

## **A Korea-China Comparative Study on Technological Education According to Different Phases of Industrial Development**

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### **I. Background**

With the rapid emergence of China as a regional power, there is increasing cooperation and exchange in various fields including politics, economics, society and culture among countries in Northeast Asia. Korea-China relations in particular are entering a new phase since friendly relations were established between the two countries. Relations between South Korea and North Korea are shifting toward a positive direction, as well.

Korea-China relations are becoming more important owing to the historical, geographical and cultural backgrounds. Relations between Korea and China include a wide range of exchange and cooperation including vocational and technical education for the development of human resources.

As a part of an effort to enhance cooperation in the fields of vocational and technical education, KRIVET signed a Memorandum of Understanding with the Central Institute for Vocational and Technical Education (CIVTE) of China, and exchanged ideas on vocational and

technical education through various means including international conferences on vocational and technical education. Current research is the first stage of such an effort and represents a comprehensive, comparative study on changes in vocational and technical education in Korea and China according to the stage of industrial development in the two countries.

In the research, it was acknowledged that vocational and technological education contributed much to the industrial development of both countries. Change in each developmental phase was examined, and then change, development, and future prospects of vocational and technical education in both countries were suggested along with measures of exchange and cooperation.

Current research faced difficulties owing to the differences in the environments of vocational and technological education in both countries. Despite that, the research is expected to work as a new starting point in the exchange and cooperation in the fields of vocational and technological education of the two countries.

## **II. Changes in Vocational and Technical Education according to the Stage of Industrial Development in Korea and China**

### **1. Korea**

Policies on vocational and technical education in Korea since national independence have shown the characteristics described below.

First, policy on vocational and technical education has been in line with economic policy, and policies on other related fields have influenced the decision making on the policies of vocational

and technical education in direct and indirect ways. The political environment has also influenced the decision making procedure on policy for vocational and technical education, and the government has thus far led the decision making and implementation of vocational and technical education. On the other hand, political and social environments were reflected in economic development plans, and the policy on vocational and technical education prepared measures to secure human resources which were needed to realize economic development. In this way, vocational and technical education and economic development have influenced each other.

Second, policy on vocational and technical education in Korea has focused on the raising and securing of industrial human resources, responding to the changing areas and levels of supply and demand for technical and skilled labor forces and preparing the policy requirements. As the policy on vocational and technical education was established as a supplement or a part of economic and industrial development plans, it served to supply the technical and skilled labor forces needed for industrial development.

Third, policy on vocational and technical education in Korea has been continuously renovated and improved according to the national needs of each period. As different periods of development need different kinds of work forces, policy has been expanded and developed by adding new policies while maintaining others according to the needs of the time. However, there have been difficulties and limitations, too. In particular, policy making on education and training of technical and skilled labor forces and scientists faced frequent setbacks as it needed a long-term plan rather than a mid-term one.

Fourth, policies on vocational and technical education in Korea have been made according to the needs of the time. Some of these policies were too ambitious to be fully realized however. The 1960s experienced an oversupply of human labor. Therefore the keynote of the policy was to improve the quality of labor resources and secure technical human resources which were in short supply. In the 1970s, scientists, technical, and skilled work forces were raised to fill the needs of the chemical and heavy industries. During the 1980s, Korea experienced a lot of external difficulties such as the increasing protectionism in technology markets and pressure to open markets. Therefore, the most important policy initiative of the time was to increase international competitiveness by raising a high quality scientific and technological work force and experienced technical labor forces. In the 1990s, in order to cope with the trends of globalization and demands of an information-based society, an effort was made to secure state-of-the-art scientific and technological workers and redress the imbalance in supply and demand in the labor market. In the 2000s, to meet the needs of a knowledge-based society, policy measures were established to raise competencies and skills at a national level, as well as to develop, utilize and manage knowledge and labor forces and to construct infrastructure for such a society.

Fifth, policies on vocational and technical education have been repeated because they have been made without appraising the planning and implementation of previous policies. Each policy had its background, direction, and prospects for meeting the supply and demand in the labor market. However, there was no systematic appraisal of and reintroduction of previous policies.

## **2. China**

Vocational and technical education in China has been changed and developed flexibly according to changes in society, while maintaining a basic socialist approach. In particular, after introducing policies of reform and openness, vocational and technical education began to reflect merits of capitalism and trends in globalization, which contributed to the modernization and industrialization of China. In the process, the Chinese government and businesses cooperated to improve vocational education. Vocational education in China has been given the same priority as general education, based on the constitution of 1982. This trend will continue in the future.

According to the research, several factors resulting in social change have influenced the development in vocational and technical education in China.

First, political and ideological change influenced its development. China has witnessed numerous power struggles within the party since communism was introduced, and the communist regime was established in 1949. Those who took control of the country through a power struggle had the greatest influence on vocational education as well as on education policy in general.

Second, changes in the economic system also influenced development in vocational and technical education. In the past, China introduced and put in practice a planned economic system emulating that of the former Soviet Union. Therefore, China's vocational education also adopted the Soviet model. The result was a decrease in productivity, economic decline, and consequent degradation in the standard of living. While adopting policies of reform and openness in 1978, China introduced a socialist market

economy system. This induced change in vocational education. As vocational education began to be based on competition, productivity and competitiveness increased and vocational education became an important element that boosted economic growth.

A third factor has been social and cultural change. The high rate of illiteracy and industrial structure centered on agriculture of China in the past were detrimental to vocational education. Later, simplification of characters, universalization of education, and population control gradually brought about the normalization of education. Rapid urbanization and influx of capitalist practices along with industrialization have had great impact on the development of vocational education. However, the Cultural Revolution in 1966 that continued for 10 years had a negative impact on vocational education.

Fourth, technological change was another important factor. Earlier economic and social movements toward self-sufficiency and rehabilitation undermined technological development owing to China's closed door policy. As an open door policy was adopted and new technology flowed into China, the importance of vocational education was again appreciated and saw development.

### **III. Suggestions from a Korea-China Comparative Study of Vocational and Technical Education**

First of all, it is necessary to be prepared for new developments in information and technology, and for change in vocational structure. Korea and China are undergoing such changes in vocational structure as a consequence of new development in the

fields of information and technology, and therefore they need to introduce new systems of vocational and technical education. As service and information sectors assume new importance in the country's industrial structure, physical labor involved in production process decreases in value. While the number of blue-collar laborers continues to decrease, white-collar workers such as workers in offices and the service sector increase. While the numbers of unskilled workers in the labor force is reduced, the number of knowledge workers continues to grow. Such changes in technological engineering require not personnel specialized in a certain profession, but multi-skilled workers. Expansion in the service sector especially necessitates experts in each field, and consequently creates a requirement for vocational education.

Second, it is necessary to cope with technical and vocational change. Major changes in vocations brought about by technological development in both countries include reorganization, automation, and flexibility in the workplace. The most important change in production systems since 1980 is flexibility. Flexibility means functional flexibility, flexibility in technique, flexibility over an entire organization, free movement between the occupations, and a system which enables all these. Under this kind of system, mass production and mass consumption don't work any more. In order to produce diverse goods in small number, flexibility in production and consumption is brought to the fore. Functional flexibility based on a multi-skilled labor force also becomes important. Functional flexibility here signals changes in vocational education. While vocational education in the past was asked to produce a workforce specialized in a certain profession, it is now expected to raise a workforce where a variety of functions are applicable to a wide

range of professions. Vocational education that teaches bureaucratic and uniform techniques is not suitable to the needs of the time any more.

Third, in order to cope with social change, vocational and technical education in both countries needs to refer to these principles. ① Vocational education should change its focus from work to the individual (person). ② Vocational education should focus on knowledge more than labor. ③ Vocational education should change itself in a way to educate a multi-skilled workforce rather than a mono-skilled one.

Fourth, it is necessary to present a new vision for vocational and technical education. Globalization and innovation in information and communication technologies necessitate a new paradigm centered on people. Vocational and technical education as an indispensable part of one's lifelong education will work as an effective instrument to realize peaceful cultural exchange, environmentally sound sustainable development, social cohesion, and the spirit of international citizenship.

The Chinese experience, on the other hand, gives Korea the opportunity to learn from the lessons outlined below.

First, by putting the same emphasis on vocational and technical education as on general education, China has raised public appreciation of vocational and technical education, and enhanced the adaptability of vocational and technical education to social change. This is characteristic of education in socialist countries. Centralized and uniform educational policy however, tends to ignore issues such as autonomy and aptitude of learners.

Second, vocational and technical education in China is divided into elementary, middle and high schools. In these schools, not



only vocational education, but cultural education is provided in accordance with the level of education.

Third, the special characteristics of a region and the local systems of autonomy of each area are taken into consideration in setting policies on vocational and technical education. China prevents conflicts among diverse races in its large territory by allowing political and administrative autonomy to each region and minority. Such a policy is reflected in vocational and technical education, and produces positive results. Korea has a system of autonomy of its own, if not as full-fledged as China's. Vocational education and training should take into account the situation of each region.

Fourth, China has diverse and open policies with regard to vocational and technical education. There are various institutions that take on vocational and technical education in China. The central government, local government, each department and committee, factory and business all have vocational and technical education programs operating according to their own needs. The duration of education also varies, ranging from several months to several years, with each business or institution etc. having its own recognition systems. Methods of education include interviews, correspondence, TV and so on. Education hours are flexibly organized such as full-time, part-time and space-time so as to increase the convenience for trainees.

Fifth, schools and factories for field training are established on the same site for effective vocational and technical education. In such education systems, theory and practice can be taught hand-in-hand, and economic profits can be made in the process of education.

Lastly, it should be acknowledged that the experiences and policies of the two countries can either benefit or raise problems for each other depending on the perspective. The vocational and educational environment of China has a socialist tradition, which is in-line with the country's socialist market economy. It is different from the one in Korea, which has a capitalist market economy system at its core. There are big differences in natural environments and cultural backgrounds between the two countries. Therefore the two countries should build their vocational and technical education systems according to their own environments and situations. Commemorating the 10th anniversary of the signing of a treaty of amity between the two countries, a large number of workers have come to Korea from China while Korean companies have moved to China in larger measure.

Positive exchange and cooperation between the two countries in the field of vocational and technical education will contribute to economic and social development as well as industrial development in both countries.

#### **IV. Suggestions**

Vocational and technical education in Korea and China should first expand its concept and evaluate existing policies. Based on this assessment, future policies should be established based on 5 year plans in order to meet the long-term (at least 10 year) prospects for the supply and demand in the labor market. Concerned parties as well as experts in vocational and technical education should be involved in the policy making process so as to produce a national consensus on policy. Legal and institutional

provisions should be made for policy procedures. Approaches that can be taken to policies on vocational and technical education in both countries are outlined below.

First, the concept of vocational and technical education should be expanded from the raising of a technical, skilled workforce to that of high quality scientific and technological workforce. In the process, the vocational ability of the nation will be improved so as to meet the needs of the time. Also, elements in vocational ability development should include human elements such as intellectuality, emotion and will, and morality and health, which have close relations with quality of life, performance of an organization or business, social welfare, economic development and national competitiveness.

Second, policies on vocational and technical education should be made every 5 years. After evaluating existing policies in the process of enforcement, the results of the evaluation should be linked to future plans with long-term prospects. In such a way, vocational and technical education will be able to actively cope with changes in the industrial environment, and constantly complement and revise existing plans.

Third, while the government should formulate policies on vocational education and education, experts, concerned parties, and private businesses should be involved in the decision-making process regarding policy making so as to ensure that VE policy, capable of meeting the labor needs of the private and public sectors, is implemented.

Fourth, by increasing administrative and financial support for vocational and technical education, effects, efficiency, and equality in the enforcement and outcome of policies should be enhanced.

Fifth, consistency, effects, and efficiency in policy should be maintained by making legal and institutional provisions for policy procedures in vocational and technical education.