

Hao, Yan

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Wissenschaftszentrum Berlin
für Sozialforschung



Yan Hao

**The Reform and Modernization
of Vocational Education and
Training in China**

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Wissenschaftszentrum Berlin für Sozialforschung gGmbH
Reichpietschufer 50
10785 Berlin
Germany
www.wzb.eu

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Yan Hao

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Affiliation of the author other than WZB:

Yan Hao

Research Fellow

Institute of Social Development, National Development and Reform

Commission

Beijing, China

Abstract

The Reform and Modernization of Vocational Education and Training in China

by Yan Hao

Vocational education and training (VET) is defined in general practice as technical education and skills training mainly for jobs that are based on manual or practical activities. According to China's 1996 Vocational Education Law, VET is deemed a key component of China's educational system, and an important means to promote employment, economic growth and social advancement. The Chinese government has attached great importance to VET since the founding of the People's Republic in 1949. The 1996 Vocational Education Law and the State Council's 2002 Decision on Vigorously Promoting the Reform and Development of VET represents the government's renewed effort at supporting VET in the era of reform and open-up. In recent years, additional reform measures have been introduced to modernize the existing VET system in line with the readjustment of China's development strategy and industrial structure.

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Preface

The paper presents an overview regarding the system of vocational training and education in China and discusses recent reforms introduced by the government in response to challenges raised by China's policy of industrialization.

The paper was written in the context of a research project on personnel and production systems in the BRIC countries. The BRIC countries – Brazil, Russia, India and China – stand for the great 'emerging markets' which are playing an increasing role as industrial centers of worldwide importance. Thus, the management concepts and practices pursued by companies in these countries can be expected to be of influence also for the traditional industrial countries in the future. In view of the particularities of the BRIC countries, the project is interested in the following questions: What are the critical differences regarding the conditions of human resources in these countries? How do companies (multinationals and locals) with their personnel systems deal with these conditions? Do the multinational companies transfer their standards, or do they attempt to draw an advantage by adapting to the cultural environment of these countries? Thus, are they banking rather on advantages such as the immense labor market, low labor costs, lack of regulation – or do they right from the start develop personnel and invest in their qualification? In this sense: Are they taking the "high road" or the "low road", and what differences exist between companies in this regard?

The project has been carried out by the research unit "Knowledge, Production Systems and Work" by Ulrich Jürgens and Martin Krzywdzinski in cooperation with Florian Becker-Ritterspach at the University of Groningen between 2009 and 2011.

Dr. Yan Hao is a research fellow at the Research Institute of Social Development, National Development and Reform Commission in Beijing, China. The paper results from a workshop during his stay as a guest scientist of our research group in August/ September 2011.

Berlin, February 2012
Ulrich Jürgens

1. Introduction

The early effort of introducing modern VET to China can be attributed to the establishment of Peili Technical School in Gansu by Rewi Alley, a New Zealander, in the 1940s. VET started to boom only after the founding of the People's Republic of China, when the demand for skilled workers rose sharply as the government launched its ambitious industrialization programs in the 1950s. Programs that combine skills training with literacy and basic education were especially popular among new recruits from rural areas with no or little schooling. Like most educational institutions at the secondary level and above, however, VET schools and programs were closed or suspended during the Cultural Revolution period (1966–1976). Many of them could only reopen in late 1970s or early 1980s.

In the late 1970s and the early 1980s, the Chinese government adopted a series of reform and open-up policies to replace the obsolete planned economy with a market-oriented economy. It is widely believed that the reform triggered eventually China's economic take-off that has lasted uninterruptedly for almost three decades to this date. The fast growth of GDP at 9% annually on average generates a huge demand for skilled and unskilled workers alike. It is estimated that over 200 million migrant workers from rural areas, with no or little skills, are working in factories and construction sites in cities and coastal provinces. Realizing the necessity of VET in bringing about hundreds of millions skilled workers to meet the challenges of China's industrialization drive, the government has adopted over the years a number of laws and decisions to promote VET at both national and local levels, such as:

- The Vocational Education Law (1996);
- The State Council Decision on Vigorously Promoting the Reform and Development of VET (2002);
- The State Council Decision on Accelerating the Growth of VET (2005);
- The Employment Promotion Law with VET promotion provisions (2007);
- The 12th Five-Year Plan (2011–2015) with VET promotion provisions (2010);
- The National Long and Medium-Term Planning Outline of Education Reform and Development (2010–2020) with VET promotion provisions (the Ministry of Education, 2010);
- The State Council Document No. 2010–36 on Enhancing Employment-oriented Skills Training (2010);
- The Action Plan of Secondary VET Reform and Innovation (2010–2012) (the Ministry of Education, 2010);

- The Amendment of the Vocational Education Law (2011).

With vigorous government promotion and strong public supported, VET programs in China have made marked progress in recent years. Table 1 shows the selected indicators of VET in China, based on the 2010 statistics of the Ministry of Education and the Ministry of Human Resources and Social Security. It is worth noting that the Ministry of Education source gives only aggregated total enrolment statistics of all tertiary educational institutions in China in 2010. A separated figure of tertiary VET institutions is not available. However, according to the Ministry's 2009 statistics, the total enrolment of tertiary VET institutions reached 9 million, accounting for one third of the total enrolment at 27 million of all tertiary educational institutions. An educated guess is that the 2010 figures should stay very close to the 2009 ones.

Table 1. Selected indicators of VET, China, 2010

VET provider	No. of school/ provider	No. of new enrolment (million)	No. of total enrolment (million)	No. of new graduates (million)
Tertiary VET institutions	1,246			
Specialized high school	3,938	3.16	8.78	2.65
Vocational high school	5,206	2.79	7.26	2.30
Skilled worker school	3,008	1.59	4.22	1.21
Adult specialized high school	1,720	1.16	2.12	0.49
Non-government vocational high school	3,123	1.13	3.07	
Government-run employment training center	3,192			
Non-government VET provider	18,341		9.30 ¹	
Government-run skills assessment institution	9,803		16.58 ²	

Source: The Ministry of Education, 2011³; The Ministry of Human Resources and Social Security, 2011⁴.

¹ No. of total trainees.

² No. of total skills certificates issued.

³ http://edu.china.com.cn/2011-07/06/content_22930999.htm.

⁴ <http://www.cvae.com.cn/www/xw/zfxw/10-11-04/8598.html>.

Despite of the marked achievements over the last few decades, VET in China still faces many problems to solve and many challenges to overcome, in order to meet the needs of economic growth and restructuring. According to the Ministry of Education, VET remains a weak area in China's current educational system, especially after the achievement of the 9-year compulsory education and the expansion of higher education in recent years. The challenges to the Chinese VET are discussed in the following section 2. Section 3 presents the structure of the Chinese VET and section 4 recent reforms and policy changes. Final conclusions are presented in section 5.

2. Challenges to the Chinese vocational training and education

2.1 Challenges from within the educational system

The 9-year compulsory education program (6 years for primary education plus 3 years of lower secondary education) was launched when China's first Compulsory Education Law took effect in 1986. By 2000, according official statistics, the goal of 9-year universal education was achieved in most provinces in China as gross enrolment ratios in primary education reached 99.5% and that in lower secondary education reached 98.0%. A natural development after this achievement is the growing demand for higher secondary education among lower secondary school graduates. In 2008, 8.4 million of 19 million junior high school leavers went to general senior high schools in preparation for studies at universities or polytechnics, and 8.1 million went to vocational high schools in preparation for employment. However, there were still 2.5 million young people who directly entered the work force without any proper training in knowledge and skills.

In 1999, the Chinese government expanded higher education to meet the growing need of the economy for qualified personnel and that of parents for better education of their children. In the following years, China has witnessed an unprecedented rapid growth in higher education. From 2000 to 2010, for example, the number of higher educational institutions increased from 1,041 to 2,723. During the same period, total undergraduate enrolment increased from 5.5 million to 22.3 million, and graduate enrolment rose from 0.3 million to 15.4 million. As a result, gross tertiary enrolment ratio increased from 10.5% to 26.5%, indicating that China is moving from the phase of elite higher education into the phase of mass higher education⁵.

⁵ According to Martin Trow (1927-2007), American sociologist and higher education expert, the transition of higher education can be divided into 3 phases by gross enrolment ratio (GER): the elite phase = GER 0-15%, the mass phase = GER 15-50%, and the universal phase = GER 50+.

With regard to VET, the recent expansion of higher education has a mixed impact. On the one hand, VET at the tertiary level has been boosted considerably as the number of tertiary VET institutions increases and total enrolment grows. On the other hand, VET at the secondary level grows relatively slowly as more and more junior high school graduates opt for general senior high schools as there is more opportunity for pursuing university studies. From 2000 to 2010, for example, the total enrolment of general senior high schools increased from 12.0 million to 24.3 million, while that of vocational high schools increased by from 12.1 million to 22.4 million.

In foreseeable future, on the one hand, it is a big challenge how to make VET at the secondary level more accessible and affordable to junior high school graduates, particularly those who will otherwise enter the labor market without proper skills training. On the other hand, it is also a demanding task how to maintain the quality of VET at the tertiary level that expands too fast in recent years.

2.2 Challenges from outside the educational system

VET is highly valued in China for its employment enhancing effect, especially in the era of fast economic growth and restructuring. “Serving employment directly” becomes now a guiding principle of all VET programs in China. Four factors contribute to the rising need for VET on China’s labor market: reduction in the supply of cheap labor, shortage of qualified technicians and skilled workers, unemployment due to economic restructuring, and improved job opportunity of VET school graduates.

China has the largest population and the largest labor force in the world. The abundant supply of cheap labor is one of the major contributing factors to the economic miracle taking place in China over the last 30 years. However, this seemingly unlimited supply of cheap labor is going to dry up in coming years. According to this author’s projection, shown in Table 2, China’s total labor force will decrease after peaking at 751 million in 2015. Although it continues to remain the largest in the world in size by 2030, its age structure changes noticeably. In the period 2010-2030, for example, all younger and middle-aged cohorts under 50 will shrink to a certain extent. The impact of a short supply in fresh blood on China’s labor market cannot be underestimated. According to a survey conducted in April 2011 by the China Human Resource Market Information and Monitoring Center⁶, 85.2%

⁶ http://www.chinajob.gov.cn/DataAnalysis/content/2011-04/26/content_637729.htm.

of employers have an age requirement for jobs and 63.2% look for workers aged 16–34. As showed in Table 2, it is exactly the cohort 15–34 that will reduce most sharply in size, by 22.1% from 307 million to 239 million, during the period 2010–2030. In fact, the impact has already been felt over the last two years that labor shortage as a new labor market phenomenon has extend gradually from the Pearl Delta and the Yangtze Delta to many inland provinces. Some economists and demographers come to the conclusion that China is very close to the Lewis turning point where industrial wages begin to rise quickly as the supply of surplus labor from the countryside tapers off⁷.

Table 2. Total labor force by age group, China, 2010–2030

Age group	Year							
	2010		2015		2020		2030	
	million	%	million	%	million	%	million	%
15–19	36	4.9	24	3.2	19	2.7	18	2.5
20–24	98	13.2	79	10.5	68	9.1	62	8.8
25–29	89	12.0	108	14.4	93	12.5	76	10.7
30–34	84	11.3	90	12.0	109	14.6	83	11.7
35–39	106	14.3	84	11.2	90	12.1	94	13.2
40–44	109	14.7	104	13.9	82	11.1	107	15.0
45–49	85	11.4	102	13.6	97	13.0	82	11.5
50–54	60	8.1	74	9.9	89	12.0	67	9.5
55–59	50	6.7	48	6.5	60	8.1	70	9.8
60–64	26	3.6	36	4.9	35	4.7	53	7.5
Total	747	100.0	751	100.0	746	100.0	716	100.0

Source: Yan (2011)⁸.

The size of China’s labor force is large, but its overall level of knowledge and skills is relatively low. According to the Ministry of Human Resources and Social Security, only half of China’s 140 million employees of urban enterprises can be classified as skilled in 2008. Among skilled workers, 60% have junior certificates, 35% intermediate certificates and 3.5% senior certificates. This skills mix differs a lot from that of industrialized countries, where the respective figures stand at 15%, 50% and 35%⁹. According to the same survey of the China Human Resource Market Information and Monitoring Center, the ratio of new vacancies to jobseekers stood at 1.08 on average in 101 cities. That indicates a roughly

⁷ <http://www.chinahourly.com/bizchina/13698/>.

⁸ EAI Background Briefs No. 628, National University of Singapore, 27 May 2011.

⁹ <http://www.people.com.cn/GB/jinji/31/179/20020610/749407.html>.

balance between demand and supply on the current labor market. Nevertheless, the demand for qualified technicians and experienced skilled workers is considerably higher than the average. For example, the ratio was 2.29 for senior engineer, 1.61 for engineer, 1.58 for technician, 1.89 for senior master skilled worker, 2.19 for master skilled worker, 1.72 for skilled worker of senior level, 1.47 for skilled worker of intermediate level and 1.52 for skilled worker of junior level. Of all job seekers, 54.7% have taken VET courses and 51.8% have obtained technical or skill certificates at certain levels. That means, nearly half of job seekers still have no proper training for jobs. Obviously, the unmet need in qualification of labor force hampers the further growth and upgrading of China's economy, particularly its manufacturing industries.

China's economy suffers from the lack of qualified and skilled personnel in many ways: (a) Technical skills and craftsmanship of workers are essential for making quality products. It is estimated that 30% of Chinese products cannot pass qualification tests due to failures in skill, resulting in an annual loss of RMB 200 billion; (b) Many advanced equipment sets and production lines, including imported ones, cannot operate normally or in full capacity, or are even left to stand idle due to the lack of qualified engineers or maintenance workers; (c) It becomes a vicious circle where low skilled workers lead to low productivity and low productivity leads to low pay, attracting few qualified personnel. Therefore, it is hard for the Chinese economy as a whole to achieve technical upgrading, raise profit margin by producing high value-added goods and services, enhance competitiveness and expand its share in the world's high-end market.

The 2008 global financial crisis affected China's economy dearly, particularly its export sector. As a result, tens of millions of workers were left jobless or laid-off, including 25 million migrant workers from rural areas. Although the export sector recovers quickly from the recession and many migrant workers returned to work, the unemployment caused by economic restructuring and business cycle remains a thorny problem in foreseeable future. In fact, the global financial crisis has sent China a warning message that its current growth model, based on cheap labor, inefficient use of energy and resources and environmental negligence, is no longer sustainable. Therefore, the growth model transformation and industrial upgrading have been listed in the government's 12th Five-Year Plan (2011-2015) as the top priorities of China's new development strategy. Correspondingly, China needs also to upgrade its labor force, which concentrates mainly in the manufacturing sector of low-end market products, through enhanced VET to meet the challenge of a knowledge-based, innovation-driven and environmentally friendly economy.

According to the 2010 graduate employment report¹⁰, the employment rate of college graduates was 86.6% in 2009, up by 1 percentage points over 2008. In comparison, the employment rate of tertiary VET graduates was 85.2%, up by 1.7 percentage points during the same period. The gap between the two is closing gradually, as that of VET graduate picked up quickly 4 years in a row. Although the first job wage of tertiary VET graduates at RMB 1,890 per month is still lower than that of college graduates at RMB 2,756 per month, the rise in the former's wage is faster, up by 14.7% over 2008, than in that of college graduates at 8.1%. VET graduates specialized in resource development can earn as high as RMB 2,358 per month. The job opportunity of secondary VET graduates looks much better. According to the Ministry of Education¹¹, the employment rate of graduates from secondary VET schools was 96.6% on average in 2009, up by 0.8 percentage point over 2008. The highest employment rates were recorded among graduates with certificates in transport (99.2%) and manufacturing (97.8%). Anyway, the manufacturing sector will remain for a long period as China's major job creating area and the demand for skilled worker at the intermediate level will remain the highest. This is exactly the advantage of secondary VET graduates over their tertiary counterparts. Therefore, some experts predict that the better job opportunity of VET graduates, particularly those who with secondary certificates, may make VET schools more attractive to prospective students and their parents in future.

3. Structure and organization

The current VET system in China is comprehend and complicated that covers a variety of formal and informal programs, in order to enable students and trainees to find something to fit their specific need in a market environment. The structure and organization of the system can be showed from different perspectives.

3.1 By level of education:

According to the 1996 Vocational Education Law, China's VET falls into three levels: primary, secondary and tertiary¹². Four types of non-

¹⁰ <http://edu.163.com/special/00293I4H/mycosjiuye.html>.

¹¹ http://www.ccg.gov.cn/gysh/qt/b/jysb/201106/t20110624_1663214.shtml.

¹² VET at the primary level, which combines skills training with literacy and basic education, used to play an important role in the 1950s and 1960s, when a large proportion of new labor force entrants were illiterate. Since the 9-year compulsory education has become universal in China after 2000, however, VET at the primary level has gradually been phased out nowadays.

university institutes provide VET courses at the tertiary level: (a) Vocational-technical colleges or polytechnic colleges (*gaodeng zhiye jishu xueyuan*, or *gaozhi* for short) provide 2- to 3-year diploma courses of occupational and technical training. Polytechnic colleges now play a key role in China's tertiary level VET. (b) Specialized junior colleges (*gaodeng zhuan ye xuexiao* or *gaozhuan*) provide 2 to 3-year diploma courses mainly for capacity building rather than technical training. Currently, only a small number of normal colleges belong to this category. (c) Master skilled worker colleges (*jishi xueyuan*) provide 2 to 3-year certificate courses specially designed for the state occupational license¹³ qualification of master skilled workers and technicians; and (d) Adult higher educational institutes (*chengren gaodeng xuexiao*) provide full time and part-time certificate courses to people who want to pursue higher education for capacity building, knowledge enrichment, or self improvement.

Four types of VET schools provide VET courses at higher secondary level: (a) Specialized high schools (*zhongdeng zhiye jishu xuexiao* or *zhongzhi*) provide 3-year certificate courses. This is the most popular form of VET in China. After graduation, students are more likely to enter the labor market directly. (b) Vocational high schools (*zhiye gaozhong* or *zhigao*) are VET schools transformed only lately from general senior high schools. After graduation, students either enter the labor market or progress further to polytechnic colleges. (c) Skilled worker schools (*jigong xuexiao*) provide 3-year certificate courses specially designed for the state occupational license qualification of skilled workers; and (d) Adult specialized high schools (*chengren zhongdeng zhuan ye xuexiao* or *chengren zhongzhuan*) provide full-time and part-time courses for those who want to pursue senior high school education. Most short-term courses of occupational and technical training can be grouped into this category as well, since prospective applicants must complete junior high schools.

3.2 By administration:

For historical reasons, the responsibility of VET administration in China is divided between the Ministry of Education and the Ministry of Human Resources and Social Security (formerly the Ministry of Labor). The former

¹³ The state occupational license system was launched in 1993 by the Ministry of Labor (currently the Ministry of Human Resources and Social Security) under a State Council instruction and confirmed by the Labor Law of 1995 and the Law of Vocational Education of 1996. The system consists of 3 class categories for skilled workers and 2 class categories for master skilled workers. Authorized by the Ministry of Human Resources and Social Security, the China Occupational Skills Test Authority (OSTA) is responsible for the classification, test and certification of occupational skills in China. Currently, OSTA runs a network with 6,000 test centers and 70,000 staff nation-wide.

pays more attention to occupational and technical education while the latter pays more attention to skills training.

The responsibility of VET administration at the Ministry of Education is further divided between the Department of Higher Education and the Department of Vocational and Adult Education. The former is in charge of VET colleges and institutes, including polytechnic colleges, specialized junior colleges and adult higher educational institutes, while the latter is in charge of VET schools, including specialized high schools, vocational high schools and adult specialized high schools.

At the Ministry of Human Resources and Social Security, the Department of Occupational Capacity Building is responsible for the administration of VET programs in technician colleges and skills worker schools. The department is well positioned for the task because it is also in charge of formulating occupational skills standards, assessing skills qualifications and issuing occupational/professional licenses. In cooperation with the Department of Employment Promotion, the department overlooks short-term skills training programs run by 3,173 employment service centers (job centers).

At the national level, the two ministries have similar tasks of VET administration, including strategic planning and policy making, cross-region coordination, setting VET standards and curriculum development. At the local level, the respective education departments and labor departments are responsible for the daily routines of VET administration, including budget allocation and personnel management of state-run VET institutions.

In theory, the two ministries may exercise their responsibilities independently because of varied interests and targets. However, differences and confusion cannot be ruled out completely in practice. There have been calls for measures to strengthen coordination and cooperation between the two ministries. Nevertheless, in the National Guidelines of Education Reform and Development 2010-2020, it is stated only vaguely that “the education authority coordinates and administers VET programs in an integrated manner, while other relevant departments exercise their respective responsibilities”. Some experts, therefore, suggest the reorganization of the Ministry of Education into the Ministry of General and Vocational Education by taking over all VET responsibilities from the Ministry of Human Resources and Social Security. Another option put forth is the setting up of an independent ministry, either called the Ministry of Vocational Education and Training or the Ministry of Education No. II to look after VET matters. As a temporary measure, the State Council approved in 2004 the establishment of an inter-ministerial liaison meeting

mechanism to coordinate activities of the seven ministries related to VET: the Ministry of Education, the National Development and Reform Commission, the Ministry of Finance, the Ministry of Labor (currently the Ministry of Human Resources and Social Security), the Ministry of Personnel, the Ministry of Agriculture and the State Council Poverty Alleviation Office.

3.3 By organizational status:

Before 1980s, VET colleges and schools were run primarily by the state, but for a small number by enterprises. In recent years, the government has adopted a series of measures to encourage the involvement of non-state sectors in VET development. At present, non-state VET providers are very active at various levels and in various forms of VET, particularly in the field of short-term certificate courses. Unlike state VET institutions that are managed by relevant government departments and financed by government budget, non-state VET providers are financially independent and usually have high degree of autonomy in decision making. They are therefore much more flexible in developing and tailoring their VET courses to meet changing market needs.

Non-state VET providers can be further divided into two groups: the not-for-profit and the commercial. Enterprises¹⁴ and sectoral associations¹⁵ are the two main players in the not-for-profit group. To provide VET courses to their employees is a legal obligation required by the Vocational Education Law. In 2008, there were over 22,000 training centers ran by enterprises of various industries. Other active players include mass organizations like trade unions, the women's federation, the youth league and the association of the disabled, social and professional associations, and various NGOs. Recently, the army has also launched its own VET programs to bring up a large number of "servicemen for dual purposes" (military and civilian purposes) through professional education, military drills and vocational training.

¹⁴ For example, the Geely group, one of the top ten automobile makers in China, has set up 4 educational institutions at both tertiary and secondary levels to provide vocational education and training, including Geely University in Beijing, Sanya College in Hainan, and the Automobile Vocational College and the Automobile Engineering College in Zhejiang. The Geely-Tongji Automobile Engineering Academy, a joint venture between the Geely group and Tongji University, was established in 2007.

¹⁵ For example, the government of Chongqing introduced in 2007 a special policy to encourage the cooperation and coordination on vocational education between VET providers and sectoral associations. A number of coordination committees were established, involving 8 sectors of automobile, electronics, retail, construction, tourism, health care, agriculture and dam resettlement program.

Table 3. The structure of China's VET system

Course status	Level	Government		Non-government	
		Ministry of Education	Ministry of Human Resources and Social Security	Not-for-profit	Commercial
On-campus courses	Tertiary	Vocational-technical colleges Specialized junior colleges Adult higher educational institutes	Master skilled worker Colleges		Vocational-technical colleges Specialized junior colleges
	Secondary	Specialized high schools Vocational high schools Adult specialized high schools	Skilled worker schools		Specialized high schools Vocational high schools
Off-campus courses			Employment service centers	Enterprises Mass organizations Professional associations NGOs	VET companies/centers

China has witnessed a fast growth of commercial VET institutions in recent years. In 2008, for example, the number of commercial VET providers reached 21,811 nationally. Labelled as non-state, non-enterprise units (*minban fei-qiye jigou*), commercial VET institutions are treated differently from ordinary businesses. They are required to not only be registered at the taxation office and the civil affairs department, but also apply to the education department for a license in advance. Except for a small number of VET colleges, commercial VET providers are mainly engaged in secondary level certificate courses designed in line with the state occupational and professional qualification standards. These certificates are extremely necessary to those who are either looking for a job or seeking a promotion. Because they are well targeted and highly practical, VET courses provided by commercial institutions are becoming increasingly popular

nowadays. The most successful story comes from New Oriental Education and Technology Group in Beijing, which grows in just 13 years from a small class to a New York stock market listed company. By the end of 2007, the company had trained over 10 million person-times in its 40 branches at home and abroad. Yu Hongmin, the founding father of New Oriental, is considered the richest teacher in China, with a total fortune of US\$121 million.

China Society of Vocational Education and Training, established in 1990, is the national organization for facilitating coordination and cooperation among VET institutions of different background. It also has a department responsible for exchange with foreign VET organizations.

3.4 By key school status:

The separation of key schools from ordinary schools is a common phenomenon at all levels of education in China. The VET sector is no exception. Key schools usually enjoy high reputation and rich resources for high-quality education, effective management, and standardized facilities. In recent years, the government has made efforts to downgrade the importance of key schools at the compulsory education level in order to equalize basic education provision. In VET institutions, however, the aim of identifying key schools is to set high standards for teaching quality and school management.

In 2006, the Ministry of Education and the Ministry of Finance announced a joint project “Tertiary VET 211”¹⁶ to make available an additional RMB 2 billion by the end of 2009 to upgrade 100 state exemplary tertiary vocational colleges (*guojia shifanxing gaodeng zhiye xueyuan*). Since 2003, the Ministry of Education has published an annual list of key state vocational high schools (*guojiaji zhongdian zhongdeng zhiye xuexiao*). Education departments of provincial governments also identify key vocational high schools at local levels. By the end of 2008, there were about 2,000 state designated key VET schools and 3,000 provincially designated key VET schools.

The Ministry of Human Resources and Social Security has established its own system of recognizing key VET schools since 1989. By the end of 2007, the Ministry had listed 618 key state skilled worker schools (*guojia zhongdian jigong xuexiao*). Among them, 397 were also awarded the title of

¹⁶ A follow-up of the project “Higher Education 211” launched by the Ministry of Education in 1995 to upgrade 100 key universities so as to improve the overall standard of higher education in China in the 21st century.

advanced skilled worker schools (*gaoji jigong xuexiao*) for achieving S09000 standards.

4. Problems and reform and modernization policies

4.1 Existing problems

On 22 April 2009, Mr. Zhou Ji, Minister of Education, on behalf of the State Council delivered to the National Congress a special report on the reform and development of VET in China¹⁷. The State Council identified in the report 6 major problems in China's VET system: (a) The VET sector does not grow fast enough to produce skilled manpower, both in quantity and quality, to meet the need of China's socio-economic development; (b) Defects in VET administration and management at macro and micro levels; (c) Lack of coordination between tertiary and secondary VET, as well as between VET and general education; (d) Courses and curriculums poorly designed and not well-targeted for practical employment needs; (e) Shortage of teaching personnel and unsatisfactory teaching quality; and (f) Inadequate resources and poor school facilities.

4.2 Policies of reform and modernization

To tackle the aforementioned problems, the government has adopted a series of VET promotion targets and reform policies in recent years. The most important strategies and policies are listed in the relevant provisions of the 2009 State Council report on VET reform and development, the 12th Five-Year Plan (2011-2015) and the National Long and Medium Term Planning Outline of Education Reform and Development (2010-2020).

- The 2009 State Council report proposes 9 major policies to promote VET in China in foreseeable future. a) To stress VET's importance in China's development strategy. The growth target of the VET sector should be embodied in government socio-economic development plans at national and local levels. b) To promote the VET in general, and VET at the secondary level and in rural areas in particular. The annual new enrolment of secondary VET schools should reach 8.6 million and the total enrolment should reach 24 million. The annual new enrolment of tertiary VET institutes should reach 3 million and the total enrolment should reach 10 million. The trainees of all off-campus VET courses should reach 150 million person-times. c) To improve the administration of VET system. Under the guidance of the State Council, provincial governments take major responsibility of

¹⁷ http://www.npc.gov.cn/huiyi/cwh/1108/2009-04/22/content_1499332.htm.

VET reform and development, with participation of other social organizations. d) To initiate pilot projects of VET reform in accordance with the guideline listed in the National Long and Medium-Term Planning Outline of Education Reform and Development (2010-2020). The pilot projects cover a wide range of reform measures, including management reform, curriculum reform, financing reform, teaching personnel reform, tuition fee reform and certification reform. e) To raise the quality level of VET. Innovative, employment-oriented teaching approaches should be encouraged to bring about a large number of qualified graduates for labor market. f) To allocate sufficient funding to VET from government budget. g) To improve the qualification of teaching personnel. h) To strengthen the supervision of educational authority, especially in areas like the enforcement of VET access regulations and certification rules. i) To launch public education and awareness programs to attract public attention and support of VET.

- During the plan period 2011-2015, the 12th Five-Year Plan requires a vigorous promotion of VET in China in general, and an accelerated growth of VET in rural areas in particular. Efforts will be made to encourage the approach that combines classroom teaching with workplace training, the cooperation between VET schools and enterprises, and on-the-spot apprenticeship training. A new initiative, entitled “the VET Basic Capacity Building Project”, will be launched in 2011, which includes measures to expand VET training and practice bases, identify exemplary VET schools at tertiary and secondary levels, and promote “the Dual Qualification Program” among VET teachers¹⁸.
- The main policies proposed by the 2009 State council report are re-emphasized in the VET-related provisions of the National Long and Medium-Term Planning Outline of Education Reform and Development (2010-2020). According to the Outline, the goal is to establish a modern, multi-level balanced VET system by 2020 that meets not only the needs of people for quality VET but also the needs of economy for qualified skilled manpower. It is reported that the drafting of a special module, entitled the National Long and Medium-Term Planning Outline of VET Reform and Development, is still in progress. More detailed policies and targets will be listed in the document.

¹⁸ Teachers with dual qualification certificates in both teaching and occupational skills.

- To tackle the fluctuation of the labor market triggered by the global financial crisis, the State Council issued in 2010 a special document (No. 2010-36) to enhance employment-oriented skills training in 5 areas: a) Raising awareness of the importance and necessity of employment-oriented skills training; b) Promoting skills training in multiple forms and at multiple levels; c) Improving the quality of skills training in an effective way; d) Increasing the funding of multiple sources to support skills training; and e) Strengthening leadership and management. Under the slogan “One who gets trained gets job and one who has job gets training”, the target during the 12th Five-Year Plan period (2011-2015) is to provide every new labor market entrant at least one opportunity of basic skills training, every on-the-job worker at least one opportunity of skill upgrading training, and every potential entrepreneur at least one opportunity of business start-up training.
- The Department of Vocational and Adult Education of the Ministry of Education drafted in 2010 an action plan for VET reform and innovation at the secondary level during the period 2010-2012. The plan consists of 10 proposed projects: a) The capacity building project to accommodate the needs of industrial restructuring and upgrading; b) The project of promoting school-enterprise cooperation and joint venture in secondary VET¹⁹; c) The project of promoting resources optimization and cross-regional cooperation of secondary VET between Eastern and Western provinces; d) The capacity building project to accommodate the needs of agricultural modernization and new rural development initiatives; e) The capacity building project to improve school management; f) The capacity building project of principals and the “Dual Qualification” teaching personnel; g) The project of profession and curriculum reform and innovation; h) The capacity building project of information technology in secondary VET; i) The project of macro decision making and organizational improvement in secondary VET; and j) The project to improve the adult continuing education system.

¹⁹ A cross-sector dialogue between the automobile sector and the VET sector was held in October 2010 in Beijing under the sponsorship of the Ministry of Education and the China Machine-Building Association. Attended were 500 delegates from over 100 VET providers, 80 automobile makers and 20 sectoral associations. Detailed policies and measures were discussed to promote the cooperation between the two sectors. For example, the Vocational and Technical College of Hunan signed a cooperation project with Bosch Auto Parts (Changsha) company to train skilled personnel for Bosch locally according to the German model.

- It is almost 15 years since the coming into effect of China's Vocational Education Law in 1996. During this period, on the one hand, VET has made remarkable progress in China. On the other hand, new challenges emerge as the external situation changes constantly. Therefore, the Ministry of Education has started recently the preparation of an amendment of the 1996 Vocational Education Law, in line with the National Long and Medium-Term Planning Outline of Education Reform and Development (2010-2020) and the Guiding Principles of Promoting a Balanced Development of VET at Tertiary and Secondary Levels drafted by the Ministry of Education in April 2011. Key areas under amendment consideration include: a) The strategic status of VET in human resource development and life long learning; b) The basic framework and contents of the VET system; c) The responsibilities and roles of other stake-holders, such as governments, enterprises, professional associations, social organizations and individuals; d) The improvement of management and working mechanism; e) Financing security and capacity building; and f) Supervision and law enforcement.
- In January 2011, the State Council launched a nation-wide pilot project of education reform, in order to put into practice the policies proposed in the National Long and Medium-Term Planning Outline of Education Reform and Development (2010-2020). A total of 56 pilot sites were selected to carry out VET reform in 6 major areas: a) To promote a new system where the state, the industry and other stake-holders share the responsibility of VET provision, in forms like school-enterprise cooperation and joint venture; b) To promote the standardization of VET in profession and curriculum, the certification of "dual qualification teachers" and "dual certificate graduates²⁰", and the collectivization of key VET provider groups; c) To promote the tuition-free "9+3" VET model²¹ in ethnic minority regions; d) To strengthen the government guidance and supervision over secondary VET; e) To strengthen the government support to the integrated reform of VET at the tertiary level; and f) To promote the bridging of VET between secondary and tertiary levels towards a comprehensive, balanced and modern VET system.

5. Concluding remarks

Over the last few decades, China's VET has been proven successful in providing a much needed, sizable skilled manpower to the fast growing

²⁰ Graduate with both high school certificate and skills training certificate.

²¹ 9 years of general education plus 3 years of vocational education.

economy. To meet the challenges of industrial upgrading and labor supply shortage in foreseeable future, however, continued efforts of reform and readjustment are required to modernize the current VET system. The government has so far adopted a series of policies and measures to promote VET in China by expanding total VET enrolment and improving the quality of teaching. In the 12th Five-Year Plan period (2011-2015), priority will be given to VET at the secondary level and in rural areas. A number of pilot projects have been launched to test innovative ideas and accumulate experience for subsequent extension nation-wide.

The quality of teaching is vital to the growth of the VET sector. Almost all reform measures require that VET programs and courses be practice-oriented, labor market-oriented, and combining school learning with hands-on practices. An effective way is to introduce the model of “dual qualification teachers” and “dual certificate graduates”. Also the funding to VET will be increased from multiple sources to modernize curricula, upgrade facilities and attract qualified teaching personnel.

Apart from the supply-side measures taken by the government, demand-side factors are also relevant, which are largely decided by students and their parents. That “scholars are superior to all other walks of life” is an old belief in traditional Chinese societies. Parents try their best to support children to complete education at highest possible level. A trainee certificate is not usually considered an accomplishment. Therefore, public education and awareness campaign is needed to boost skilled workers’ social status. Maybe the latest development of the labor market can help change people’s mind, where VET graduates become increasingly welcome for their practical skills and realistic expectations. With better job opportunity and higher wage increase of their graduates, VET schools are bound to be the first choice of many young people in future when it comes to their career planning.

Appendix: China's educational system at a glimpse

Level of education	General education	Vocational education and training	Adult and continuing education	Special education
Tertiary education	Universities • Undergraduate studies • Graduate studies • Post-doctoral studies	• Polytechnic colleges • Specialized junior colleges • Master skilled worker colleges	• Adult higher educational institutes • Correspondence colleges • TV colleges	
Higher secondary education	General senior high schools	• Specialized high schools • Vocational high schools • Skilled worker schools • Adult specialized high schools • Short-term courses of various types	Adult senior high schools	
Lower secondary education	General junior high schools	• Vocational junior high schools • Short-term courses of various types	Adult junior high schools	• Special schools for the disabled • Correctional work-study schools
Primary education	Primary schools		• Adult primary schools • Literacy classes	Special schools for the disabled
Pre-school education	Pre-schools			

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