

# Chinese Vocational Education and its Relevance to German Counterpart Education System

Li Xu, Li Cheng

*Shanghai Second Polytechnic University, Shanghai, China*

**ABSTRACT:** In view of recent development in Chinese higher vocational education, the economic structure changes trigger off the expansion of the vocational education reform. And a comparison with corresponding developments and discussions both in China and in Germany may be appropriate. Germany has a ‘dual system’ of vocational education and training, which is admired by many other countries and would like to use for reference. Can this model be simply handed over? This article will scan the Chinese vocational education system and its features as well as the cooperation between China and Germany on vocational education. German vocational education system features also be generally introduced. The conclusion suggests that the transfer requires more than simple copying German education model. It needs to be adjusted according to Chinese social, cultural and economic requirements.

**KEYWORD:** Higher educational reform; German vocational educational system; Dual system education

## 1 INTRODUCTION

The fast development of economy and the integration into the world market of China lead to the demand for more skilled and professional workers. Especially China now intends to shift from mass production to quality production and want to change its position in the world industrial chains. The cultivation of mass skilled and competent labor force requires the reform of the vocational education system. China is looking for an effective vocational education and training system to address the dramatic mismatch between the young graduates’ unemployment and vacant job positions which require qualified applicants.

According to the market demand, Chinese government expanded the scale of vocational education, which can be shown in the following tables:

Table 1. Number of Secondary Vocational Students Admitted and in School since 2005. (Unit: million)

	2005	2006	2007	2008
Admitted	6.557	7.314	8.100	8.121
In School	16.001	17.644	19.870	20.871
	2009	2010	2011	2012
Admitted	8.685	8.681	8.139	7.541
In School	21.952	22.318	22.053	21.137

SChinesece: Zhongguo jiaoyu shiye tongji gongbao [China Bulletin of Education Statistics] 2005-2012

Table 2. Number of Higher/College Vocational Students Admitted since 2005. (Unit: million)

	2005	2006	2007	2008
Admitted	2.681	2.930	2.838	3.106
	2009	2010	2011	2012
Admitted	3.134	3.105	3.249	3.148

SChinesece: Zhongguo jiaoyu shiye tongji gongbao [China Bulletin of Education Statistics] 2005-2012

The past few years see the most favorable conditions for Chinese vocational development. In 2005, China issued the Decision of the State Council of Vigorously Develop Vocational Education and the latest two successive governments all advocate the promotion of vocational education.

Since 1980’s Chinese vocational education system is highly impacted by the German vocational education system. And a comparison with corresponding developments and discussions both in China and in Germany may be appropriate. Germany has a ‘dual system’ of vocational education and training, which is admired by many other countries and would like to use for reference. Can this model be simply handed over? This article will scan it and suggest that the transfer requires more than simple copying such education model. It needs to be adjusted according to Chinese social, cultural and economic requirements.

The article arranged as following: the first part is a general introduction of the research background

and its significance. Then the Chinese vocational education system and its features will be analyzed. Then the cooperation between China and Germany on vocational education will be followed. The third part will concentrate on the counterpart content in German vocational education system. At last the comparative analysis and conclusion will be conducted.

## 2 THE VOCATIONAL EDUCATION SYSTEM IN CHINA

### 2.1 *Historical review and basic elements*

Historically, Chinese education has been deeply influenced and dominated by Confucianism, which emphasizes the social hierarchal structure. An ideology like this presumed that artisan and merchant were inferior to govern officer/scholar, farmer regarding their social status. Vocational education played a negligible role in such circumstances. And the vocational education was truly developed after Chinese reform and open up started in 1978. The chief designer of Chinese reform and open up, Deng Xiaoping, insisted that Chinese development should be based on empirical practice and be flexible. The goal of vocational education was firstly stated in the China Education Yearbook of 1984: the tasks of secondary vocational education were cultivating qualified primary and middle-level technical workers as well as teaching them basic knowledge of culture and science. (Guo & Lamb, 2010)

In 1985, the Decision of the Central Committee of the Communist Party on the Reform of the Education System was declared, worked as the most important policy support for the restructuring of the vocational education system. It laid out the five-year goals for Chinese vocational education development. And in the following, the vocational high school, besides secondary specialized schools and worker's training schools, was introduced into the education system. This new vocational institution was transformed from the existed general high schools. And in 1999, another form of vocational school, the specialized secondary schools for adults, was introduced. And the secondary vocational education system was composed as: secondary specialized schools, workers' training schools, vocational high schools and secondary specialized schools for adults. Furthermore vocational and technical colleges were also on the schedule of the 1985 decision.

But in the following year, many problems occurred in this system. Such as the vocational high schools, because of the lack of the qualification approval and control methods, many local authorities just simply chose the least competitive high schools and let them transform to vocational high schools. Support for the reform of such schools' teacher,

curriculum and equipment was rare. These schools were less attractive since the beginning. So the quality of vocational education was poor. Following the expansion of general higher education in 1999, the condition for these schools became worse and many of them closed down. (Zhao & Feng, 2003)

With the fast economic development and reform, many state owned enterprises were on the way of decline. And many secondary specialized schools and workers' training schools, which used to connect tightly with such enterprises, were also on the wane. They were stripped away from their cooperated industries and companies-most of these companies were state owned. They became less attractive and the candidate students' pool narrowed down dramatically. However, the vocational high schools, which had academic diplomas issued by the Ministry of Education, promised the entrance qualification for vocational and technical colleges. They were more popular than workers' training schools. But the education quality of vocational high schools still remained poor. It resulted in the systemic failure of Chinese middle-level vocational education.

As to the higher level of vocational education, the vocational and technical college was also confronting the problem of inefficiency. These colleges were referred as postsecondary education. They were the bottom line of the higher education system. Their performance indicators were similar to the general higher education institutions and seldom had distinguishing features. The students of these colleges could enter the general college or comprehensive university via entrance examination. The curricula and teaching of these vocational colleges tended to be general knowledge focused. (Sun & Wang, 2007)

Generally speaking, the vocational education system in China has been marginalized via the restructuring. At the moment of China's economic and social transmission, such phenomena will do no good to China's industrial structure upgrading.

### 2.2 *Influenced by and cooperated with Germany; reforming*

Actually, Chinese vocational education is highly influenced by the so called western vocational education philosophies. And various foreign philosophies have been adopted to drive this country economic development forward.

After 1949, the social and economic reconstruction was the first priority on government's agenda. Out of the demand of qualified workers, the vocational education philosophy used the one from Soviet Union as reference. It paid great attention on materialist, i.e. heavy industrial products were most important. But the development was interrupted by the political deterioration between China and Soviet

-Union and the following ten-years Cultural Revolution.

And since Chinese reform and opening up, the government began to shift the whole country on the track of economic development. And in 1979, the government sent a delegation group visiting developed countries such as U.S., Great British and Germany to learn from these countries. And in 1980, the director of the National Economic Commission, Yan Baohua, visited the Federal Republic of Germany, and found that German vocational education was efficient and contributed a lot to German resurging. Then two Peking University instructors were sent to Germany and the vocational dual system was introduced into China. From that time on, Germany became the only one that cooperated with China at the government level regarding vocational education.

In 1983, the first cooperative vocational education program between China and Germany was opened at the Nanjing Institute of Architecture. Then there were more than thirty cooperation programs in this field conducted by China's Ministry of Foreign Trade and Economic Cooperation and the German Ministry of Economics and Technology. Germany also lent and donated quite amount to help the establishment and reform of China's vocational education. (Wang & Jiang, 2013)

In 1990, Germany assisted China building up three vocational education development research centers: the Central Institute for Vocational and Technical Education in Beijing, Vocational Education Research Center in Shanghai, and another in Shenyang. And 1994, the then Vice Premier Li Peng and German Chancellor Helmut Kohl signed the documents which aimed at strengthening the cooperation on the vocational education. This bilateral agreement acts as the framework for the cooperation between these two countries. And in 1997, Tongji University cooperated with Germany conducting projects about vocational teacher training. There are also vocational education doctoral programs in China, the first one was held up at East China Normal University. (Wang & Jiang, 2013)

China transfers the experience of German vocational education, not simply replicates it. At the same time, China also pays great attention to study the specific situation of China, and learns from Switzerland, Australia, Great British and America. Chinese vocational education curriculum is competency-based model, which mostly makes reference from other advanced countries rather than German dual vocational system. And China's vocational education curriculum introduced the International Labor Organization's Modules of Employable Skills, which is the direction of German dual system reform starting since about 2005. (Hummelsheim & Baur, 2014)

With the development of world economy and globalization, German vocational education system is also under constantly adaptation and modernization. The following will introduce the German vocational education system and its main features as well as its challenges and solutions.

### 3 GERMAN VOCATIONAL EDUCATION SYSTEM

#### 3.1 Historical review and basic elements

German vocational education can be traced back to the Middle Ages. Its apprenticeship system is synonymous to its now dual apprenticeship system, both combining on-the-job and off-the-job training and education.

The German dual vocational education refers to the two learning sites: the apprenticeship working places and the part-time vocational schools. It's in the schools where the theoretical knowledge about work and other general knowledge such as language and mathematics are taught. Its basic elements are shown in the following:



Figure 1. The basic elements of the German vocational education system..

In the late 19<sup>th</sup> century and in the middle 20<sup>th</sup> century, several provisions and regulations were declared by Germany, served as the backbone of German vocational education system.

From 1945 onwards, the dual system became the main pillar of German vocational education. But it was not integrated into German general education system until 1970s.

The reform and debate for German dual system structural change have been occurred in three distinctive periods in the past several decades: on in the 1970s, another in the 1990s and the latest one began in about 2005.

The arguments about dual system were driven by the Vocational Training Act, which was declared in the 1960s. The debates mainly focused on the

enterprise financing mechanism. The related enterprises must decide their vocational training activates without the public support. (Winterhager 1970) It also paid attention to what should do if the trained workers betrayed the contract and how to ensure the investment return of the related enterprises. There were also suggestions about collecting the training funds by an agreed levy system. But finally because of the worrisome about the system's efficiency and bureaucracy, such design was rejected.

And the discussion in the 1990s was generally about the modernization under the conditions of the world international development and German reunification.

Due to the globalization, many new sectors develop. The challenges that German vocational education faces was how to efficiently train workers for the service sector. And for the students' long-run development, some flexibility should be included in the vocational education system. How could the system differentiate via modularizing? After several years the performance of the German vocational education system proved to be quite efficient and robust.

The most recently round of discussion about the German vocational education system is focused mostly on specific issues, such as how to solve the mismatch between the apprentice candidates and the demand of the related enterprises. The statistics showed that in 2011, about 77,000 candidates applied for apprenticeships were rejected, while in this year, there were about 35% of the training places being offered unfilled, or partially filled. Most of these vacancies were from SMEs (small and medium enterprises). (Hummelsheim & Baur, 2014) It's also caring about the candidates gender segregation problems and the qualification standard of the participating enterprises. At the same time fundamental efforts are made to ensure that vocational education certification is equivalent to general education degree.

Generally speaking, these discussions and debates help the German vocational education system adapt more efficiently to the needs of economic and social development.

### 3.2 *Main features of the German vocational education system*

The German vocational education for the apprentices is mainly conducted both in workplace and at training school. This dual system contributes a lot to German development. With such a successful vocational education system, Germany is famous for its stable transition from the vocational school to real work. And Germany also has a lower youth unemployment rate than other OECD countries. A main factor contributing to this success is the close

cooperation between German enterprises and training schools. The quality of workplace learning is assured. The dual system has a long history in Germany. The mix of workplace internship and school learning prepares the apprentices for various vocations with high-level skills.

The main feature of the German vocational education can be concluded as: high social acceptance of the related standards, support from legal provisions and regulations, high participating rate of young people, the smooth transition from the training system to continuous employment, highly flexible and robust to the ever-changing world and the incurred low unemployment rate and economic well-being.

## 4 COMPARATIVE ANALYSIS AND SUGGESTIONS FOR CHINA

### 4.1 *Comparative analysis*

We can derive some major differences between the China and Germany vocational education through the above description and analysis. The key to understand the difference is German vocational system is occupation-orientated, while China is competence-based and output-orientated.

In German vocational education system the typology is of great significance for labor mobility. The criterion of for such education is occupation, which is how to assist recruiting and promoting apprentices. While in China the link between vocational education and occupational opportunities is looser. German vocational education bases on the concept of occupation. The apprenticeship leads directly to vocations people intended or recruited. The binding professional standards ensure the qualifications are highly transferable to a labor market that is occupationally structured.

China, by contrast, follows a different strategy, on that pays more emphasis on general standardization and is more output-oriented. The cooperation between vocational schools and enterprises is loose. There is low employer commitment.

The root of these differences can be concluded as the distinguishability between these two countries. German system is demand-led apprenticeships which are characterized by high employer participation and commitment. The employers are willing to provide training places and training classes. While in China the vocational education is organized and managed by the government. It's supply-led school education.

But nowadays, the employer commitment in Germany is shrinking. The German government is attempting to increase school-based vocational education and training offers. And in the new millennium, Germany is suffering from a problem that the vocational education is too particular related to a specific field. With the fast change of the

economic structure and the emerging of many new jobs, the vocational education system lacks the flexibility and transportability. That's why German vocational education is under the reform of modularization of its curricula and becomes more general competency focused.

#### 4.2 Summary

This article has shown briefly how Chinese and German vocational education system developed over time. Now they are complex systems including multiple learning venues and financing patterns. They are all dedicated to prepare candidates for the future career development. Germany has a 'dual system' of vocational education and training, which is admired by many other countries and would like to use for reference. Can this model be simply handed over? The answer is not a flat yes or no. It must be transferred as a continuum. And a systems spirit, components and key aspects approach may be appropriate. It needs to pay more attention to local conditions, both social and economic.

In the modernization process, China and Germany face substantial challenges. Both systems are changing and try or feeling forced to deviate from their traditional paths.

## 5 ACKNOWLEDGEMENTS

This paper is supported by Shanghai Municipal Education Commission under the contract No. ZZEGD13007. It is also supported by Shanghai Second Polytechnic University under the contract No. EGD13XQD11, A30DB14280006-1 and XXXKPY1306.

## REFERENCES

- [1] Guo, Z. & Lamb, S. 2010. International Comparisons of China's Technical and Vocational Education and Training System. *Technical and Vocational Education and Training: Issues, Concerns and Prospects*, Vol. 12: 22.
- [2] Hummelsheim & Baur, 2014. The German dual system of initial vocational education and training and its potential for transfer to Asia. *UNESCO IBE*. June 44:279–296
- [3] Sun, Z.Q., & L. Wang, 2007. Strengthening the General Education of Higher Vocational Education Students. *Journal of Jinan Vocational College*. 59, no. 1: 26–28.
- [4] Wang. L and Jiang D.Y, 2013. Chinese Vocational Education: Borrowing and Reforming An Interview with Professor Dayuan Jiang, *MOE Research Fellow Chinese Education and Society*, vol. 46, no. 4, July–August 2013, pp. 92–99.
- [5] Winterhager, W. D. 1970. *Lehrlinge: Die vergessene Majorität* [Apprentices: The forgotten majority]. Weinheim: Basel.
- [6] Zhao, L., & W.X. Feng, 2003. Institutional Analysis of the Rise and Fall of China's Vocational Education System. *Tsinghua University Education and Research*, 24, no. 6: 41–46.