

# **The Trend of Education Reform in the World at the Present Context of Integration and Knowledge Economy**

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**Abstract:** Education reform in countries emerged at the beginning of the twentieth century, with varying degrees, varying intensity, are most vibrant in the late twentieth century - early XXI century, continuing educational reforms in the early and mid-century. The implementation of these educational reforms has resulted in the advancement of science and technology and the vigorous development of productive forces. Educational reform aims to four goals that UNESCO recommends as the four pillars of educational development: learning to learn, learning to do, learning to live and learn. At the same time, education reform must be based on the following fundamental principles: Education is the fundamental right of all; Education must serve the society; Education is the responsibility of the whole society... This article focuses on the trend of education reform in the world in the context of integration and knowledge economy. This will be an important scientific background for Vietnam to set up an educational strategy for the current period.

**Key words:** *Education reform, knowledge economy, integration trend, 4.0 industrial revolution.*

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## **I. INTRODUCTION**

The education system is built to serve the Industrial Revolution. How could we develop new educational models to reflect this and to allow for an increasingly flexible learning environment to build a more stable and confident workforce for the future?

Transforming the global manufacturing industry through the automation of manufacturing processes, incorporating virtual systems and entities, the convergence of new technologies is the prospect for the fourth industrial revolution. In terms of education, the 4th Industrial Revolution offers many opportunities and challenges.

Since the early 1980s, futurists (represented by Alvin Toffler) have begun to talk about the emergence of the third wave of civilization with the transition from industrial to knowledge economy in the trend of globalization. This feature of the world poses challenges, but at the same time brings many opportunities for all nations. Under these circumstances, each country and every economy has very different policy responses to adapt, either to move on to the new world or to prepare the minimum necessary conditions for the integration. Depending on their circumstances, countries seek to take advantage of these opportunities and try to cope with these challenges in order either to take the lead or to keep from falling behind.

## **II. METHOD**

### **2.1 The objective of the study**

The objective of this study is to explore the trend of education reform in the world in the context of integration and knowledge economy as a scientific basis to help Vietnam formulate strategic educational goals for the current period.

### **2.2 Research Questions**

This study aims to answer the following questions:

- + What is the goal in world education reform?
- + How have educational reforms in some developed countries been implemented?

### **2.3 Research Methods**

Based on theoretical and practical studies, the author explores international perspectives, experts, and managers to clarify the current trends in educational reform in the world, in which, learn about educational reforms in the US, Europe, Finland, China and Japan to better understand the causes of success in these education systems. From then on, it is the scientific basis for Vietnam to build the educational strategy target for the current period

### **III. RESULT RESEARCH**

#### **3.1 Educational reform in the context of globalization and knowledge economy**

In the context of the ongoing 4.0 industrial revolution, jobs in the society related to the fields of education tend to increase, for example: computer science, green energy engineering, automation technology, artificial intelligence, aerospace science, etc. Nguyen Cong Khanh (2013) posed such questions as: How to get the Success in a modern society filled with information, always moving, constantly changing? According to Robert J. Marzano (2007), the era in which we live is a time of intense competition in science and technology between nations. In that context, a country that does not develop its own scientific and technological capabilities can hardly avoid falling behind. Thus, an advanced education should create high quality human resources with capability of contributing to the development of national science and technology.

The motivation of the knowledge economy show up right in its concept. It's knowledge. While traditional economic models only rely on labor and resources, in the knowledge economy knowledge is the decisive factor to economy. In other words, with the global competitive tendency in the knowledge economy, the intersection of fierce struggles between countries is scientific technology and education. Countries must be aware of the most important areas of investment to promote knowledge economy development, such as investing in human capital, how to train, attract and utilize talent. At the same time, it must aim at transforming knowledge into skills, into intellect and widening the human mind to become human. This is also the most general direction of the training profession in general of all countries.

Thus, the objective requirement of conducting a global educational reform to meet the new development of humanity in the era of intellectual civilization is increasingly evident, because "Education reform has never become a global phenomenon, as education has never become a globally prominent problem as it is now" (Vien Chan Quoc, 2001).

#### **3.2 Targeted directions in world education reform**

In 1991, the 26th General Assembly of UNESCO decided to establish the Commission on Education for the XXI Century. It sets the basic principles for all educational forces as follows:

- Education is the fundamental human right and the most common human value;
- Education, both formal and informal must serve society: education is a tool for creating, increasing and disseminating knowledge and science, bringing knowledge and science to everyone;
- Educational policies must pay attention to the harmonious coordination of all three objectives: equity, relevance and quality;
- Education reform requires careful consideration and insight into the practices, policies and conditions as well as requirements of each region;
- Education is the responsibility of the whole society, of everyone...

In the summary report on the topic of Learning: a hidden treasure, the Commission also pointed out four pillars of education in the development of countries and nations, namely: Learning to know; Learning to do; Learn to live together and learn to be human (J.Delors, 2002).

The above recommendations of the Commission became a common starting point for the wave of educational reforms in all countries in the world at the end of the twentieth century and early XXI century. Characteristics and center of educational reform in countries of this time reform are basically the same. Countries are increasingly investing in education (the national budget for education is the largest), promoting reform and modernization of the education system to train the society and the economy of a skilled workforce accessing to modern achievements of science and technology, high knowledge level (knowledge of human resources – labor), creating opportunities for people to learn regularly during their lifetime.

To adapt to the trend of knowledge economy, so far many countries in the world including the leading developed countries like the US, Japan, European Union, ... and other developing countries such as China, Malaysia, ... are very focused on the goal of forming characteristics and key ability for learners:

- Creativity, ability to cope with change;
- Cooperative capacity, ability to coordinate action in learning and life;
- Ability to self-assert, self-reliant in learning and life;
- Capacity to act effectively basing on the knowledge, skills and characteristics that have been formed in learning, training and communication.

This is also the point that is emphasized in the educational goals of many countries in the world, because in an ever-evolving society with continuous fluctuations "the workers must deal with more frequent changes in their duties, as well as dealing with changes in personal position, product change and reorganization" (Alvin Toffler, 1992). The formation of capacities for learners must be confirmed.

### **3.3 Education reform in some countries**

#### **3.3.1 Educational reform in the United States**

The United States is a pioneer in the development of the knowledge economy. In education, the United States has constantly introduced innovation strategies which has been successful, helping the United States maintain its educational power over decades. It can be said that from the early 1980s to now the American presidency wants to become the “president of education”. President Clinton has stated “The Information Age is, first and foremost, an education age, in which education must start at birth and continue throughout a lifetime” (Luu Ngoc Trinh, 2002). To achieve that goal the US has invested heavily in education and training. In fact, spending on education-training has increased from \$ 353 billion in 1989 to \$ 635 billion in 1998, accounting for 7% of GDP, well above the annual military spending, with investment in Career training has exceeded \$ 100 billion.

In 2009, President Obama announced the Education Innovation Initiative. The goal of this initiative is to bring US students to the forefront of science and math achievement in the next 10 years. Some milestones in the initiative include increasing state investment in STEM education and preparing 100,000 new STEM teachers for the year 2021.

The study by (Hui-Hui Wang, Tamara J. Moore, 2012) states that President Obama's Science and Technology Advisory Council had said that the education system in the United States must be prepared students with solid background in science, technology, engineering and math. The report concludes that future US progress and prosperity will depend on the quality of STEM education.

Former President Obama affirmed in his speech on the importance and direction of the United States in the development of education that one of his central issues as President of the United States is to build the methodology to develop science, technology, engineering and mathematics in which all people contribute together, and they need to prioritize the training of qualified teachers and trainers in these areas and at the same time ensure that the entire people of the country work together to foster the development of these disciplines.

The US government has launched a three-part plan to assist states and localities in building and maintaining an international primary-secondary education system:

- Focus on the development of educational standards (especially the quality of education).
- Encourage the local level to cooperate in educational reform, raising the sense of responsibility of those directly involved in this work. The Government sets out the Education Responsibility Act, whereby grants for federal funds, states and schools must be in accordance with the areas of responsibility assigned.
- + Identify weak schools for appropriate investment;
- + Rebuild or close schools that do not guarantee quality;
- + Select qualified teachers and assign the responsibility of teaching according to professional competence;
- + Set out principles, discipline;
- + Publish the school's annual review report and ensure fairness for all students in supporting their learning;
- Improve strategies for improving student achievement including:
  - + Provide students with access to new educational technology;
  - + Reduce the number of students in class;
  - + Improve the quality of teachers;
  - + Create opportunities for learning after class and summer school;
  - + Expand public education for students with disabilities;
  - + Extend public choice.

Thus, the United States has advocated giving citizens the freedom, justice, democracy and a quality education. Educational reforms are implemented at all levels, focusing on upgrading school facilities, improving the quality of teachers. The American educational vision is also about the universalization of higher education. The government has pledged to reduce costs and bring higher education to all US citizens, from high school graduates to the elders and workers. The goal of this policy is to create a high-quality workforce that meets the demands of the knowledge economy. The education system is expanding with rich content and a large audience of women, minorities and people with disabilities. US public education is considered to be well-educated, with a strong commitment to responsibility, standards of education and a spirit of innovation that is adaptable to change following the demand of the economy.

#### **3.3.2 Educational reforms in developed countries in Europe**

From the late 1970s of twentieth century, education in industrialized countries in Europe began to have signs of crisis, education did not meet new demand of society when entering the knowledge economy, the trend of globalization

For these countries, with the formation of a knowledge economy in which the ability to create knowledge, the level of access and application of modern knowledge in the production of material and spiritual values, knowledge power is clearly evident. The training of human resources poses the problem of providing knowledge while equipping people with creative and professional skills, techniques and labor attitudes. The common trend in these countries is to conduct educational reform, break with traditional education, raise the quality of education to the forefront, develop the capacity of the learner, maximize the strengths and personalities of the learners, take advantages of the great potential of information technology in the education process.

The basic characteristics of modern education in these countries are: focusing on developing learners' capacity; Moving from teaching one-way transmission to teaching to promote activeness, initiative and creativity; Freedom, diversity in education, make education adapt to the diversified development of market economy.

In order to achieve the goal of training highly skilled and knowledgeable human resources, many countries have increased annual expenses for education and training. While developing countries often emphasize investment in universal primary and lower secondary education, policy and investment of developed countries focus on improving quality of human resources. Developing countries in the OECD now increase their average investment in knowledge (including investment in education, research and development (R&D)) to 8% of GDP. This policy has had a significant impact on improving the quality of human resources in these countries and has generally promoted high school education, which is a significant component of young people continuing their education to college. According to statistics, 13% of the population aged 25 to 64 have university degrees, especially in the United States and the Netherlands, the proportion is up to 20%. Overall, 60-70% of the current workforce of OECD countries are intellectual workers (Luu Ngoc Trinh, 2002)

### **3.3.3 Education reform in Finland**

The Nordic countries are considered to be highly developed countries in education in the world. Finland, Denmark and Sweden are recognized as three out among the most successful and modern educators in the world. According to (L.K. Luong, 2017) the education system of these countries is aimed at comprehensive human development and is able to adapt rapidly to changing habitats. Therefore, training and fostering teachers has always been deeply concerned by the government and is designed to be very systematic.

Based on research by Kupari (2001), the Finnish comprehensive school system and its results have received widespread international attention at the beginning of the new millennium (PISA application). The Finnish education system has become an attractive and internationally inspiring example of an effective system of successfully combining high quality with fairness and social cohesion through reasonable public finance (Sahlberg 2006). Since 2001, hundreds of foreign delegates have come to Finland to learn the secrets of the highly effective system. Through these visits, Finland has benefited from the exchange of educational ideas in countries. The questions and doubts presented by visitors have helped Finnish see what is valuable in their system and explain that they understand the high level of their school system. Not a simple and easy task. Therefore, Finland has also begun to think seriously about the special characteristics and strengths of Finnish mathematics education. What explains the high level of mathematics in studies like PISA? What types of policies and strategies have been implemented since the 1970s to improve student achievement in mathematics?

In Finland, teachers are considered "the people who bring civilization to the small village". Therefore, they are highly demanded. All teachers must meet standards and undergo a serious pedagogical training program. Before becoming a teacher, they first had to pass into the pedagogy of any one of the seven universities in the nation. After the national or equivalent exam, the National Teacher Selection Contest takes place. Class teachers must take the VAKAVA (national selection network in the field of education) and the proficiency test. In contrast, subject teachers must take the written test of subject matter and the competence test.

In Finland, the pedagogy is very popular, so the odds to become students of pedagogical competition is fierce. In 2017, Jyväskylä University - the leading university in education and research in this country has 1760 candidates; However, only 80 students were selected. The selection criteria are very interesting: 1/4 of the passed students is at the 20% from the top down of the scores, 1/4 are chosen from the bottom up, and the other half are in the range from 51 to 80 points on 100 points. Not the best or the brightest candidates will be selected. Candidates are selected from a wide variety of assessment and, most importantly, must demonstrate their passion for pedagogy through the exams. The specialty of pedagogy is the theory and practice. Here, students not only practice but they have to go to teacher training schools to accumulate teaching experience. Pedagogical knowledge can not be separated from professional knowledge and must be based on research. From the university, future teachers are trained in endless learning skills and a lifelong learning attitude. In addition, they are taught how to share knowledge and skills to connect in the teacher community and the educators in the

country as well as internationally. In addition, teachers are self-reliant on teaching methods, teaching materials and how to organize the program. STEM education in this country is available at all levels.

#### **3.3.4 Educational reform in China**

China's reform over the past 30 years has achieved great success. Among the many important strategies that have laid the groundwork for China's development today, the changes in its educational policy can not be ignored.

Many Chinese people have named the "general engineer", the "designer" and the soul of the successful reform Deng Xiaoping. On June 23, 1978, after visiting Tsinghua University, Deng Xiaoping referred to sending students overseas. He stressed that students must truly integrate into society and into other country's environment to learn more and more. Deng Xiaoping said that if sending 10,000 overseas students to study only 9,000 people back home, then there is nothing to worry about. As suggested by Deng Xiaoping, the Ministry of Education in China was quickly embarking on overseas student placements. This is a great policy that has profound implications for the development of this country. The door to the world of China expands.

The countries selected as the destination for talent are primarily the United States and the developed West. And for the first time, the major subjects chosen were science, engineering, economics, currency, law. On December 26, 1978, a first group of 52 Chinese students (since the country's reform in 1978) arrived in the United States. Then England, Japan, Germany, France, Canada and many other Western countries also picked up Chinese students. The number of international students of the country has increased dramatically in prestigious universities.

Putting students abroad into learning becomes an important criterion in the open door reform of China. The number of Chinese international students in the past 30 years has surpassed 1.2 million. China has the largest number of international students in the world. Up to now, 77% of the Presidents of colleges, 84% of academics, 62% of Chinese doctors, have been educated abroad.

In the global competitive tendency in the knowledge economy, the intersection of fierce struggle between countries is science - technology and education. Develop science and education closely relates to the prosperity of the nation. In the face of the great challenges of the 21st century knowledge economy, China has considered the support, attraction and use of talent as a national strategic task, in which education is considered the most important stage. Only education enhances human qualities, create modern workers. Slowly growing education will not be able to cope with the challenges of the knowledge economy, even be backward. Recognizing the importance of science and education in raising the intellectual level and quality of human resources, Chinese leader Deng Xiaoping asserted that science and technology is the No. 1 productivity. Improving education and knowledge for the entire population is beneficial to the country.

China has made significant reforms with a number of measures to improve the quality of education, encourage creative spirit and practical ability of learners. The important goal of China's educational reform is to shift from a post-secondary education to an education that develops the qualities of the learner. This is a broad educational reform from goals, curricula, textbooks, teaching methods, assessments and examinations, facilities and teaching equipment to institutional reforms.

In addition to the reform of general education, China has paid special attention to the development of higher education as an important means of training high quality human resources. Project 211 is a project to upgrade 100 universities in key areas such as mechanics, rural development and information technology to the world level.

Education reform has opened up a new "spring" of Chinese education. Chinese education has evolved from elementary to higher education, forming a new education, especially in fast-growing socio-economic areas that meet the needs of the Chinese nation in the new era.

#### **3.3.5 Educational reform in Japan**

Looking at Japan's modern educational history, including pre-war nationalist education and national education based on post-war democracy, it can be seen that it is the history of national education reforms. It is a fact that the role of modern Japanese education is always accompanied by politics and the key to solving the political problems of the times is often demanded in education.

In the 1960s and 70s of the twentieth century, Japan was always proud of its high student achievement in international mathematics exams, an inevitable result of its strong investment in education and training. However, according to the Interim Assessment Committee of Japan (26-6-1985), Japanese education was too biased towards training students hard-working, lack of creativity, lack of personality. The Japanese education and training system during this period emphasized the overemphasis on equality, homogeneity, the importance of mechanical learning, the promotion of collectivism, independent thinking, creativity of individual learners, slow reform. In fact, that system worked well during the decades after World War II by quickly creating a large number of qualified personnel who were receptive to imitation. and improved import technologies, with a labor-

management regime that requires high discipline and mechanical compliance. However, before the revolution in science and technology, the system was outdated. Since the 1980s, Japanese education has exposed the crises and inadequacies to the development of the scientific and technological revolution and the internationalization of the economy.

Recognizing that problem, the Government of Japan has carried out education reform, while preserving and promoting the tradition and identity of the nation in the process of further development. In doing so, the goal of education in Japan is to train a dynamic, creative, explorative generation, and rapidly adaptable to the information society to meet the need of science and technology development of the country in the context of global competition.

The report of the Interim Assessment Committee of Japan stated that "The school must be a comfortable and joy place to children. Children must have sufficient space to be able to proceed slowly with regard to their interests and preferences. At the same time, it must be a school where easy-to-understand hours are being developed, things that are not understood can be considered natural, academic failures, fumbles and stumbles are received as of course. In addition to that, it must be the place where the human relationship with the person that the child desires and the trust relationship between the teacher and the student as the foundation is established, warm the atmosphere in class, children can feel secure and can develop their own capacity"

In such an educational environment, it is not only the study of the subjects but the whole life in school, the learning process with the teacher, the children themselves can feel being valued as a person with no substitute, being trusted and experiencing happiness, asserting oneself and exercising oneself is very important.

It is true that modern education is an institution organized in a large scale by the nation and through education the society is "reproduced" in which children are assured of human rights and survival. And once that happens, of course, a number of fundamental factors, such as addressing international issues, dealing with social issues, and assisting individual survival, will become fundamental issues of education. There are also cases where exceptional factors such as the welfare of individuals, organizations, and organizations can be included.

The basic principles set forth by the Japan Education Reform Council as the basis for education policy development in the coming period are: Respect for the personality of the students; Enhance basic knowledge; Develop creativity, enhance skills, and emotions; Expand the opportunity to select talent; Multicultural education; Keep up with international developments ...

The focus of education reform in Japan is to innovate the method and form of training, to maximize the interest of learners, to further enhance the activeness, initiative and creativity of learners, at the same time, to eliminate unity and excess in the education process; to reduce theory, especially in high school; to transform teaching and learning from "mechanical memory" to the "teacher mainly suggest the problem, the active participation in the discussion"; to reduce the state intervention, promote the autonomy and self-governing of localities and schools in educational issues; to diversify the types of schools, to flexibly adapt the curricula to the training of people who can actively participate in the learning process at any time in their lives.

It can be said that as Japan moves from a manufacturing-based society to a knowledge-based society, education and training reforms to improve the quality of human resources have been achieved the great success, education development guarantees the position of superpower in economic and technical of Japan when entering the 21st century.

#### **IV. CONCLUSIONS**

In the current trend of globalization, the interaction of different cultures - education is very significant. Being a fast developing country, Vietnam is inevitably acquiring modern educational achievements in the world, promoting the education of Vietnam to develop and serve the socio-economic development of the country. The important changes of humanity in which the formation of knowledge economy is the prominent and the trend of globalization in the 21st century has a profound impact on the situation of countries. This feature of the world poses challenges and creates opportunities for all nations. Practical experience from developed and developing countries, which has been reviewed by most experts, including the World Bank, shows that one of the fundamental premises that any nation needs to create is a good education and training system that creates quality human resources. The United States, developed countries in Europe, Finland, Japan, China, etc. are the pioneers in the movement for educational reform with the emphasis on the development of key qualities and capabilities for learners, turning knowledge into skills, people's knowledge into human resources.

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