

**INNOVATING VIETNAM EDUCATION TOWARDS INTERNATIONAL INTEGRATION  
TO MEET THE INDUSTRIAL REVOLUTION 4.0**

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**Summary:** *The world today is experiencing tremendous changes like never before. The fourth industrial revolution - also known as 4.0 generation industry (CMCN 4.0) - has been and will continue to create dramatic changes, affecting every aspect of human life in 21st century. This revolution will deeply affect the global economy and society, including education. It poses urgent problems for education, if education (especially higher education) is considered a necessary preparation step for learners to confidently step into life, then the school needs to equip a full range of skills necessary for employees towards international integration, not only for the present but also for the future. The reception and change to meet the 4.0 revolution and international integration are set for the education sector, in which higher education in general and essential.*

**Keywords:** *Education, University, Integration, Industrial Revolution 4.0*

Higher education is moving under the impact of new incentives. The new requirements of 4.0 revolution are set, the international integration. The increasing demand for admission, the diversification of schools and sources of supply, cooperation between schools and networking, the need for lifelong learning, the impact of information and communication technology, responsibility social responsibility of universities, change in the role of the Government. Basically, these motivations are a concrete manifestation of a globalized world in higher education in the industrial era 4.0. According to T. Friedman, it is a flat world in which geographical, economic and political barriers are being removed. This flat world is also making a "flat" of education, which means creating a level playing field, networking, where everyone can learn, cultivate knowledge, develop skills, and every countries and organizations can participate in providing education, both cooperating and equal competition. Therefore, meeting the 4.0 revolution requirement, the need for international cooperation on education has shifted to a new, higher and more complex stage of development. The challenges and opportunities of revolution 4.0 in the process of international integration in education are analyzed in various international, national and international forums, seminars and materials. The problem is that from those analyzes, every country needs to find out the necessary policies and strategies for higher education to best fulfill its mission in producing,

spreading and applying knowledge, consciousness, meeting the needs of the 4.0 revolution and training human resources in the globalization trend for the country's socio-economic development.

### **1. Industrial revolution 4.0 - love the trend of integration**

The 4th industrial revolution is a trend of automation and data exchange in production technology. The nature of the 4th CMCN is based on digital technology platform and integrates all smart technologies to optimize processes and production methods; emphasizing the technologies that are and will have the biggest impact are 3D printing technology, biotechnology, new material technology, automation technology, robots, ... It includes space systems network, universal Internet and cloud computing. Thereby, people create smart factories with mechanical systems that connect with each other, organize and manage themselves. This is also called the digital revolution, because we will see the "digitalization" of the real world into a virtual world.

The 4.0 revolution will make the labor market have a change in labor structure, structure of resources and structure of labor standards, with different labor skills requirements. In particular, workers must have higher adaptation to meet new jobs and avoid rejection. Trained labor in Vietnam only accounts for more than 60% of the total labor force, of which only about 21% are trained with certificates and training periods of 3 months or more<sup>1</sup>. Therefore, when entering the industrial revolution 4.0, the workforce will face great challenges such as:

(1) Through the replacement of labor by machines, robots, artificial intelligence and the application of information technology to a number of industries and professions that are rapidly penetrating the workplace in the labor market. Vietnam. Not even hard work, but also highly specialized jobs such as lawyers, financial analysts, doctors, journalists, accountants, can be partially automated or completely. With these technologies there is the potential to free Vietnamese workers from low value-added jobs, thereby enabling workers to participate in less boring, higher value jobs. . Synonymous with increasing productivity of workers.

However, if Vietnam does not have good preparation, the industrial revolution 4.0 may lead to job loss in some labor-intensive industries such as textiles and garments, leather and footwear, and electronic assembly. Typically, the risk of replacing labor in the textile and footwear industry in Vietnam. 3D printing technology has progressed to the point of being able to produce shoes on the spot, and this technology will soon be completed in the near future. This means that consumers in developed countries can immediately have a pair of shoes produced according to the needs of their customers without having to go through a production or import process from another country.

However, automation is not a threat to job seekers, if they are skilled. Most employers think that digitalization will increase recruitment capacity in the future. Only 10% expect to reduce the

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<sup>1</sup> The news source of Vietnam News Agency, Labor 4.0 must make major changes in labor skills, 08/11/2018 16:23 GMT+7

number of manpower because of automation<sup>2</sup>. Therefore, when automating, most businesses will need more people.

(2) Impact on quality of human resources: To meet the requirements of the industrial revolution 4.0, the necessary labor skills in the era of new technology outside required hard technical skills (medium and high) including specialized knowledge and skills that belong to the technical revolution to perform specific tasks, need to have soft working skills or core: the ability to think creatively and proactively in work, skills in using computers, internet, foreign language skills, teamwork skills, safety skills and compliance with labor discipline, problem solving skills, time management skills, concentration skills. In Vietnam, although the labor force is abundant, the quality of supply is still low and is improving, but the process is quite slow.

(3) Changes in supply and demand in the labor market

With digital technology platform, integrating all information about technology, processes, production methods, demand for industry, profession, skills ... and especially the ability to connect and share across The world through technology devices, will change the way of connecting the supply and demand in the labor market. In Vietnam, the current lack of qualifications and skills will increase when major trends begin to affect the employment picture. Even workers with appropriate skills are unlikely to find jobs that match their qualifications or interests. The basic reason is that there is no place or place for workers and businesses to connect with each other effectively.

(4) great impact on the analysis and forecast of labor market information

Industrial revolution 4.0 will have a strong impact on the quantity, quality or nature of current and future jobs. Currently, a fundamental reason is the lack of information on job opportunities, lack of information on the quality of workers, lack of time, limited selection of jobs and lack of income, so it is difficult to switch to jobs. more suitable, or a series of other factors that lead to imbalance between supply and demand in the labor market. Thus, how to solve the above problem, that is the work of analyzing and forecasting labor market information. However, this work in Vietnam still faces many difficulties.

Regional countries have had strategies, policies and action plans in the context of the Industrial Revolution 4.0. If Vietnam does not take precise, specific steps, the risk of being left behind is very likely to occur.

In addition to the positive impacts, the Technology Revolution 4.0 is posing challenges for Vietnamese workers. That is the problem of unemployment and inequality in income is at risk of increasing rapidly, leading to widening the gap between rich and poor if Vietnam does not take advantage of the good opportunities that this revolution created, threatening mechanics create greater injustice, especially the risk of breaking the normal process of the labor market, when

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<sup>2</sup> Practical path for industry 4.0. Obstacles to digital conversion and how manufacturers can overcome them. Financial services of Siemens, February 2018 (<https://www.siemens.com/customer-magazine/en/home/industry/creating-a-prreal-pathway-to-industry-4-0.html>)

automating the replacement of people in the entire economy, workers will be redundant and that could exacerbate the gap between profits and capital and profits compared to labor. The gap between technology and knowledge also widens, leading to deeper social differentiation.

According to the report of the World Economic Forum, 64% of children are attending school today, when they graduate, they will do jobs that have never appeared. This means that the labor market will change, supply and demand also change. Supply and labor in Vietnam are mainly young, low-skilled, low-cost workers. Currently only 20% of workers in Vietnam have basic training. Moreover, of the more than 20% of these basic trained workers, there are still inadequacies<sup>3</sup>. Accordingly, the structure of training is not reasonable, causing a shortage of teachers and a shortage of high-level technical workers. Vietnam is a country with extensive international integration and a high open economy but the rate of quality labor is still low, nearly 77% of the labor force has no professional or technical qualifications<sup>4</sup>. To address the shortcomings and shortcomings of the labor market before the industrial revolution 4.0, the Vietnamese labor market needs to continue to develop towards modernization with the system; the legal, institutional and labor market framework must be gradually improved; improve the quality of labor supply, overcome the serious shortage of high-tech workers, labor in some new industries ...

In this context, internationalization of education is a new trend in the policy of educational development in countries to contribute to the orientation of the globalization process.

Internationalization of education is the process of international integration in education, in which international and intercultural elements are integrated into the functions, tasks, ways of delivery and the process of organizing the implementation of education. This process is currently taking place mainly through the cross-border shift of four basic factors: Learners, teachers, educational programs and education providers. This shift has a unique name, transboundary education.

Cross-border education in the last ten years has grown strongly and has two basic characteristics: 1 / besides the long-inherent cross-border movement of learners and teachers, the formation and strengthening of transboundary movement of education programs and education providers; 2 / in addition to transboundary movement under the non-commercial mechanism (through international cooperation with ODA projects and training links) has formed and developed cross-border movement by trade mechanism trade.

These two mechanisms are closely related to the two leading international organizations in the process of internationalization of education. These are UNESCO and WTO. UNESCO is the United Nations educational, scientific, cultural and communication organization with 193 member countries. UNESCO's basic point of view is that education is a fundamental right of people and

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<sup>3</sup> Education in Vietnam before the requirements of industrial revolution 4.0 - <http://baochinhphu.vn/Khoa-hoc-Cong-nghe/Giao-duc-Viet-Nam-truoc-yeu-cau-cua-cach-mang-cong-nghiep-40/308970.vgp>

<sup>4</sup> Thuy Dung, new skill requirements of workers for industry 4.0, Saigon economic magazine, 11/14/2017 <https://www.thesaigontimes.vn/.../Yeu-cau-moi-ve-ky-nang-lao-dong-cho-cong-nghiep-4.0>

anyone, on a worthy basis, also has access to higher education. In the context of internationalization of education, UNESCO is tasked with strengthening international cooperation between countries, promoting cross-border education not for profit. The legal document for the implementation of this task of UNESCO is the World Declaration on higher education for the 21st century and the UNESCO Conventions on the recognition of diplomas. WTO is a world trade organization that currently has 153 member countries. The basic view of WTO considers education to be one of the 12 commercial services (tradable service) covered by GATS; This service needs to be gradually liberalized on the basis of negotiation. Like UNESCO, GATS is tasked with promoting the internationalization of education. The fundamental difference is that GATS aims to promote cross-border education for profit purposes. Many countries are both members of UNESCO and WTO members. Those countries accept both transboundary education mechanisms: profitable and non-profitable. In fact, whether it is officially accepted or not, both of these operational mechanisms have become a reality. The problem is to find the optimal relationship between the two mechanisms for education to fulfill its mission according to the specific and long-term goals of each country.

The trend of international integration and its impact on Vietnamese higher education meet the requirements of industrial revolution 4.0.

Industrial revolution 4.0 has made science and technology thrive leading to the explosion of knowledge. As a result, making production and all areas of cultural and educational life will have to innovate quickly on awareness and lifestyle of the community. In order to avoid backwardness, timely adaptation to the changing of day and hour of production as well as life, individuals and communities, it is impossible not to equip with new knowledge, skills and behavioral adjustment. In accordance with the new ones are constantly appearing according to the trend of international integration to meet the requirements of Industrial Revolution 4.0.

International integration to meet the requirements of Industrial Revolution 4.0 requires a high level of knowledge education with: the creation (production) of knowledge taking place at a fast, large scale; the use of scientific and technological knowledge into production has become a daily need of society; The handling of knowledge transfer and information takes place quickly and widely, thanks to the boom of modern tool systems, in which information technology plays a decisive role. This requires higher education to innovate thinking, directing the community to a learning society with a knowledge economy. At the same time, it is necessary to make the cultural conceptions of mankind change, proactive integration and dialogue between cultures, to be able to live with the cultural values of other communities. The achievements of science, technology, literature, art, medicine, sports ... in general are the cultural achievements of mankind, requiring people to learn lifelong to adapt to the culture. Modern world, meeting the requirements of 4.0 revolution.

Thus, Vietnamese higher education in the trend of international integration meets the 4.0 industrial revolution with the aim of universities being to train successful individuals and responsible citizens. Graduates feel confident in exploring a wide range of issues and experiences in the university or real life environment, even if they study any profession. Helping students

understand the basic knowledge, are equipped with skills to be confident in life and into the labor market (making a living as well as developing knowledge).

## **2. Requesting education innovation according to the trend of international integration to meet the requirements of industrial revolution 4.0**

Over the past decades, Vietnam's education has developed, achieved remarkable achievements, contributed significantly to improving people's intellectual standards, training human resources for the construction, protection and renewal of the country. But at the same time, education is hiding many weaknesses and shortcomings.

The content, programs, educational methods are backward, slow to innovate, slow to modernize, not closely associated with social life and professional labor, not promoting creativity and practical capacity of the school. students The quality of education appears to be loose, declining, new attention is paid to literacy, while teaching people and vocational training is still weak; weak on ideological education, ethics, lifestyle, national history, creative thinking, practical skills, life skills ... The national education system is unreasonable, inconsistent, not connected, unbalance. The mechanism of education management is slow to innovate, there are many confusion, very different perceptions, especially in terms of market economy and international integration; have not kept up with innovations in other areas of the country. The education management staff and teachers are still inadequate, moral and the capacity of a department is still low. Not fully and properly aware of educational socialization; the orientation of linking with foreign countries in educational development is still limited, not yet clear the motto. Educational thinking slowly innovates, has not kept up with the requirements of national renovation and development in the context of market economy development and international integration; Educational science has not been given adequate attention, the quality of scientific and educational research is still inadequate. Some policies on education are subjective, only will, far from reality, lack of social consensus.

Meanwhile, the process of educational services associated with globalization and international integration of education has changed the function of education, raised a new ladder in relation to fields. Other areas of social life. It is economic function, investment, creating new values and connecting society, international competition ... Education is no longer merely human resource training and social welfare.

Interference, dialogue, cooperation and competition among education institutions make each country's education both nationally and internationally valuable - humanity. The victory and loss of an education is not only in occupying a large or small market share, a high or low level, but also in gaining and promoting effectively the positive and advanced values. more of other education. Grasping, promoting the values of the nation, absorbing and selecting international values to integrate effectively is the direction that should be focused.

Due to changes in functions and educational development mechanisms associated with high levels of development of the economy, society and other sectors, education in the world is taking

place in new trends that need to be received. Full and profound consciousness. That is the trend of massification; the trend of diversifying forms and modes of education and training, developing distance education, online, changing functions and models of education and training establishments; The trend of globalization, regionalization, integration and cooperation with international competition in education and training has increased. Education and training are increasingly attached directly, causally and effectively to economic, social, scientific and technological development. The mechanism of education and training development is increasingly compatible with economic and social development mechanisms; The market mechanism, the nature of services and the provision of education and training services are increasing, creating innovations in the implementation of social welfare in education to improve efficiency. The trend of promoting socialization, combining public - private development in education and training has been accelerated. Education for adults becomes an increasing demand, forming the need for lifelong learning, which the school with traditional training methods cannot meet. Ensuring and verifying the quality of education and training becomes a problem of the whole society, a content of state management, national values, conditions to expand international cooperation.

Since then, we see that Vietnam education reform needs to recognize some characteristics. Education is no longer a privilege for a department that has the right and money in society but is the right of all citizens, first of all children. At the same time, the obligation of every citizen is to implement compulsory education in order to have a higher and higher level. Along with the commitment of the Government and the enlightenment, learning has become the real needs of the people, the realization of the rights and obligations of learning has been increasingly popularized and realized in development practice. education. The object of education also changes, not only children, but also individuals and members of the community and society. Education is not only to develop the personality of the young generation but also to improve people's intellectual standards, train human resources and foster talents. Educational activities are expanded, not only framed in schools, but also become an activity area that attracts attention and investment of resources from all sides of society. Many areas of science participate in research, explaining pressing issues of education. Philosophy, sociology, economics, ethics, anthropology and many other social sciences must join, to explain the educational phenomena, especially the achievements of information technology. Information is increasingly applied widely to improve the efficiency of the education and training process.

The role and position of teachers also have fundamental changes and increasingly important. The teacher not only conveys knowledge, but also helps students to have access to vast knowledge outside the school. Teachers and learners need exchange, cooperation, discovery and creativity. Teachers not only regularly check and evaluate learning methods but also encourage students' efforts and excitement in learning process. It is important for teachers and students to exchange and evaluate what students learn, how to learn, how to use it, how their creativity is promoted ... The goal is to learn I really love my school, see the school roof is really close; so that the teacher becomes more attached to his school and really feels that: the more he loves the person, the more he loves it.

Continue to strongly innovate teaching and learning methods in the modern direction; promote positive, proactive, creative and apply knowledge and skills of learners; overcome the one-way transmission transmission, remember the machines. Focusing on teaching, thinking, encouraging self-study, creating a basis for learners to update and innovate knowledge, skills and capacity development. Shifting from primary education in class to organizing various forms of learning, paying attention to social and extracurricular activities, scientific research. Promote the application of information technology, communication in teaching and learning.

Higher education is tasked with preparing future forces for society, so education reform must identify and target future social models. Without full awareness of life, not changing basic concepts, there is no education reform. Because education is by nature the orientation of human capacity, economic capacity, and living capacity.

Globalization is an opportunity, an inevitable trend, taking place in all major areas of modern social life: economy, culture, education ..., directly affecting people. Because people are both masters and both the purpose, means, basic and sustainable motivation of economic growth. Economic growth brings material wealth, ultimately, not to better meet the living needs of people themselves. So people are not only motivation but also the ultimate goal of economic development.

Therefore, investing in the development of high quality human resources is an investment in human education, bringing about high economic efficiency, saving the exploitation and use of other resources. Experience from many countries around the world shows that investment in education for human resource development brings higher and more stable economic growth. On the other hand, the efficiency of investment for human development has spread evenly, bringing more fairness about development opportunities as well as the enjoyment of the benefits of development. Therefore, investment in human education and human development is essential and should not be expected.

### **3. Some solutions to improve the quality of higher education according to the trend of international integration to meet the requirements of the 4.0 revolution**

Along with the process of national renewal in general and renovation of the country's education, including higher education, are always concerned by the Party and the State. The X Party Congress has stated that the innovation is still patchwork, lack of an overall vision and a lack of synchronous plans. Therefore, in February 2007, HNT 4 (Term X) issued a Resolution on a number of major guidelines and policies for the economy to develop quickly and sustainably when Vietnam is a member of the World Trade Organization. , which requires: "Urgently build up the overall project of vocational education and training reform, from content and program to teaching and learning methods and examination regime; attach importance to foreign language training, informatics, international law, administrative knowledge and skills; training and retraining of teachers in sufficient quantity, uniform in structure and of high quality".



The document of the XI Congress of the Party affirmed "Basically and comprehensively innovating Vietnamese education in the direction of standardization, modernization, socialization, democratization and international integration". On November 4, 2013, the Central Committee of the Communist Party of Vietnam issued Resolution No. 29-NQ / TW on "Basic and comprehensive innovation of education and training, meeting the requirements of industrialization and modernization. modernized in the context of socialist-oriented market economy and international integration", including nine comprehensive education innovation solutions.

Education reform is a big problem of Vietnamese education in the new period. The specific statement of this problem is closely related to the policy of gradually shifting the current educational model to open education model, building a learning society, effectively developing and using human resources, aiming at improving national competitiveness, enterprises and products in the context of international integration, promoting industrialization and modernization associated with the development of knowledge economy, as indicated in the Central Resolutions.

The development of an international integration strategy for education, including higher education, must be considered an integral part of the education reform project. It must derive from the policy of the Party and the State is to promote the internal strength, take advantage of external resources, take initiative and actively integrate to develop education to serve the implementation of items Socio-economic targets of the country in the period of integration and development. Therefore, it is possible to initially determine the objective of this integration strategy: To mobilize strong resources to develop education, gradually shift to an open education model, with top priority in human training. force, talent and quality improvement, building a modern education, approaching the advanced level of the region and the world. Entering the WTO, will develop a new trend, complement and dispute with this trend, which is the trend of trade in education services.

At the same time, both cooperation and competition, these two trends are outstanding features that dominate the movement of Vietnamese education in the integration process. The wisdom of policies and solutions in the integration strategy is how to exploit the positive side of each trend, creating conditions for both to complement each other, and become a driving force for development.

*First*, build an educational philosophy for the home education in the current period, at the same time each university, each educational institution also needs its own educational philosophy in line with its principles, goals and towards integration into the general development flow of international education.

*Secondly*, the renewal of current educational thinking needs "associated with building a learning society; ensure quality improvement conditions; education system is standardized, modernized, democratized, socialized and international integrated; upholding socialist orientation and imbued with national identity. Striving to 2030, Vietnam's education will reach an advanced level in the region "(10) as the Resolution of the 8th Party Central Committee's 8th Conference affirmed. At all levels and sectors, first of all, the Ministry of Education and Training needs a

drastic change in thinking in higher education institutions, such as changing the way of enrolling, selecting "inputs" in the direction more open, allowing higher education institutions to set their own admission standards and take responsibility for their students with their own "prestige" training, allowing the formation of many other university training models. each other, strictly control the "output" of each training institution to ensure general quality ...

*Thirdly*, strongly renovating the content of the program and teaching methods towards international integration. The content of the program and curriculum should be organized and developed in an open way (allowing regular updates on domestic and foreign knowledge, using flexible textbooks and materials in the country or abroad. to teach for learners), the content of teaching must be closely linked with the practical requirements of the career that the learners are pursuing. In terms of methods, allowing to use a variety of teaching methods on the principle of "taking learners as the center", reducing the maximum load of teaching hours in class so that learners have time to self-study and self-study. Of course, the training institutions need to regularly perform strict and objective inspections and evaluations to ensure the effectiveness of teaching and learning.

*Fourth*, innovating the role of state management agencies in higher education institutions in the context of international integration. Accordingly, legally, it is necessary to continue to supplement and improve legal regulations on higher education activities in the context of international integration. The state management agencies, directly the Ministry of Education and Training, need to change the way of thinking about management of higher education activities in the context of international integration. Rather than direct management of higher education institutions, the state management agencies should only act as "judges" agencies, orienting activities according to law, and creating conditions for higher education institutions to be more independent and autonomous in their activities. Management thinking should be avoided in the way of imposing, or "subsidizing," higher education activities in the context of international integration today.

*Fifth*, to strengthen international research and publication activities, proceeding to internationalize scientific evaluation standards and professional activities at higher education institutions. In the short term, the State and higher education institutions need to have policies to encourage and encourage scientists to study and actively publish research results on international scientific publications. In the long term, it is necessary to set a roadmap (for each different higher education institutions need different routes) to internationalize the criteria for evaluating scientific activities and professional activities. subjects in all higher education institutions, and at the same time it should be considered as an important solution to bring Vietnamese higher education deeper into the international environment.

**Conclude**

Workers who want to be more successful and sustainable during the Fourth Industrial Revolution will need to be creative people, systematic people and people who can solve complex and intellectual problems High emotional intelligence. Implementing the transition will involve workplace culture knowledge, skills and challenges for businesses. Therefore, new skills requirements of workers require countries to change the education system, in which each student's ability to learn must be key.

Currently, globalization is an objective trend, attracting countries, covering most areas, both promoting cooperation, increasing competition pressure and interdependence among many countries. The globalization process has five main advantages: creating the ability to develop, popularize information technology and telecommunications facilities; forming a knowledge economy, with a clear distinction between the role of knowledge and the production of the present day versus before; creating conditions for broad cultural exchange and ideology, making people closer together; promote economic and trade development and create the ability to enforce objective economic laws in a large global space; addressing a number of common problems facing economic globalization and social development.

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