with infinite learning resources can do well in some subjects such as geography, history ... and can completely replace the current teaching staff. Jobs in areas such as legal advice, accounting and tax consulting can also be completely replaced by smart robots. Therefore, the issue for universities is to orient training to meet the industry requirements of the 4.0 technology revolution and retrain them to adapt to new industries. revolution of the industry

Fourth, the current training program has not been flexible, the content is not suitable with the needs and trends of the labor market revolution 4.0. Education and training are one of the nine areas of change, the education system will be strongly impacted and comprehensive, the list of training occupations and training programs will have to adjust and update. This is because the boundaries between fields are very fragile. Universities provide training in two directions: on the one hand, they must meet the social orientation and on the other hand train the supply of human resources to meet the requirements of the labor market. However, the greater the pressure on universities, the higher the degree of professionalism in a particular field, and the interdisciplinarity (information technology, digital, networking, anthropology). Specialized skills and other indispensable skills, such as: systematic thinking ability, ability to synthesize, ability to link between real and virtual world, creativity, Interdisciplinary collaboration ... In the context of rapidly changing technology, equipping self-learning and lifelong learning is more important than the knowledge of the curriculum. As a result, the 4.0 revolution has put a lot of pressure on the training of universities, from developing training programs, updating the curriculum content to the skills training for learners. Applicable to industry.

Fifth, another issue for higher education institutions is the way to organize the content of the curriculum to the learners. Revolution 4.0 requires modular training methods and methods with the powerful application of information technology, digital technology and networking. Online training, virtual training, simulation, digitizing lectures ... will be the trend of vocational training in the future. This requires the training institutions to have good preparation of teaching resources, especially lecturers, building learning spaces, teaching and learning equipment

Thus, the industrial revolution 4.0 has a tremendous impact, creating a great turning point with the world education in general, Vietnam in particular. To do that, education plays a pivotal role ... The question now is whether to change fundamentally, not just in terms of vocational training or university education. Need to change from general education, kindergarten; The special requirement now is to educate the consciousness and skills of a global citizen.

2. Requirements for university lecturers to meet the industrial revolution 4.0

The leap of industrial revolution 4.0 poses many challenges and many new jobs in the labor market. This change requires education (especially higher education) to give learners both new skills, creativity, adaptation to new challenges and requirements. In order to make the most of the opportunities, overcoming the challenges of the 4.0 industry revolution requires improving the quality of our teaching staff. No matter how modern science and technology develops, it is impossible to completely replace the role of a teacher. In recent years, teachers in the universities have been standardized in their degrees, most of them with master's degrees, doctorates, associate professors and professors. However, the practical knowledge and capacity of scientific research of a faculty member is limited. Under the current technological development conditions, students can find their own knowledge and skills through the Internet. Therefore, teachers often improve, to improve the level to master the role of the teacher. Thus, responding to the revolutionary 4.0 industry requirements for university lecturers is:

Firstly, the 4.0 revolution required university lecturers to meet the high demands of the profession, because the 4.0 revolution was conducted in a modern teaching environment with rules, principles and requirements. There are many forms of teaching, such as online teaching, distance teaching, etc. This requires university lecturers to be active in directing and updating new information and knowledge. Clear technical operations, rules and principles of online lecture. In addition, the 4.0 revolution requires university lecturers to master technical issues, to constantly update new information, to capture new knowledge for accurate and effective transmission. to the learner Moreover, faculty are an important part of the knowledge economy. Therefore, lecturers, whether they are executives or those who play the role of management, are highly knowledgeable, systematic, specialized in each position, each task and each specialized field. can Lecturers are responsible for maintaining (or achieving) the level of cognitive ability in the subject area, not only in the areas of expertise but in all areas of interest. The appropriateness of content and teaching in accordance with the stated objectives and sufficient preparation for students to study. The representative character of teaching - learning content of the typical character, so that the capacity of teaching content, lecturers must actively update the content areas related to the professionalism that they teach.

In short, meeting the requirements of the 4.0 revolution requires teaching staff to have a high level of expertise, information technology, network system, so the preparation of human resources is also a factor. It requires universities to be well prepared. Teachers must constantly update their professional knowledge, technology ... by regularly attending training courses, seminars and conferences.

Second, university lecturers need new changes, know soft skills, crowd presentations, teamwork skills, management skills.

Viet Nam also needs to transform education from transferring knowledge to developing quality and capacity of learners, organizing open, practiced and practical education; development of education and training from mainly quantity to focus on quantity, quality and efficiency; Moving from the emphasis on personality education in general to combining personality education with

the best promotion of individual potentials; Moving from the concept of knowledge to competence to knowledge is only an important element of competence. In particular, new educational models such as virtual classrooms, virtual teachers, virtual devices, laboratories, virtual libraries, etc. should be applied with the support of intelligent devices; Facilitate and require students from the 3rd year to join the research team. At the same time, these themes must be associated with solving a specific problem in the professional field, or in the economic and social life ... to meet this educational objective, the role of the teacher In order to teach students to do the job, teachers in schools need to change, to know soft skills, to work in groups, to grasp how to make presentations to the crowd, to work in groups Management. In general, the lecturer must have a comprehensive view, a person with a mind, have a career. Teachers also have the appropriate pedagogical knowledge and skills, including the ability to communicate goals, select effective teaching methods, provide opportunities for students to practice and provide feedback. Mind the diversity of the student body. If the mastery of a certain skill (eg, critical analysis, design of experiments) is one of the objectives of the course and will be taken into account in the assessment and scoring of the student, Students have opportunities for students to practice and receive feedback on this skill during the learning process. If students or groups of students have different learning styles, then the instructor must be aware of these differences and, if possible, change their style accordingly. In order to maintain pedagogical competence, faculty members must actively update teaching methods to help students learn the right knowledge and skills and to create equal educational opportunities for different groups of students. . This requires instructors to read a variety of general or specialized education materials, attend workshops, conferences, and test different teaching methods in a given course or group of students.

Thirdly, faculty members need to be more flexible, proactive, actively update new knowledge to meet the industrial revolution 4.0.

In addition to professional knowledge, faculty members need to broaden their knowledge of the social sciences, information technology, network management, and so on. change of technology, working effectively in a highly connected environment, between fields, between virtual and real world. Essential skills for lecturers in interactive technology environments need to be included in the selection criteria for faculty selection such as teamwork skills, creative skills, critical thinking, thinking systems, decision-making skills in uncertain conditions ... special learning methods and lifelong learning. In addition, the instructor clarifies his or her view of the problem and compares that view with other approaches or interpretations, thereby helping students understand the complexity of the problem and the difficulty of reached a single "objective" conclusion. To create an open and safe environment for classroom discussion, faculty members invite all students to state their views on the subject, to set out ground rules for discussion, to respect the student even It is necessary to express disagreement and encourage Thirdly, faculty members need to be more flexible, proactive, actively update new knowledge to meet the industrial revolution 4.0.

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Fourth, teachers have modern teaching methods suitable to meet the industrial revolution 4.0.

Cheap technology is a good condition for universities to invest in facilities, tools and modern teaching facilities. In addition to the form of direct instruction for learners, schools need to use more than other forms such as online training, virtual environment design so that learners and trainers can interact and communicate information. , hands-on labs or virtual simulation rooms. Use computer systems and big data to design programs, organize teaching for each object in the most effective way. The online learning system is becoming more and more popular, through the online system that will collect data for each individual. With the accumulation of large amounts of data on individual learners (duration, methods, training paths, interaction levels, learning outcomes ...), Machine Learning algorithms provide a teaching method. The best way for each student is to optimize the personalized approach to learning that even the best teachers can not. Universities should step up their use of this type of training and learning.

Fifth, the instructors have a method of linking theory with practice, theory and practice

Universities should associate with big business to form a new college-university model. more proactive in connecting with the business, must see the business is their market, students themselves are trained to meet the work needs of the business. The company uses the machines, equipment, software, we will focus on teaching students the machines, equipment and software. In addition, schools and businesses should collaborate in training, scientific research and technology transfer to produce high-tech products that meet the standards of the 4.0 era. Universities must expand dialogue, cooperation with businesses in research, training and consultancy activities; Teaching staff has the opportunity to access practical production and business conditions and capture market changes to make adjustments in teaching. For work, need to move from memorization, remember many to form the ability to adapt, adapt, solve problems, independent thinking. Not only learning in books, but also learning through other forms such as games, interactive contact, crowd supply, project learning, future workers Think twice about lifelong learning through lifelong learning.

In the 4.0 revolution many industries will disappear and replaced by other industries, in line with the development of digital industries such as electronics, telecommunications, mechanics, automation, information technology. Universities should pay special attention to the training of

human resources in these fields, as they will need to recruit human resources in these fields. In order to have qualified human resources that meet the recruitment requirements of the business, schools should encourage the involvement of business counselors.

Sixth, the instructor is a proficient user of a second language, particularly the English language

In order to meet the industrial revolution of 4.0, faculty members can work in different national settings, requiring instructors to be fluent in English. Because of; English is the global language, more than 53 countries and territories use, is the official language of the EU and is the third most widely spoken language in the world after only in Chinese and Spanish. (China has more than 1 billion people). International events, global organizations, etc. also default to English as the language of communication; English has an important role and position in education and training, in the development of the country. In general, knowing English is the inevitable requirement of university lecturers to grasp the often-renewed knowledge that knowledge of English is a necessary skill for modern Vietnamese.

Today, English is used in all areas and in most countries around the world. English is spoken by more than 400 million people in the world, and over one billion people use English as a second language (according to Wikipedia), the highest income countries in the world. Proficiency in English, or commonly used, is taught as a course in the field ... such as the Sigapo Country when it comes to the importance of learning English when undertaking country development 1 in changing the country. is that he put people learning English, actually answered ... For Vietnam, a developing country, involved in globalization, the industrial revolution 4.0 English learning is very important. Therefore, university professors who are proficient in English also have the ability to adapt their teaching to their schools by linking and teaching students to future generations of the university in the language of their choice. He became more necessary than ever.

Saturday, university lecturers meet the revolutionary 4.0 industry should be responsible, high security, have a smart way to deal with the students and colleagues

It is the responsibility of the instructor to contribute to the intellectual development of students, especially in their field of study, avoiding such things as abuse and discrimination that affect the development of the learner. Faculty is designed to teach how to promote learning, encourage self-determination and independent thinking in students, treat students with respect and promote dignity, avoid actions Affect the development of students. The lack of responsibility for student development demonstrates in the case of lecturers who are not adequately prepared and do not design effective teaching methods, forcing students to accept a value or an interest. somehow, or not discuss different theoretical interpretations. Assessment methods and scoring standards must be clearly communicated to the student at the beginning of the course, without notice to the student, except in exceptional circumstances. Exams, essays, and assignments are carefully and fairly graded through a well-rounded scoring system that students can understand. By appropriately sized classrooms, faculty provide students with accurate and timely feedback on

student learning throughout the course, along with explanations of how to grade and constructive suggestions on how students can learn better.

To minimize conflicts of interest, faculty avoid double-role relationships with students that may affect student development or lead to faculty who are biased or marginalized. for bias students. It is the teacher's responsibility to keep his / her relationships with students focused on pedagogical goals and academic requirements. Scores, attendance cards and personal communications are considered confidential and may only be disclosed with the consent of the student or for legitimate academic purposes or if there are facilities. It is reasonable to believe that disclosure of such information will be beneficial to the student or will prevent the harm to others. Violation of the confidentiality principle in a teacher-student relationship can lead to student distrust of lecturers and reduced motivation for learning. Any rules or policies applicable to the confidentiality of student information must be fully disclosed to the student at the beginning of the term.

In the interactions between colleagues related to teaching, the overwhelming concern is the development of students. Where possible, disagreements among colleagues regarding teaching should be addressed separately and not to affect student development. If the instructor suspects that his / her colleague is incompetent or violates instructional ethics, he / she is responsible for investigating this issue thoroughly and consulting with his or her colleague before any any other action.

Thus, right from the university lecture hall, the school, the teachers must help students accumulate knowledge about information technology, timely updates and application of the latest scientific and technological advances. the world in life, equipped with foreign language and soft skills, the students when the new school has the opportunity to compete for jobs, opening the door to enter the playing field globalization.

CONCLUSION

Industrial revolution 4.0 has had a tremendous impact, creating a great turning point for the world education in general, Vietnam in particular. To do that, higher education plays a pivotal role. The task of universities in the next period must train enough information technology experts; To equip students with digital knowledge and related skills to meet the needs of society in the 4.0 industry, equipped with a foreign language sufficient to be able to work anywhere in the world. the status of the global citizen. Thus, the first breakthrough to achieve that goal is the first and foremost requirement for university teachers who directly train the highly qualified human resources for the country, met the revolutionary industrial 4.0. It is important for the school development strategy to be implemented, and it is important for the development of adequate and qualified faculty. Developing faculty is not a one-off task, in the current boom of knowledge, this work should be considered as ongoing, continuous work of the whole system, department, subject area and each. lecturers.

REFERENCES

1. The Daily Affairs (2017), Application of the Industrial Revolution 4.0 in Higher Education in Vietnam, Vietnam Television 25/3.
 2. Tran Khanh Duc (2010), Education and Training: Human Resource Development in the 21st Century, Educational Publishing House, Hanoi.
 3. Vietnam News Agency (2017), hi-tech human resources will help Vietnam catch up with industry 4.0, VTV Vietnam Television 8/5.
 4. What is the Industrial Revolution 4.0? E-mail news.zing.vn/cach-mang-cong-nghiep-40-la-gi-post750267.html
 5. Vietnam's education before the requirements of the industrial revolution 4.0 - <http://baochinphu.vn/Khoa-hoc-Cong-nghe/Giao-duc-Viet-Nam-truoc-yeu-cau-cua-cach-bear-cong-nghiep-40/> 308970.vgp.
 6. Impact of the 4.0 Industrial Revolution on Higher Education Institutions in Vietnam and Policy Recommendations for Vietnam - Assoc. Nguyen Cuc - Political Academy Region I - Online newspaper baomoi.com, 27/8/2017.
 7. What do higher education have to do with the challenge of the 4.0 revolution? Dr. Phan Quang Trung - Vice President of the Association of Universities and Colleges, Electronic newspaper giaoduc.net.vn dated 22/07/2017.
 8. What is the education sector "picking up" the Revolution 4.0? Prof. Phan Van Truong, adviser of the French Government on international trade - baoquocte.vn online newspaper, 14/4/2017.
- Impact of the 4.0 Industrial Revolution on Higher Education Institutions in Vietnam and Policy Recommendations for Vietnam - Baomoi.com.vn, 27/08/2017.