

A Comparative Review on Chinese Vocational Education and Training System

Xi Yu [1]

[1] yuxxx637@umn.edu
University of Minnesota
Email: yuxxx637@umn.edu
Address: 125 Peik Hall, 159
Pillsbury Dr SE, Minneapolis,
MN 55455

ABSTRACT

This study described China's vocational education and training (VET) system, and analyzed various challenges that the system is in face with. It demonstrated the reforms that are undertaken including policy transfer and borrowing attempts from the German Dual System, Singaporean vocational model, and the U.S. Career and Technical Education (CTE) system. Due to China's unique geographical, cultural, political and economic conditions, it is not feasible to transform Chinese vocational system through adopting models from other countries. However, elements of the foreign models can be adopted for future reforms on China's VET system. Also, efforts and support from governmental policy-making and academic research are needed. In addition, transnational and global cooperation with vocational institutions from overseas needs to be continued in the future under the trend of globalization in order to collaboratively overcome barriers and increase high-skilled workforce in global labor market.

Keywords: *vocational Education, training System,*

INTRODUCTION

In China, vocational education and training (VET) is mainly conducted and managed by the Ministry of Education (MOE) and the Ministry of Human Resource and Social Security (MHRSS); and has been playing an important role in domestic development and economic growth (MOE, 2005). It is important for China to develop vocational education, because China's workforce is mainly facing with two problems including low quality and a shortage of skilled workforce. These problems have negatively affected China's economic development and innovation, resulting in low quality products, high energy consumptions, and high rate of industrial accidents (MOE, 2005).

Problem Statement

In 2005, MOE announced the plan to develop hundreds of new qualified vocational colleges to improve China's vocational education. Over the past decade, China has made efforts to learn from several countries including Australia, Germany, Canada, and the United States for guidance (MOE, 2005). To better meet the need of economic development, China has been actively engaged in global cooperation and exchanges in the field of vocational education. Chinese government has sent delegations to over 20 countries where vocational education is well-developed and explores their characteristics to learn successful experience. At the same time, China has also invited foreign professionals to deliver lectures in China on advanced technology in various fields, and sent invitations to other countries' vocational education institutions to establish joint projects in order to promote vocational education systems in China (MOE, 2005). However, there is no synthesized review on effectiveness of the lessons learning and policy borrowing practices for Chinese VET system from foreign models. Therefore, for this paper, a synthesized review will be conducted and recommendations for future reform will be provided based on this review.

Purpose of The Study

The purpose of this study is to review and analyze the current and potential policy borrowing practices on China’s VET system from foreign models. This paper describes the VET system in China as well as its challenges for future development, especially under the extraordinary trend of globalization. The analysis is focused on the current reforms and effectiveness of policy transfer and borrowing from other national systems, including Germany’s dual systems, the Singaporean model, and Career and Technical Education (CTE) system in the US. Based on this comparative analysis, the paper next discusses the future trends and the impact of potential reforms on China’s VET system in global labor markets. This paper provides recommendations of China’s VET system development from transnational level, policy-making level, and academic level. The findings of this study may also drive further research efforts and attract attentions on skill improvements of Chinese workforces and VET system reform under the waves of globalization.

Research Question

Based on the problem statement presented above, the research questions of this review are: What policy borrowing and practice transferring have been undertaken for China’s VET system from foreign models? What recommendations can be provided for future reforms for Chinese VET system?

Literature Review

Vet System in China

In China, vocational education and training refers to technical education and skills training provided by various programs, including pre-employment programs, job transfer programs, apprenticeship programs, on-the-job training programs, and certificate programs (Yan, 2010).

China’s education systems consist of multi-level general education, vocational education and training system, adult and continuing education, and special education (Cooke, 2005) (see Table 1).

Table 1. China’s Educational System

Levels of Education	General Education	Vocational Education and Training
Tertiary Education	Universities <ul style="list-style-type: none"> • Undergraduate studies • Graduate studies • Post-doctoral studies 	<ul style="list-style-type: none"> • Polytechnic colleges • Specialized junior colleges • Technician colleges
Higher Secondary Education	<ul style="list-style-type: none"> • General senior high schools 	<ul style="list-style-type: none"> • Specialized high schools • Vocational high schools • Skilled worker schools • Adult specialized high schools • Short-term courses of various types
Lower Secondary Education	<ul style="list-style-type: none"> • General junior high schools 	<ul style="list-style-type: none"> • Vocational junior high schools • Short-term courses of various types
Primary Education	<ul style="list-style-type: none"> • Primary schools 	
Pre-school Education	<ul style="list-style-type: none"> • Pre-schools 	

Source: From “Vocational and enterprise training in China: Policy, practice and prospects,” by L. F. Cooke, 2005, *Journal of the Asia Pacific Economy*, 10(1), p. 26–55.

On the tertiary education level, formats of vocational education and training include polytechnic colleges, specialized junior colleges, and technician colleges, which run 2 to 3 years (Table 1). On the higher secondary education level, the main formats include specialized high schools, vocational high schools, skilled worker schools, and

adult specialized high schools as well as short-term courses of various types, which run around 3 years. In the lower secondary education level, the main formats of schools are vocational junior high schools as well as some short-term courses of various types, which also run around 3 years. There are no schools or courses on the primary education level or pre-education level for vocational education (Cooke, 2005).

Vocational education and training is a key component of the entire educational systems in China. However, the VET system is viewed as a weak area in the current educational system, which attempts to become an effective and balanced system, especially after reforms of compulsory education and expansion of higher education in recent years (Yan, 2010).

Challenges of China's Vet System

Effects of Globalization. Salmi (2000) described globalization as a complex integration of capital, technology, and information across national borders. Workforces in labor market are becoming more and more competitive in the global economy. Hinchcliff (2000) indicated that the impacts of globalization enhance the challenges for vocational education and training systems.

In the global economy, advanced technology and new information systems promote a knowledge-economy environment (Salmi, 2000). However, China needs a large number of skilled and knowledgeable workers who receive internationalized education to prepare to compete in the world markets (Jie, 2007). The new market economy has increased the need for improving vocational education and training systems in China (Zhang, Hu, & Pope, 2002).

Employer's Low Expectations. Currently in China, industrial organizations do not tend to cooperate with vocational education and training programs. Economic burden and development mainly depend on state-owned enterprises in China due to historical reasons (Liu, 2001). These organizations can easily get access to skilled workforce in the labor market because of related policies and imbalanced supply and demand facts in the labor market (Liu, 2001). Therefore, enterprises and employers do not even need to be dependent on vocational education and training systems for workforce supply sources and training, and are not aware of the importance of VET systems in China nationwide.

Public Perceptions. The Central Institute of Career and Technical Education (CICTE) (2009) reported that one of the most important challenges for Chinese vocational education is the public's negative perception on vocational education. Chinese people traditionally perceive higher education positively, but have negative perception on vocational education. Most Chinese parents are likely to send their only child to a higher education institution, which makes the vocational education school always as a last choice. They are willing to make significant financial sacrifices to support their children's academic achievements in the general education system. As a result, vocational schools have difficulty attracting students and gradually lose their motivation for improving the quality of teaching (CICTE, 2009).

Quality of VET. The quality of vocational education in China is currently not meeting the needs of labor market. The reasons of low quality of vocational education are various, including shortage of funding from government and imbalanced development between regions in China, as reported by the Central Institute of Career and Technical Education (CICTE) in 2009. And also, out-of-date curriculum design and less skilled teachers in vocational schools cannot fulfill the needs of advanced knowledge training in the changing environment, which also plays a negative role in improving quality of VET system (CICTE, 2009). China needs to increase the quality and professional level of vocational education in order to respond to the impact of globalization on the competitiveness of product quality. In addition, articulation of VET system is not well established in the entire education systems. There is a weak link between vocational education and general education (Liu, 2001).

Reforms: Policy Transfer and Global Cooperation

China's attempts in global cooperation and policy transfer from several countries are discussed in this part of the paper, including Germany's dual system, the Singaporean's VET model, and Career and Technical Education programs in the US. Generally, China benefited from these countries' VET systems, but at the same time the policy transfer process encountered a number of significant barriers. For example, the collaboration between policy makers, professional consultants, business representatives and members of development organizations plays a significant role in the effectiveness of policy transfers; and it is difficult to achieve satisfaction (Barabasch, Huang, & Lawson, 2009). In addition, cultural incompatibilities could also impede the policy transfer process (Barabasch et al., 2009).

German Dual Systems. The German dual education system combines apprenticeships in a company and vocational education at a vocational school (Ochs, 2006). The system is based on participatory-based extensions for full-time education, apprenticeships, and socialization (Ochs, 2006). One major advantage of this dual system is that it integrates real-world experience into theoretical learning and teaching in vocational schools and industrial (Blossfeld & Stockmann, 1999). China introduced related training and workshops programs based on this German model in collaboration with German scientists and major education and development agencies (MOE, 2005).

According to the analysis by Barabasch et al. (2009), there are several major issues and differences between the German dual system and China's VET system. (1) Roles of government. In Germany, the VET system is more centralized and standardized. The federal government plays an active role in legislation and in collaboration with state governments. In China, however, provincial governments have significant autonomy in developing legislation for vocational education. This is due to the vast territory of the country, and cultural differences and differences in levels of economic development between regions (Barabasch et al., 2009). (2) Training providers. In Germany, the main training providers are schools and companies, which support and consult each other in developing training contents. However, in China, the training providers are more diverse and complicated, and include public vocational schools that are funded by the government, and private providers that mainly train students for qualifying exams. The relationship between different providers is more competitive rather than collaborative in China (Barabasch et al., 2009). (3) Vocational certification requirements. In Germany, secondary school graduates who do not enter universities usually pursue vocational education, and are required in most states to continue in part-time education. Low-skill job workers with vocational degrees are offered fair levels of pay. Therefore, learners are willing to obtain a vocational degree as a necessity for employment. However, in China, formal vocational education is not required, and the vocational certificate systems are not well established. Employers do not require job applicants to hold a vocational degree or certification for employment either, which hinders the development of China's VET systems (Barabasch et al., 2009). (4) Structures of VET systems. The German systems provide full-time vocational training after general education focusing on apprenticeships, but the Chinese VET system is a system with multiple levels where students can start vocational training parallel to general education (Barabasch et al., 2009). (5) Transferability of qualifications. In Germany, the credentials are transferable to a higher education program under government regulations. But in China, it is almost impossible to transfer from vocational schools to higher education (Barabasch et al., 2009). (6) Geographic and economic issues. China's geographic and economic conditions are unique. China's large territory makes the VET systems diverse and complicated. Also, the uneven economic developments between urban areas and rural areas make it more difficult to establish a united VET system, especially the literacy education gap has not been overcome yet in some rural areas. Many employers try to fulfill the low-skill jobs and do not want to invest more money in training (Barabasch et al., 2009). (7) Cultural incompatibilities. Cultural factors are playing major roles too, including the differences of culture, traditions, knowledge structure, teaching methods, and curriculum design. It is very difficult to transfer German's vocational education systems completely to China without cultural adaption (Barabasch et al., 2009).

Singaporean VET System. Singapore's VET institutions focus on training workforce at the primary and secondary levels for the booming manufacturing sectors under the supervision of the government's Vocational and Industrial Training Board (VITB) (Yan, 2010). The institutes of technical education specialize in training skilled technicians and professionals; and the polytechnics specialize in training technologists and middle-level professionals (Yan, 2010). The Singaporean model has been introduced to many developing countries (Yan, 2010). In China, two China-Singapore joint projects, the Tianjin Eco-City project and the Hangzhou Science and Technology Park project, have been developed (Yan, 2010).

The Singapore's VET system works better in China, because firstly, there is fewer language and cultural barriers (Yan, 2010). Seventy percent of population in Singapore is Chinese, and the official languages are Chinese and English in Singapore. China and Singapore have various connections in different fields. The two countries also share a lot in common in cultural beliefs and traditions, which makes the transition of Singaporean VET system to China easier (Yan, 2010). Secondly, Singaporean expertise and their professionalism are reliable and respected by Chinese education scholars and administrators, and there has been a history of collaborations between China and Singapore in education fields, which also includes the cooperation in vocational education fields (Yan, 2010).

US Career and Technical Education (CTE). Career and technical education in the US covers a variety of major fields such as agriculture, trade, industry, business, marketing, families and consumers, health occupations, public safety and security, and technology (Hou, 2010). Since early 1980s, American education agencies and professionals and China education associations have been working together on mutually beneficial projects (Hou, 2010). For example, a US-China Education Foundation was formed by US vocational professionals to promote Western-style vocational education in China (Hvistendahl, 2008). In May 2008, China Education Association for International Exchange (CEAIE), associated with China's Ministry of Education and runs more than 1,000 vocational and technical

institutions in China, started to work with American Association of Community Colleges (AACC) on the programs of leadership development and training, market-oriented curriculum design, and networking building practices for senior leaders and Chinese college administrators (Hvistendahl, 2008; Hou, 2010). In addition, Hvistendahl (2008) reported that American postsecondary education institutions have been providing programs and models in China. For example, the University of Oklahoma has established a partnership with a technology institution in Zhejiang province in order to help make college students more competitive in job market (Hou, 2010).

However, it is still not feasible for China's vocational colleges to transfer US model, due to many challenges; for example, the most significant challenge is that Chinese market model is still under transition from a planned one to a free-market model, so that it is difficult to reform the vocational system in China to satisfy the local labor market's needs (Hou, 2010). Therefore, so far the collaboration between US vocational system and Chinese vocational education is basically to develop joint-venture projects between US and Chinese institutions (MOE, 2005). In addition, the barriers of public negative perceptions toward Chinese vocational education and low levels of vocational teachers' professionalism also need to be solved in order to make the cooperation with US vocational schools go smoothly (Hou, 2010).

DISCUSSIONS AND IMPLICATIONS FOR FUTURE RESEARCH

Based on the discussion above, it is obvious that although China has benefited from other countries' VET systems, advanced technology, and professional programs, Chinese VET systems cannot merely borrow a complete model from foreign models without adjustment. In this section, implications for future development of China's VET system will be discussed at three levels: transnational level, policy-making level, and academic level.

Transnational Level

China has started to reform its vocational education system by engaging in international cooperation and exchange in vocational education in order to adapt to globalization trends in modern education. VET joint ventures with other national education agencies are strongly recommended for Chinese VET system development. However, it is also recommended that the Chinese government should keep control over these joint venture partnerships to ensure they fit Chinese conditions and characteristics. Li (2005) reported that there are certain principles related to Chinese characteristics that need be considered for the cooperative development of vocational education, including corresponding with economic development nationally, abilities of solving and reducing unemployment, establishing an environment of involvement with corporations and businesses, and seeking diverse funding sources.

Policy-Making Level

First, Chinese government need to take more responsibility for improving prestige of vocational education among public perceptions. Philosophical change need to occur at multiple levels to improve perceptions of vocational education among employers, students and their families.

Second, Chinese government need to encourage the businesses' recognition of vocational degrees and try to develop a new model to make vocational education transferable to general education. Education system needs to manage to combine academic with vocational education and leaves options to pursue higher education open (Yu & Wu, 2005). If students in vocational schools have the possibility to go for further study in university, it will not only attract more talented students, but also the vocational schools students will pay more attention to academic study. Also, aligning academic institutions and vocational institutions is a good way to bring high quality teachers from academia to vocational education fields (Sun, 2010). There is a need for more effective links between vocational education and general education in China.

Third, vocational education need to involve enterprises, especially large enterprises, in pre-employment training and establishing an employer-led system that assesses employers' perceptions on skills demands and vocational education. Large enterprises usually have technology, experts, and budgets to train their staff or potential staff for the skills in demand (Haddad, 1997). In this way, the vocational training would be more effective if enterprises as potential employers could train students in real-world settings as part of the curriculum, and place the students in jobs where they can use their skills.

Academic Research Level

The increase in attention to vocational education development should be related to an effort to address the previous academic shortage in research on Chinese VET system. Several key research directions will play a critical role in developing vocational education and training inventions.

First, further research could focus on vocational education graduates. There is a shortage of research on vocational education graduates' lived experiences and career pathways (Sun, 2010). Understanding graduates' or current students' perceptions will be important in understanding the main barriers and challenges in vocational education systems.

Second, further research is needed on technical training and education curricular. It is a tough task to improve the quality of curriculum design in vocational schools. It is shown that vocational schools and students tend to ignore the importance of academic knowledge and the transferability between academic knowledge and technical skills (Sun, 2010). More future research should be conducted on how to design hybrid and effective curricula combined with academic and technical knowledge.

Third, it is essential to promote lifelong learning on vocational education through research-based evidence from academic efforts. Lifelong learning is a relatively new concept and trend in Chinese vocational education. It is an integral component of skill formation. It involves a drive between sectors within multiple options within educational systems, and it also creates a knowledge-based learning environment for learners to improve their knowledge and skills throughout working lives.

CONCLUSIONS

In this paper, China's vocational education and training system is described, as well as various challenges to this system. It demonstrates the reforms that are undertaken including policy transfer and borrowing from the German dual system, Singaporean vocational model, and the U.S. CTE system. Due to the country's unique geographical, cultural, political and economic situation, it is impossible for China to uncritically adopt models from other countries. However, elements of the models can be adopted. Future supports from governmental policy-making reforms and academic research needs to be developed. In addition, global cooperation with foreign vocational institutions needs to continue in the future under the trend of globalization.

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