The Current Situation and Issues of Industry Skill Development in China

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Ⅰ. Introduction

Nowadays, China's rapid development is attracting worldwide attention. Since Reform and Open-up Policy was initiated in the end of 1970s, China has undergone considerable reforms in various fields and embarked upon a large-scale modernization construction. The building of a socialist market economic system confirmed in 1992 particularly has accelerated free trade and attracted a large amount of foreign investment. And China's accession to the World Trade Organization (WTO) in 2001 has further promoted China rapid integration into the world economy. In terms of trade volume, China exceeded Japan and emerged as the third largest trade country after U.S. and Germany in 2004. As for GDP, China achieved $2.24 trillion in 2005, ranking fourth in the world (Japan External Trade Organization JETRO, 2007a).

Although China has become one of the biggest trading countries in terms of quantity, it is far from being a strong trading country. Currently, China's trade highly depends on processing trade which is more likely to be labor intensive. For example, the processing trade with Japan accounted for 59.2% and 45.0% of China-Japan export and import volumes in 2005 (Japan External Trade Organization JETRO, 2007b). Besides assembly of the household appliances and electrical equipments, textile manufacturing industry, light industry and agriculture which have contributed greatly to the general trade all require intensive labor work. The main reason for such a trade structure is that Chinese enterprises which are far inferior to foreign-owned enterprises in funds, technology, innovation and management capabilities have to rely on cheap labor as their greatest competitive advantage.

To change the situation and increase international competitiveness of the industries,

the Chinese government published a series of policies to invigorate China through science, technology and education. It is becoming increasingly clear, as Land (1989) earlier concluded that for China to improve its economic power, it must turn to focus on increasing investment in human capital. Under the circumstances, any work-related learning or training activity, namely 'skill development', which has much relevance to the demand of the industrial advancement of industry, has been increasingly added to the list of necessary and important national policy issues. However, the fact is that the base of skill development has not been so well-developed yet and there are still many problems in existing practices to be tackled. By the year of 2005, there are 4,791,227 technicians, presenting a decrease of nearly 6,000 as compared with 4,797,176 of 1990 （National Statistic Bureau［2007］）.And with regard to the skill workers, there are 70 million in total, accounting for half of overall industrial labor force. Among them, about one third of skill workers are those with medium- level skill, only 3.5% have acquired high-level skill. It is no exaggeration to say, we are witness to severe conditions or problems of the supply of technicians and skilled workers, whether in terms of quantity or quality.

This paper therefore mainly attempts to illustrate China's vocational-technical education and training (TVET) system and changes taken place in recent years. For this purpose, the author firstly gives a basic overview of the current TVET system. Then she indicates the policies concerning TVET at different periods of time and identifies the characteristics relevant to different policies so as to highlight the overall reforms and changes of China's industrial skill development. Finally, she points out some fundamental issues concerning the promotion of China's TVET.

Ⅱ. An Overview of TVET System in China

2.1 The Realities of Current TVET System

Since 1949, the Chinese government had begun to develop a public-owned, plan-controlled, centralized and unified TVET system which corresponded to the planned economy. Initially, the TVET providers were mostly from schools and appeared to be a kind of formal education. With socio-economic development, TVET has been expanded rapidly to cover various education and training fields in different studying levels. In more detail, the current TVET system has been strengthened by diversified

non-formal adult education and trainings but still with a particular emphasis on vocational school education; it has developed both junior secondary schools and tertiary institutions while the senior secondary leveled vocational schools as its backbone; it is dominantly provided by the public sector but private sector is more involved than ever before.

According to Figure 1, TVET can generally be said to be located in two distinct institutional settings: one is in formal schools which focus on offering knowledgeable training; the other is in various post-school or out-of- school vocational training centers which provide with practical and skilled training. The former includes lower and senior secondary vocational schools, post-senior secondary and college level vocational institutions. The latter one includes non-formal pre-employment training, OJT and reemployment training, etc.

2.2 School-based TVET

As in the general education system, there is a hierarchy in TVET system from the lower secondary up to tertiary level, consisting of various types of vocational schools.

At lower secondary level, Junior Vocational School is the only one type. It is included in 9-year compulsory education, and traditionally is located in the rural areas. Although it has had a relatively long history, development over the past few decades has not led it to be big-scaled. The number of this kind of school was only 335, and the enrolled students accounted for only 0.6% of total 600,885 junior middle schools in 2006. （Ministry of Education,2007）.

The backbone of the TVET is the senior secondary level which includes three types of schools: Specialized Secondary Schools (SSSs), Skilled Workers Schools (SWSs) and Senior Vocational Schools (SVSs). Both SSSs and SWSs, established in 1950s, were originally patterned after the Soviet Union model. SSSs, under the charge of the Ministry of Education, carry the responsibility for training skilled and management personnel in the fields of medicine & health care, educational professions, industrial technology, finance & economics, politics & law, etc., while SWSs, under the jurisdiction of the Ministry of Human Resource and Social Security, are designed to train manpower with knowledge and skills required for working in the manufacturing industry. SVSs which were set up and promoted in 1980s, serve a wide variety of fields in the service industry, such as commerce, information technology, legal

work, traffic service, etc.

Higher vocational education in China began to develop in 1990s through reorganizing some adult education institutions and promoting the existent senior secondary vocational schools. Advanced Skilled Workers Institutions (ASWIs), Junior Vocational Colleges (JVCs) and Vocational Universities are known as the main institutions to carry out higher vocational education. They give enrollment priority to students graduated from senior secondary vocational schools. At present, most of the colleges or universities offer two-year vocational education and training, only a few of them have bachelor's programs.

2.2 Out- of-School TVET

Non-formal vocational training comprises Employment Training Centers, enterprises-sponsored training centers, and non-governmental vocational training bodies. In the light of ownership, the training providers can be classified into public providers and private providers.

Employment Training Centers are undertaken by local Human Resource and Social Security Bureau and aim at training lay-offs, unemployed jobseekers, migrant workers and newly-entered laborers. In recent years, more and more private enterprises, social groups and individuals likely contribute to training manpower business. Private training centers are increasing rapidly. Because their operating expenses are depending largely on tuition fees from registered students, they cater to all those who can pay the tuition fees and offer a wide variety of programs to satisfy social needs. By contrast, enterprises-sponsored training centers are usually committed to constantly improving knowledge, skills and attitude to work of the employees inner their own enterprises. Nowadays, the need for ongoing technological upgrading has made it a pressing matter for these centers to foster multi-skilled and innovative employees for their parent enterprises.

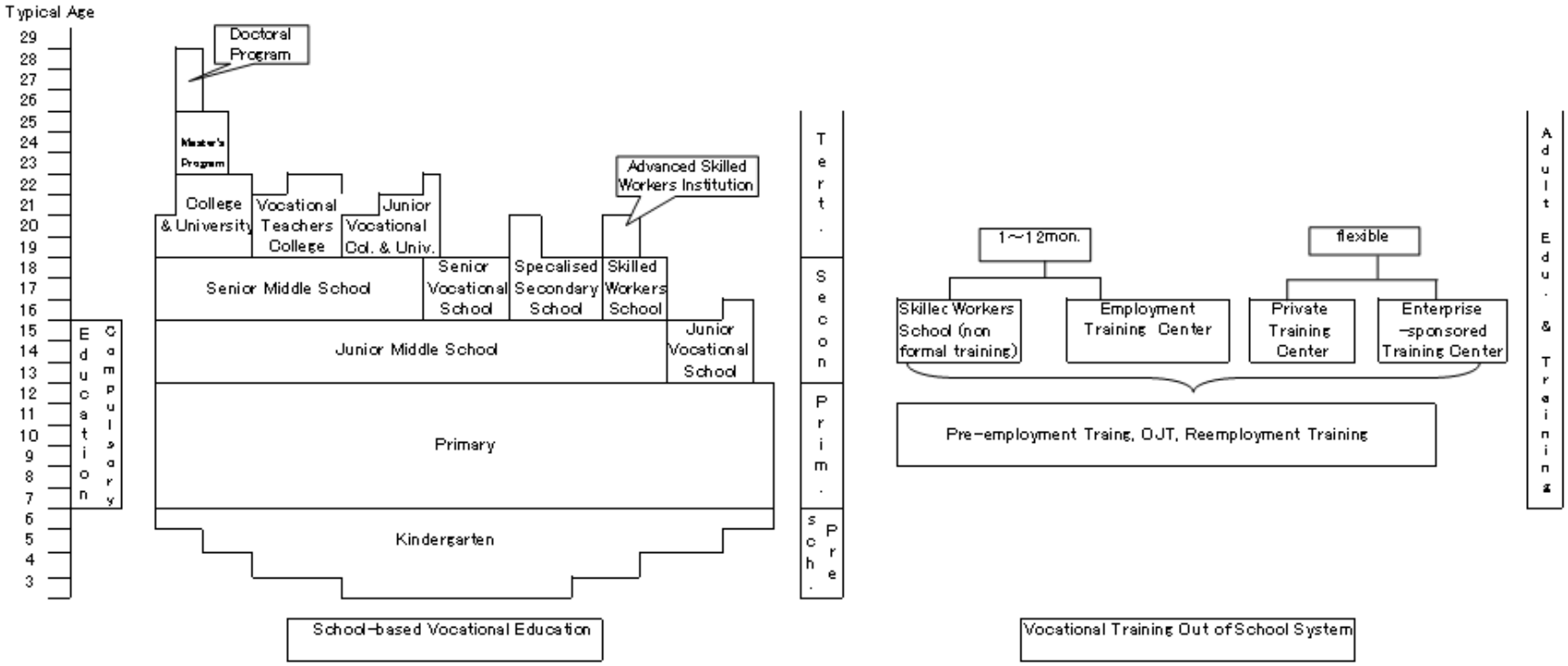

Figure 1. China's TVET System

Ⅲ. Reforms and Changes of China's TVET System

3.1 30 Years' Development and Its Backgrounds

After 30 years of reform and opening up, China's TVET has achieved substantial progress. It has become a system including formal vocational education at schools and various training opportunities outside school premise, and aiming to promote students' academic background and vocational qualification as well.

Over the past 30 years, TVET has witnessed much headway as well as major adjustments to align it with the socio-economic development. The overall development process of TVET can be roughly divided into two segments. The year of 1992 when China declared to transit to a market economy is the line of demarcation between these two segments. The former stage (1978-1991) is the restoration of vocational school education in TVET system under the socialist planned economy. The latter one (1992-) is the diversification and advancement of TVET during the shift to a market economy

Reform and Opening-up policies introduced in 1970s have significantly changed not only the economy, but also the TVET system. The reason is that the double-tracking education system which was fiercely criticized during the Cultural Revolution (1966-1976) was resumed and vocational schools once closed down were reopened and extended very quickly.

During this period, the most important task to the central government was to change the focus from class struggle to economic construction and hence called for considerable increase in the numbers of craftsmen and skilled workers. However at time, skilled workers were greatly prepared by the traditional apprenticeship system at state-owned enterprises or corporations which was not efficient. Under such circumstances, to promote the formal technical and vocational education provided within the state education system was gradually accepted as a relatively efficient and effective way to supply the manpower necessary to implement the vast economic development. Besides, there was the government's consideration that the expansion of vocational education at senior secondary level could help to reduce the enrollment pressure on general higher education.

Because of these reasons mentioned above, to increase the proportion of pupils entering vocational upper secondary education became the primary issue in restoring TVET, at least during the first stage. In 1985, "Decision on the Reform of

Educational System" was published. The policy pointed out that it is necessary to develop TVET as soon as possible and within five years, to increase the number of entrants of technical and vocational schools to nearly that of general educational schools at the senior secondary level. Some specific measures to implement this policy include ①expanding the enrollment of SSSs and SWSs; ②reorganizing general senior high schools into SVSs; ③setting up new vocational classes in general education schools（Vocational and Adult Education Division, the Ministry of Education [1988]、p.8）.Following the policy, a large-scale reform in the structure of secondary education was promoted. The enrolments in vocational education as a proportion of total enrolments in senior secondary education had a roughly 30% increase, from nearly 20% to 50% (Figure2).

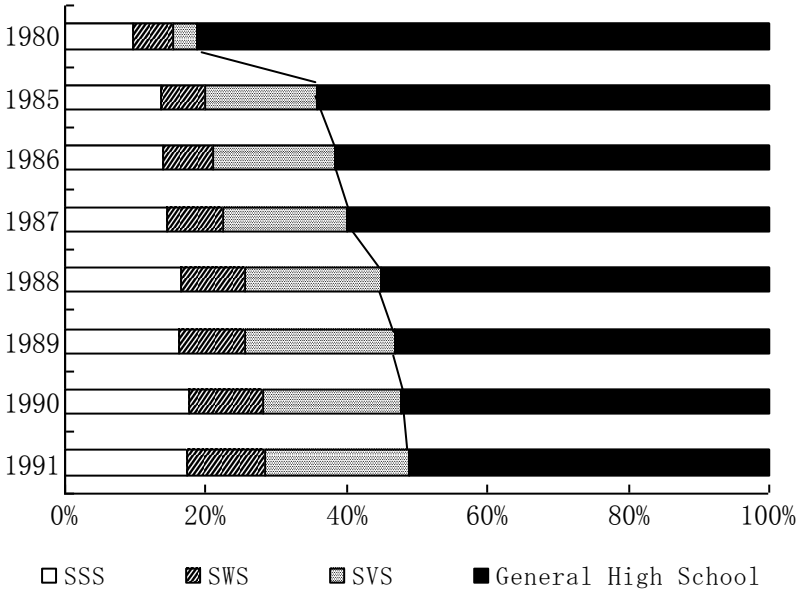

Figure 2. Changes of the Enrollment Ratios of General to Vocational Education at Senior Secondary Level

In the second stage, the TVET system was reformed in various aspects in accordance with the transition to a market economy. It has caused TVET enormous changes with a tendency toward diversification in providers, education and training levels, forms etc.

As the author has pointed out the development of TVET in the first stage had a focus on improving the school-based vocational education, in particular, the three types of senior secondary vocational schools. Compared with the TVET development with single

'core', TVET in the second stage has many new job training centers and higher vocational institutions springing up since 1990s, and the system has become more widely available.

Why these changes appeared in China's TVET? When we want to address the reasons, the factors like the acceleration of the shift in the global economy, major developments in science and technology, adjustment of the domestic industry, might be raised. Additionally, there are other causal factors listed below which should not be ignored.

First, the author thinks the expanding higher education policy promulgated in the end of 1990s is one of the major factors. Within the period of 1990-1998, the newly enrolled students at the higher education institutions increased at an annual rate 7.5%. But since the grand expansion policy began around 1998, newly enrolled students have increased dramatically. Between 1998 and 2001, the number grew to 2.5 million from slightly more than 1 million (Chinese Educational Information Net, 1999). The strong expansion in general higher education has affected the secondary education too. It has driven more and more students to continue their education at general high schools instead of entering vocational schools and the demand for access to upper secondary vocational education began to decrease. To change the situation, it is necessary to break the 'glass ceiling' on developing the area of tertiary level vocational education within TVET system.

Second, the growth of new laborers and layoffs led by industrial restructuring also has contributed to the reforms of TVET system. Due to the major adjustment of economic structure initiated in 1990s, the long-standing problems existing in the management mechanisms of state-owned industrial enterprises became too obvious to ignore. Many superfluous personnel were dismissed from the enter praises. In 2006, the newly added labor force in cities was about 25 million. Among them, around 9 million were new entrants, 4.6 million were temporarily left or were permanently laid off from their jobs, and 8.4 million were registered as absolutely unemployed people (The Japan Machinery Federation,2006) . From these data, it is clear that to provide with sufficient job training services for new entrants and unemployed laborers in particular is very urgent.

Third, the large-scale migration of farmers moving from rural to urban has led TVET to have an increasingly important role to play. After the mid of 1990s, the

regulations against regional migration appeared to be relaxed. It has caused a large number of rural surplus laborers flowing to the economically developed cities. For example, the number of rural migrant workers leaped to 0.17 billion in 2003, accounting for 34.9% of the overall rural population. Approximately 80% of these migrant workers had not received enough training, 18% of them stopped to pursue their studies beyond primary school（Chinese Migrant Rural Labor Training Net,2004）. The majority of migrant laborers have to work in low-skilled or physical-labor-intensive occupations.

To cope with such massive and poorly educated labor, it is important for Chinese government to create more opportunities of employment and offer training services which are based on their actual conditions. Till now, the short-term practical training programs may seem ideal for these much needed people. However, the existent public sector training is often not so sufficient to support their full access. It therefore does very necessarily incorporate private sector to enhance the TVET.

All these factors are having great influence on the government's TVET policies.

3.2 Two Important Policies About TVET

In the early-mid of 1990s, the government began to realize it necessary to develop tertiary vocational education. And for the first time, some key SSSs were permitted to set up classes to conduct a 5-year higher technical and vocational education. In March of 2000, the government document called "To Strengthen the Cultivation and Training of High-level Vocational and Technical Personnel" was published. According to it, the higher vocational education needs to improve its quality and strengthen the administration of student enrollment, curriculum and teacher training etc. The opportunities for secondary vocational school students to go for higher education have greatly increased. By the end of 2006, the new students and over-all enrolled students have jumped to 2.93 million and 7.95 million, 2.03 million and 5.98 million more than those of 2000 respectively（Chinese Higher Institution Information Net, 2007）. The rapid growth of higher vocational education, like a brake, has stopped the significant drop of student enrollment in secondary vocational schools which appeared after the middle of the 1990s.

Another extremely important policy concerning the development of TVET is "Decision on Promoting Vocational Education Reform and Development" published in 2002. It emphasized the importance of offering various training services according to different types of trainees. Simultaneously, this document gives an overview of

training project during the Tenth Five-Year Plan period. In more detail, this project plans to prepare 22 million graduates of secondary vocational schools and 8 million graduates of higher vocational institutions. Besides, it sets a goal to train a total of 50 millions of employees, 0.15 billion rural laborers and 3 million of lay-offs or unemployed people annually.

China's TVET system has been developed and become more diversified along with social and economic changes. Vertically, it has succeeded in linking with higher education, so that vocational education is not perceived as dead-end, and horizontally, more and more training programs have been provided both by public and private sectors so as to prioritize the disadvantaged people.

表 10-1. The Training Activities of Various Job Training Centers

	Num. of Centers	Num. of Trainees (Unit:10,000 persons)	
SWS(2005)	2,855	270.3	Pre-employment Training for Out-of-school Youth 20.3
			Layoffs and Unemployed Persons 46.0
			Migrant Rural Workers 48.2
			Employees 127.6
			Others 28.2
Employment Training Center (2005)	3,289	797.2	Pre-employment Training for Out-of-school Youth 72.8
			Layoffs and Unemployed Persons 340.9
			Migrant Rural Workers 262.7
			Others 120.8
Private Training Center (2004)	21,425	681.7	Pre-employment Training for Out-of-school Youth 98.8
			Layoffs and Unemployed people 159.1
			Others 423.8
Enterprise-sponsored Training	22,000	Around 3,000	

Center(2005)		

At present, various TVET bodies are supplying big quantity of education and training programs which have made the big-scaled trainee participation possible. Among these training bodies, the public Employment Training Center is playing the most active role in training lay-offs, unemployed jobseekers and migrant rural laborers(Table 1) . It reflects the government's concern about surplus labor and its great effort to facilitate the expansion of the training and employment-generating opportunities.

Here, a fundamental change of SWSs is worthy of remark. SWS, is gradually shifting away from the image of a merely formal school education as it used to be, and toward a more open training body so as to orient itself to social needs. This change of SWSs is accordance with the diversification process of TVET system.

Ⅳ. Conclusions and Issues

In general, China's TVET has experienced from a mere development of secondary school based vocational education to a diversification in training programs, level of education and sponsors involved through open, thorough and efficient approaches.

Although China's TVET has achieved such big progress, it is still suffering from resource constraints which have given the challenging issues of the quality assurance and equity access of TVET. As an example, in 2004, per capita annual cost of training in public Employment Training Centers was only 170.5 Yuan (about 22.6 U.S. dollars), and only 62.4% of trainees succeeded in finding a job, unemployment still remained high. And with regard to the trainees' acquirement of skill qualification in the same year, among all the trainees in Employment Training Centers, the acquiring rates of primary-level, medium level and advanced level were 30.1%, 8.9% and 1.3% respectively, more than half of the trainees did not get any qualification (Ministry of Human Resource and Social Security, 2005).

On a parallel with the of quality issue, market-oriented reforms introduced in TVET sometimes have had minus impact on equity of education. Nowadays, vocational education is more likely to be the secondary option of a child in urban areas, but a track to which more and more rural children are directed. According to China' Labor

Statistics issued, only a few of rural children were enrolled in SWSs before 1995, but in 1996, the number of rural students was increased to one third of the overall new enrollment, and then in 2004, the rate rose to 60%. Students majoring in the specialties which might be related with dirty, dangerous and sweaty occupations are usually from poor rural families. Other data also have supported the view that urban-rural differences as well as gaps between students based on their family background and income are widening the education gap and distinguishing the children. Children from urban households of middle and high relative wealth tend to choose academic track, while children from rural families especially with low socio-economic status have to follow the vocational track or enter the labor market directly after compulsory education. Education itself now is becoming a tool of reproducing social and educational inequality. Undoubtedly, it posed another big issue for Chinese government.

With more severe international competition expected in the near future, it is necessary for Chinese government to exert all its effort to facilitate the improvement of TVET system continuously. The government should reform TVET system to adapt to the market economy. Simultaneously, it should not forget its responsibility to secure broad access to a high quality TVET. Vocational education should not promote inequalities within the educational system and social inequities. This requires the government to take into consideration of balancing between public good and service at market conditions. In the author's view, to make adequate allocation of resources for TVET should be a long term policy for Chinese government.

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