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Understanding Skill Development and Training in China: Lessons for India

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Planning Commission
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Executive Summary

For the past two decades, the Chinese economy has been growing by over 10 per cent per annum. As the economy undergoes such structural transformation that the contribution to output and employment from agriculture declines in favour of rising shares for industry and services, the need for skilled workforce grows in the process. The need for skilled workers also arises: from the policy-makers' perspective, from their aspiration to transform their economy from low technology-based production based on manual/mechanical techniques to more skill oriented, innovative and knowledge-based in the context of globalization. Keeping in mind the needs of a growing economy, Chinese planners gave much importance to educational reforms, especially vocational educational reforms. Their education policy is guided by Confucian ideology and the quest for lifelong learning. Chinese society can be described as 'a learning society'.

The Chinese Technical and Vocational Education and Training (TVET) system has been designed in a very systematic manner. It derives its comprehensiveness from the careful planning which takes into account every aspect of vocational education and training – The Vocational Education Law of 1996 provides the legal framework for the implementation/functioning of the vocational education and training system in the country.

It also elucidates the roles and responsibilities of the Ministry of Education and Ministry of Human Resources & Social Security (two main ministries responsible for TVET) on the one hand, and local governments, vocational training providers and industry/private participation on the other. The fiscal decentralization and autonomy of the local governments play an important role in the implementation of vocational education.

Vocational education in the Chinese school system is introduced at the junior secondary level (or junior middle school) for students in the age group of 12-14 year olds. Junior level secondary schooling is the last 3-year stage of the 9 years of compulsory schooling mandated by the Nine-Year Compulsory Education Law of 1986. The element of vocational education is however fading away at the junior secondary level over the years. Unlike India, after the junior secondary level, each student is required to undertake the Senior High School Entrance Examination called the 'Zhongkao', the score in which determines the entry into general academic and vocational education schools. Typically, middle school graduates with lower marks end up in the senior secondary vocational stream.

After completing 9 years of compulsory schooling, only about 11.6 per cent junior secondary graduates enter(ed) the workforce (2012) in contrast to India, where the share is much higher. Out of the 88.4 per cent continuing senior secondary education, the proportion of those entering the vocational stream, is about 47 per cent. That is almost half of the junior secondary graduates who enter the vocational secondary schools – again in total contrast to the situation in India.

In 2011, there were about 13,093 schools under vocational secondary education (China Statistical Yearbook, 2012). These schools are classified into four categories, depending upon

their sponsoring organization and trades/subjects taught – regular specialized schools (3,753), adult specialized schools (1,614), vocational senior secondary schools (4,802) (all under the Ministry of Education), and technical schools, also known as skilled workers schools (2,924) (under the Ministry of Human Resources and Social Security). Vocational education at the senior secondary level is for three-four years duration (depending upon the trade), of which the last year entails field training at the enterprises in the related subjects/trades.

Public-private partnership takes a concrete form in China. All enterprises as a policy are required to utilize 1.5 per cent of their payroll towards in-service training, which if they fail to do, should contribute to the government to be used towards adult training. (No such requirement exists on Indian firms.) However, without the legal backing of the law, not all enterprises are contributing to such training fund. Given that, township and country governments (and their mayors) have since the economic reforms began in 1979, had much more autonomy and power than local government in India, the support to enterprises by the local government is a crucial aspect of industry participation in TVET. Incentives such as allotment of land at subsidized prices, and preferential treatment in case of award of government projects, do prove to be influential in encouraging industry to actively participate in vocational education and training.

To increase participation in the vocational education stream and support students from poorer economic backgrounds, the government initiated various measures. Since 2006 over 40 billion Yuan (OECD, 2010; Wang, 2010) has been spent on vocational education, with more than half financed by the local levels of government. To overcome the financial burden and to ensure that the poor students continue in VET schools, a national scheme was introduced to offer a subsidy of 1500 Yuan per year per student, for their first two years at secondary vocational schools to cover their fees. Since 2009, an initiative has been taken to make tuition fees for senior secondary vocational schools free of cost for all students.

This policy recognises the fact that vocational education in China is not an aspirational (as in India); it also recognises the fact that poor students face a financial cost if they undertake vocational education and also an opportunity cost as they are not earning a wage by joining the labour market. This policy initiative is particularly relevant in case of India, where an evaluation study conducted by IAMR of graduates from vocational training providers indicated that they are usually from poorer economic backgrounds with household incomes of Rs. 5000 and below.

For vocational education and training to be in line with industry needs, local enterprises are actively encouraged. For instance, the curriculum of a senior secondary vocational school is designed such that, one- third includes general academic skills defined nationally by the Ministry of Education, another one- third is again nationally defined content associated with the particular occupation, and the remaining one- third defined again with respect to the occupational field is determined locally at the school level with the help of local enterprises. This is in contrast to India, where there is limited scope for even introducing courses relevant to the district where vocational education or ITIs exists.

Another important aspect of TVET is training of teachers and instructors at vocational schools to be at par with new technologies and needs of modern industry. There are strict requirements of teachers being hired at vocational schools and colleges. Teachers hired to teach at the senior secondary level must possess undergraduate degrees (there is no such requirement in India) and those who are to teach in vocational undergraduate colleges must themselves be postgraduate degree holders in that particular field along with the occupational certificate in that respective trade. In addition, teachers in vocational schools are required to undergo one month in industry each year, or two months every two years for their career progression and promotion. There is no such requirement either for vocational education teachers in senior secondary schools in India or for ITI teachers in ITIs (public or private). The practical value of TVET is thus compromised in India.

After senior secondary vocational education, most graduates join the workforce. However, some progress to higher vocational colleges. In principle, horizontal and vertical mobility of VET graduates is allowed because of the National Level College Entrance Examination. But most of them, except for some Arts graduates from vocational schools (entering Arts vocational colleges) find it difficult to qualify for general academic stream of higher education.

Apart from the Diploma system of the Ministry of Education, there simultaneously exists the Ministry of Human Resources and Social Security's vocational qualification system which includes occupational classification and testing of occupational skills after vocational training to issue a vocational qualification certificate. Chinese government established the vocational qualification system from 1993 and laid equal importance on diploma (issued by MOE) and vocational qualification certificate (issued by MOHRSS), thus trying to maintain co-ordination between the two ministries.

According to the 1996 Vocational Education Law, China's vocational training includes pre-job training, job transfer training, apprentice training and on-the-job training and entrepreneurship training.

The MOHRSS is responsible for the following training providers –Technical schools also known as Skilled Worker Schools (SWSS) are the main providers of training for skilled workers, Employment training centers are the main means of providing training for unemployed workers, and then there are Enterprise-sponsored training centers and training providers run by various organizations or individuals, which deliver on-the-job training and other training programme.

CHAPTER I

Introduction

Key Dimensions of the Chinese Economy and Law Relevant to Vocational Education

Background

For the past two decades, the Chinese economy has been growing by over 10 per cent per annum. Despite the existence of a large industrial sector, China was, like India, an agrarian economy with the majority of investment in primary health and schooling population residing in rural areas for the first 30 years after the revolution in 1949. However, the big difference with India that emerged over the first three decades after 1949 was the investment in agriculture, health and education for the majority. The planned public investments in agriculture, health and education that took place prior to the economic reforms and land reforms of 1978, (which gave land tenure to the household through 30 years of lease even though the ownership remained with the collective of the villages), created the basis for equitable economic growth after the economic reforms that began in the late seventies. The Chinese government for all, growth of agricultural output and expansion of rural industrialization and enterprise reforms during the 1980s and thereafter. China has also ensured rapid poverty reduction and economic growth since the early 1980s, while pursuing a path of fiscal decentralization.

With unequal availability of natural and human resources as well as differences in levels of industrial and infrastructure development, there are regional variations across the 31 provinces of the country. The coastal provinces have witnessed higher economic development compared to the interior provinces. Most of the employment opportunities are therefore concentrated there and the coastal belt is the recipient of rural migrants from the western provinces. However, with the existence of the *hukuo system*, the Chinese administrators have often tried to control rural-urban migration.

Objectives of the Study

When an economy grows as rapidly as this, skill shortages emerge. Both the Indian and Chinese economies are facing skill shortages and need a widespread, responsive and agile system to develop skills. The present study therefore aims at learning from differences both in terms of policy approach and implementation of the TVET system. The broad objectives of the study are as follows:

i. To understand the systematic reforms undertaken by China like qualification framework, national occupational standards and labour market information system;
ii. To understand the role of enterprises/industry in the Chinese vocational education & training system;

iii. To understand the financing models adopted in China particularly the contribution of enterprises and PPP; and
iv. To understand the skilling of rural migrants shifting to urban and semi-urban jobs in China.

Methodology

The study was conducted based on both primary and secondary data. For primary data collection, a team of researchers visited three Chinese cities –Beijing (the capital city), Taiyuan (Shanxi province – a relatively less developed province) and Chongqing, the largest city and one of the municipal corporations in China. In addition to this, a visit to Haihe education-park in Tianjin (another municipal corporation) was also made. Detailed discussions and interviews were held with officials of the Ministry of Education, Ministry of Human Resources and Social Security, officials of education bureaus at the provincial as well as local government levels, representatives from the industry association to get the industry perspective; and vocational schools, colleges and vocational training institutes in the four cities.

For secondary data, literature/studies available on TVET in China were reviewed and data from the China Statistical Yearbooks 2004 and 2012 were analysed. In addition, discussions were held with China experts in India.

This report is organised as follows. In this first Chapter, the present report discusses the various reform measures and initiatives taken by the Chinese government in the technical and vocational education and training (TVET) space. Chapter one also discusses the objectives and methodology of the study. The rest of the report is divided as follows. Chapter two details the structure of China's TVET system comparing over time the expansion of various vocational education and training institutes. Chapter three highlights the core aspects and initiatives by the government in terms of financing, encouraging industry participation, reforming teacher training, etc. that provide Chinese manufacturing and the corresponding TVET system a competitive edge. It is the argument of this paper that the Chinese manufacturing sector would not be what it is today, with China described as the ´factory of the world´, without its remarkable TVET system. The last Chapter summarizes the major findings and discusses lessons that India can learn from the Chinese experience.

The Hukou System

The historical Hukou system is the official household record system that identifies an individual as a resident of an area with the basic information for all the members of the household. The social security benefits are linked to the hukou system in the sense that individuals are entitled to social benefits in the village or town that they are registered with. This is essentially a migration control policy by the State in which the migrants are denied benefits such as free education for their children or certain healthcare benefits in government hospitals in the centres they have moved to in search of work and opportunities. *"Some 260*

million Chinese migrants — about 20 percent of China's total population — live as second-class citizens in their adopted cities. In them, but not of them."[1]

However, from the mid-1990s, there was some relaxation in the strict regulations under the hukuo system for regional migration. This resulted in large scale migration from rural areas to economically developed cities, highlighting greater need for training and skill development. With rising demands for skilled workforce from the economically developed cities of the coastal belt, there is an office (under the Ministry of Human Resources and Social Security, MOHRSS)[2] for transfer of rural workers to urban areas. This office facilitates the training of rural migrant workers and this movement of workers is not subject to the restrictions of hukuo.

It seemed though that the hukuo system has been practically overwhelmed by the large number of migrants, who constitute a floating population, moving from city to city in search of work. The office, which was originally created to manage the orderly transition of workers from rural to urban locations where the new work opportunities existed, has been reduced to playing a minor role, while the real movement of labour continues unabated in response to market demand for labour.

Fiscal Decentralization

Despite being a large country with one-party rule and a unitary constitution, China is highly fiscally decentralized. The level of fiscal decentralization is evident from the fact that, 56 per cent of public expenditure by all levels of government is accounted for by Chinese local governments, called township and county governments. Similarly, of all revenues collected by any level of government, as much as 23 per cent is accounted for (retained by) township and county governments. Such levels of fiscal control by the local governments give them the power to implement projects in health, education, infrastructure development independently. For instance, the financial and administrative responsibility for vocational education at secondary level and below rests with the township and county governments for which they raise resources.[3]

Thrust on Lifelong Learning

As the economy undergoes such structural transformation that the contribution to output and employment of agriculture declines in favour of rising shares for industry and services, the need for a skilled workforce grows in the process. The need arises from the aspiration to transform the economy from changing production structure with growing manufacturing, initially of a labour-intensive kind for exports, and now increasingly of more technology-intensive industry, which accordingly implies a shift from manual/mechanical work skills to

[1] http://www.pri.org/stories/politics-society/social-justice/china-s-hukou-system-puts-migrant-workers-at-severe-economic-disadvantage-13676.html last accessed on 5th September, 2013.

[2] Known during discussions with MOHRSS

[3] The difference with India is notable: panchayati raj institutions in rural areas or urban local bodies do not have the responsibility for secondary vocational education; rather it is the provincial government. This is an important difference in both systems of governance as well as the degree of fiscal decentralization that has prevailed in China since the economic reforms of the early 1980s.

higher levels of skills, innovative and knowledge- based in the context of globalization. Keeping in mind the needs of a growing economy, Chinese planners gave importance to educational reforms, especially vocational educational reforms.Their education policy is guided by Confucian ideology and the quest for lifelong learning. The following Confucius quote best describes the Chinese society as 'a learning society' – *"never be tired of learning or teaching others".*

In 1949, illiteracy in China was as high as 80 per cent and the enrolment rate of elementary schools and junior secondary schools were below 20 per cent and around 6 per cent respectively. The system of technical and vocational education and training has existed since 1949, and developed as a public-owned and centralized system under the planned economy. Since the opening up and reforms in China from 1978 onwards, calibrated measures had been taken to reform the education system. The 9-year compulsory education programme was launched in 1986 with the enactment of the Compulsory Education Law of 1986. In 1999, the Central Committee of the Communist Party of China and the State Council hosted the 3rd National Working Conference on Education and made the decision on deepening educational reform and comprehensively promoting quality education. As a result, the targets of universalizing the access to compulsory education and eradicating illiteracy were achieved by the early 2000s. Since 2002, efforts had been initiated towards universalizing of free compulsory education both in rural and urban areas. In 2011, China accomplished the goal of providing 9 years of (without tuition fee) free compulsory education to all urban and rural students (UNESCO, 2012).

In 2003 the first ever National Conference on Rural Education gave rural education a strategic role in educational development. In 2005 the State Council put into practice a new funding guarantee mechanism for compulsory education in rural areas, which stipulated that the central government and local governments would share the cost with a certain proportion according to different programme. The policy of "two remissions and one subsidy" (remissions, that is, lower charges for miscellaneous and textbook fees, and a subsidy for boarding and hostel charges) was implemented in rural areas nationwide in 2007. The various initiatives resulted in the net enrolment rate in elementary education (grades 1-6) reaching 99.5 per cent, and gross enrolment ratio for junior secondary education (grades 7-9) reaching 98.5 per cent in 2008.[4] (By contrast, the upper primary GER in India was 81 per cent in 2010-11 (DISE educational statistics).

In line with the needs of the 21st century, in 1999 the Chinese government decided to expand the scale of higher education. Since 2006, investments were made in the higher education sector, developing some key disciplines and world class universities to transform it from an elite system to a mass higher education system. Measures were also taken to restrain students from joining the workforce and continuing into higher education.

[4]http://www.china.org.cn/government/scio-press-conferences/2009-09/11/content_18508942.htm last accessed on 3rd September, 2013

Even vocational stream at the tertiary level was encouraged to induce more students to continue vocational higher education in order to reduce the pressure on general senior secondary schools.

Reforms in Vocational Education and Training and the Law

Near universalization of 6 years of primary education plus 3 years of junior secondary education, post the Compulsory Education law of 1986 implied a growing demand at the senior secondary level of education. With the lower social status associated with vocational education, graduates from junior secondary level considered joining vocational stream at senior secondary level only as a last resort (that is, an option for those unable to pursue general academic education). Moreover, after 16 years more of economic reforms since the 1979, and sustained GDP growth of nearly 10 percent per annum as well as expansion of non-agricultural sectors, critical skill shortages started to emerge. The reforms and opening up of the economy significantly changed the expectations from the TVET system. The double-tracking education system[5] which was severely criticized during the period of Cultural Revolution (1966-1976) was resumed and vocational schools which were closed down during that period were reopened and provided greater thrust (Ding, 2010). In other words, in contrast to India, there was a deliberate and conscious policy to provide education/vocational training for those in the labour force who had limited education/training.

Given high employability of vocational education graduates, government pushed for reforms to encourage students to pursue vocational stream. The government also had the consideration that the expansion of vocational education at the secondary level could help reduce the pressure of enrolments at the general higher education level. The promotion rate of students from senior secondary schools to higher education rose from 27.3 per cent in 1990 to 64 per cent in 1999, 73 per in 2000 and around 86.5 per cent in 2011 (China Statistical Yearbook 2012). The vocational stream at tertiary level accordingly needed to expand to absorb the growing student strength, especially to meet the rapidly growing needs of a manufacturing sector expanding at over 10 per cent per annum.

The reforms in TVET system in China can be broadly classified into two phases. The emphasis of phase one was essentially on expanding vocational education and increasing the proportion of students joining the vocational stream. The reforms typically focussed on school-based vocational education, particularly at the senior secondary level. In the second phase, TVET reforms were undertaken to bring the Chinese education system in line with the transition to the market economy. The growth in labour force coupled with layoffs on account of industrial restructuring of the state owned enterprises also indicated the need for retraining of the laid-off workers in the stream of vocational training. Moreover, with the relaxation of the hukou system, large scale rural to urban migration (because of workers moving out of agriculture) also indicated the need to train them for non-agricultural sectors. The reforms entailed diversification in vocational education and training providers, education and training

[5]The double-track system for education means a system of full-time schooling combined with the system of part-time work and part-time study. The double-track system for labour refers to a combination of the system of the eight-hour day in factories, rural areas and government offices with a system of part-time work and part-time study in factories and rural areas.

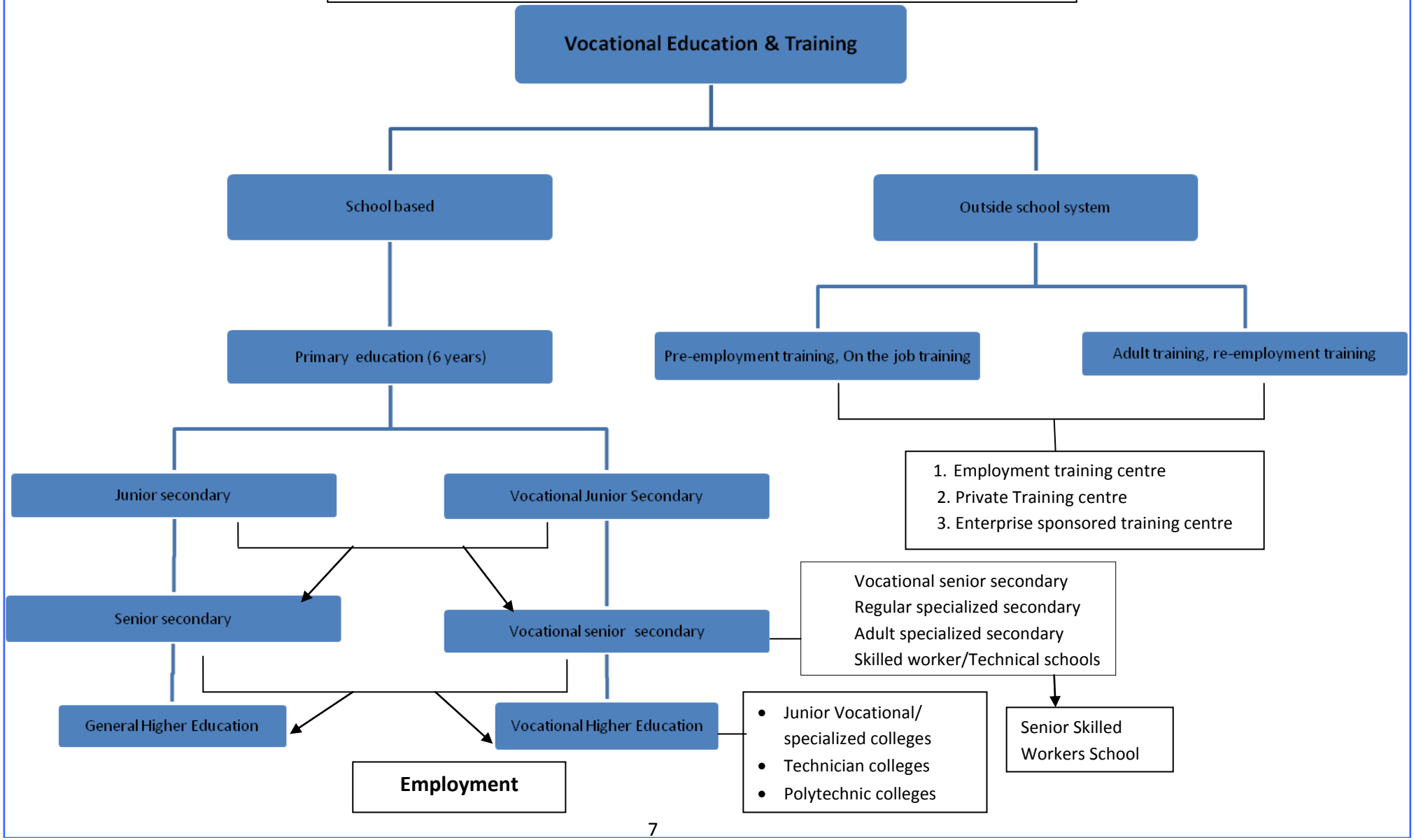
levels, forms etc, which was evidenced in a large number of new job training centres and higher vocational institutes being set up in the late 1990s (Ding, 2010).

The Labor Law enacted in July 1994 which came to be implemented with effect from 1st January, 1995 also gives due recognition to vocational education and training, and the role of enterprises in its effective implementation: "The general provisions of the Labour Law stipulate that the State shall take all measures to promote employment, develop vocational education and that workers shall upgrade their vocational skill. At the same time, the Law has a special chapter, Chapter 8, on vocational training, which clearly specifies the responsibilities to be borne by the State, government at all levels, employers and workers for the development of vocational training" (MOHRSS presentation).

The 1996 Vocational Education Law of the People's Republic of China was a landmark initiative by the government. The Law was enacted with the vision to implement a strategy for reviving China's industrial growth through promotion of science and education, with important thrust towards vocational education to improve the quality of their workforce. According to the Law, VET is an important component of China's education system.[6]

[6]India's 12th Five Year Plan chapter (vol 3, chapter 24) on Employment and Skill Development also makes the case for a Vocational Education and Training Law in India (Planning Commission, 2013).

Figure 1: TVET System in China - School and Out of School System



Box 1: Article of Vocational Education Law of China

The following articles of the 1996 Vocational Education Law summarize the commitment of the State towards vocational education:

*"**Article 3:** Vocational education is an important part of educational undertakings of the state and an important way to promote the economic and social development and the employment.*

The state shall develop the vocational education, push the vocational education reform, raise the quality of vocational education, establish and improve a vocational education system that keeps abreast of the market economy and social progress.

***Article 4:** Vocational education shall follow the state's educational policy, giving the education receivers education on ideology, politics and vocational ethics, teaching vocational knowledge, developing vocational technical abilities, conducting vocational directions and raising the quality of the education receivers in an all-round way.*

***Article 5:** Citizens shall have the right to receive vocational education.*

***Article 6:** People's governments at various levels shall incorporate the development of vocational education into the planning of the national economy and social development.*

Trade associations, enterprises and institutional organizations shall perform their duties to carry out vocational education in accordance with law.

***Article 7:** The state shall adopt measures to develop rural vocational education and support the minority nationality regions, remote border areas and poverty-stricken areas to develop their vocational education.*

The state shall adopt measures to assist women in receiving vocational education, organize the unemployed to receive vocational education in various forms and give aid to the development of the vocational education for disabled people."

It is clear from this overview that the Chinese TVET system has been designed in a very systematic manner. It derives its comprehensiveness from the careful planning which takes into account every aspect of vocational education and training – vocational education in secondary schools, in higher education colleges, vocation training in training centres, adult training and retraining for those already in labour force, training of vocational trainers, curriculum design, industry participation and financing of VET (each of which we shall discuss in greater detail later).

The Vocational Education Law of 1996 provides the legal framework for the implementation/functioning of the vocational education and training system in the country.[7] It also elucidates the roles and responsibilities of the Ministry of Education and Ministry of Human Resources and Social Security (two main ministries responsible for TVET, of which the latter is erstwhile ministry of labour) on the one hand, and local governments, vocational training providers and industry/private participation on the other. The 1996 Vocational

[7]India lacks any such law, and it is for this reason that the 12th Plan makes the case for the enactment of precisely such a law in India. For reasons why such a law is needed urgently, see further discussion in this paper, as well as in 12th Plan document itself (Planning Commission, 2013).

Education Law also requires that 20 per cent of the annual education budget should be allocated to vocational education and training (Lai et al., 2011). Fiscal decentralization is a defining characteristic of the Chinese system of governance (in contrast with the situation in India, where the responsibility rests mainly with provincial, and to a lesser extent, central governments). The autonomy of local governments[8] plays an important role in the implementation of vocational education, for vocational education at the secondary and senior secondary level is the responsibility of township and county governments, while higher education is under the central government's responsibility.

Box 2: Local governments - leading the work in vocational education

The 1996 Vocational Education Law validates the role of different levels of government in vocational education:

"***Article 11:*** *The education administrative department of the State Council shall be responsible for the overall planning, comprehensive coordination and macro-control of vocational education.*

... Local people's governments at the county level and above shall strengthen the leadership, overall coordination, supervision, direction and assessment with regard to the work of vocational education in their own administrative regions.[1]

Article 18: *People's governments at the county level shall, in accordance with the needs of overall, coordinate development of rural economy, agricultural science and technology, and rural education, conduct vocational education in various forms, develop training of practical technologies and promote the development of rural vocational education."*

Therefore in line with the provisions in the Act, significant progress has been made in vocational education in rural areas of China with vast expansion and improvement in both quantity and quality. The following chapters highlight more on these issues.

[8]On which see Vazauez, Ivanyuva and Shah (2010), Lin and Liu (2000) and Mehrotra (forthcoming).

CHAPTER II

China's Technical and Vocational Education and Training System

The Chinese TVET system is complicated but a comprehensive one which is systematically planned to meet the needs of vocational education and training at different levels. The TVET system can broadly be divided into two institutional settings consisting of education in schools and vocation training, which corresponds with the administrative responsibilities of the Ministry of Education (MOE) and Ministry of Human Resources and Social Security (MOHRSS). The formal school based vocational education, which is typically under the MOE, has a slight emphasis on theory based training; while the other component, which is under MOHRSS, focuses on post-school, pre-employment, and on-the-job practical training, and training and re-training for those out-of-school or out of work. However, both offer a very significant amount of practical training to the students/trainees. Thus, even senior secondary vocational school students spend the last of their three years in the vocational stream education in practical training. Hence, industry participation is a built-in characteristic of the entire TVET system.[9]

The responsibility of VET administration in the Ministry of Education is further divided between Department of Higher Education which is in-charge of VET colleges and institutes including polytechnic colleges, specialized junior colleges, adult higher education colleges; and the Department of Vocational and Adult Education which is responsible for the different categories of VET schools (discussed in the later sections). Similarly, in the Ministry of Human Resources and Social Security, the Department of Vocational and Occupational Capacity Building is responsible for administration of VET programmes in technician colleges and skilled worker's schools (discussed later). The department is also in-charge of formulating occupational skills standards, assessing skills qualifications and issuing occupational/professional licenses (Hao, 2012). While the Ministries have the role of strategic planning and policy making, regional co-ordination, setting VET standards, and curriculum development, the respective departments of education and labour at the local level, however, are responsible for daily administration including budget allocation and management of personnel of state-run VET institutions.

Vocational Education and Training in the School System

VE during the compulsory schooling years

Vocational education in the school system is provided at junior secondary, senior secondary and tertiary levels. Students in the age group of 12-14 years get exposed to vocational education for the first time at the junior/lower secondary level. The junior secondary level (class 7-9) education is part of the 9 year compulsory education, after the 6 years of primary

[9]In India, neither the vocational stream offered at senior secondary level requires any practical training, nor is there a mandatory practical training time requirement in the ITIs. This complete contrast shows in clear terms why neither senior secondary vocational education nor ITI training ensures employability (see the detailed analysis, based on national level surveys conducted in 2011 by IAMR for the Planning Commission (Mehrotra, 2014, Oxford University Press).

education. Aimed at training peasants and workers in other sectors possessing basic professional knowledge and some skills, vocational education at the junior secondary level imparts them technical education and training. Traditionally, they have been located in the rural areas to meet the needs of developing the rural economy and training the rural workforce. Depending upon the discipline of study, schooling in junior secondary level lasts for 3 to 4 years.[10]

Not much prominence has been given to vocational education at the lower secondary level and the junior secondary vocational schools are only a small proportion of all the vocational schools in the country. Their number has been consistently declining over the years, and there were only 335 junior vocational schools in 2006 as per MOE, 2007 data (as cited in Ding, 2010). As mentioned earlier, vocational education at primary level through junior secondary vocational schools is fading away. In 2010, there were 67 vocational middle/junior secondary schools with an enrollment of 10,885 students (UNESCO, 2012). According to China Statistical Yearbook 2012, there were only around 54 vocational junior secondary schools in the year 2011 (Table 1). With 11,823 total graduates in 2011, enrollment in junior secondary vocational education accounts for only about one per cent of total junior secondary education. There are no private vocational junior schools (may be because junior secondary education is free under the Nine-Year Compulsory Education Law of 1986). The student-teacher ratio for such schools is around 16.9:1 (Table 2).

At the end of the junior secondary level (i.e. after 9 years of compulsory general academic education), each student is required to undertake the Senior High School Entrance Examination called the 'Zhongkao', the score in which determines the entry into general academic and vocational education schools. Typically, middle school graduates with lower marks end up in the senior secondary vocational stream. About 11.6 per cent junior secondary graduates enter(ed) the workforce directly (2012). Out of the 88.4 per cent continuing into senior secondary education, the proportion of those entering the vocational stream is about 47 per cent. That is, almost half of the junior secondary graduates enter vocational secondary schools.

Table 1: Vocational Education Institutes by level (Primary, Secondary, Tertiary)

Educational Institutes	**No. of Schools**
Primary Education	271804
• Adult Primary Schools	30555
• Junior Secondary Education	56172
• **Vocational Junior Secondary Schools**	54
• Adult Junior Secondary Schools	2055
Secondary Education	83810
• Senior Secondary Education	27638
Vocational Secondary Education	13093
• Regular Specialized Secondary Education	3753

[10] In a limited number of provinces, there is 5-year primary education and 4-year junior secondary education.

• Adult Specialized Secondary Schools	1614
• Vocational Senior Secondary Schools	4802
• Technical Schools	2924
Higher/Tertiary Education	2762
Colleges with Specialized Courses	1280
• Technical and Vocational Colleges	1143
Institutions of Higher Education for Adults	353

Source: China Statistical Yearbook, 2012

VE at Secondary level

Vocational education at the secondary level refers to education in senior high schools. In 2011, there were about 13,093 schools under vocational secondary education (China Statistical Yearbook, 2012).[11] These schools are classified into four categories depending upon their sponsoring organization and trades/subjects taught – regular specialized secondary schools (SSS), adult specialized schools, senior secondary vocational schools (SVS) (all under the Ministry of Education), and technical schools, also known as skilled workers schools (SWS) (under the Ministry of Human Resources and Social Security). Originally modelled after the Soviet educational system, the SSSs and SWSs were established in 1950s to meet the needs of economic expansion.

The specialized secondary schools (under MOE) provide 3- year certificate course for skilled and management personnel in the services sector, in the fields of medicine and health care, educational professions, industrial technology, finance and economics, politics and law, etc. The graduates of these schools are more likely to enter the labour market directly.

The skilled workers schools (SWSS),also known as technical schools (under MOHRSS), also offer 3-year certificate course to train workers (with some level of skills) with knowledge and training required for working in the manufacturing sector and state occupational license qualification.[12] The graduates from SWSs being capable of practicing and operating machines get directly engaged in production activities. In the 1960s, in line with China's economic development and to meet the growing needs of manpower training in all economic sectors, agricultural secondary schools along with other vocational schools were developed.

Secondary vocational schools (under MOE) which were set up and promoted in 1980s (to enable the senior secondary schools to meet the needs of socialist modernization), on the other hand, serve a wide variety of fields in the services sector, such as commerce, information technology, legal work, traffic service, and management (Ding 2010, UNESCO presentation). The graduates from secondary vocational schools either enter the labour market or progress further to polytechnic colleges. The last category, which is adult specialized schools, provides full-time or part-time courses for those who want to pursue senior

[11]However, as per Ministry of Education's 2012 data, there were 12,663 vocational secondary education schools.

[12]The state occupational license system was launched in 1993 by the Ministry of Human Resources and Social Security) under a State Council instruction. The system consists of 3- class categories for skilled workers and 2- class categories for master skilled workers. Authorized by the MOHRSS, the China Occupational Skills Test Authority (OSTA) is responsible for the classification, test and certification of occupational skills in China (Hao, 2012).

secondary school education. Most short-term courses of occupational and technical training can be grouped into this category (Hao, 2010).

In 2011, there were 3,753 specialized secondary schools (risen from 3,065 in 2003), 4,802 senior secondary vocational schools (fallen from 6,843[13] in 2003), 2,924 skilled workers schools, and 1,614 adult specialized schools (Table 1). These also include 2,856 private vocational secondary schools with total enrolment of over 2.7 million and graduates averaging 0.9 million in 2011.

The student-teacher ratios for vocational schools at the secondary level are shown in Table 2. Compared to the student-teacher ratio of around 17:1 in case of junior secondary vocational schools, student-teacher ratio is around 9:1 for vocational education at the secondary level. It is for most part accounted for by the low student-teacher ratio of 8:1 in case of vocational senior secondary schools which are 37 per cent of all vocational schools at the secondary level. It is interesting to note that student-teacher ratio for privately run secondary vocational school (2,856 in number) is 28:1 (China Statistical Yearbooks, 2004 and 2012).

Table 2: Student-Teacher Ratio in Vocational Education Institutes, by level

Vocational Education Institutes	Total Enrolment	Full-Time Teachers	Student-Teacher ratio
Vocational Junior Secondary Schools	25966	1541	16.9
Vocational Secondary Education	8138664	881938	9.2
· Regular Specialized Secondary Education	2995725	303864	9.9
· Adult Specialized Secondary Schools	1039639	55192	18.8
· Vocational Senior Secondary Schools	2464262	315472	7.8
· Technical Schools	4304232	192575	22.4
Colleges with Specialized Courses	9588501	412624	23.2

Source: China Statistical Yearbook 2012

Of the 10,169 vocational schools at the secondary level under the jurisdiction of MOE in 2011, 30 are run by Central Ministries and Agencies, 2,856 by private players and the majority, i.e., 7,283, by local government organizations – departments of education and non-education, and local enterprises (China Statistical Yearbook, 2012). By the end of 2012, there were 12,663 secondary vocational schools in China, with 21.13 million students, (Ministry of Education 2013)[14]

Vocational education at the senior secondary level is for a three or four year duration (depending upon the trade), of which the last year entails field training at the enterprises in the related subjects/trades. According to Article 23 of the 1996 Vocational Education Law: "*In conducting vocational education, vocational schools and vocational training institutions shall integrate education with production, serve the local economic development, and maintain close ties with enterprises and train practical personnel and skilled workers.*

[13] In 2003, the estimate of vocational secondary schools also includes junior secondary vocational schools.
[14] http://chinalabourmarket.com/employment-of-vocational-graduates-above-96-percent.html

Vocational schools and vocational training institutions may run enterprises or training places regarding vocational education."

In line with the requirements of the Law, industry participation is sought at various levels in imparting vocational education and training. Apart from the one-year practical training in the final year of senior secondary vocational education, some of the enterprises (strongest linkage observed in case of enterprise sponsored schools, or demonstration schools15[15] under some collaborative partnership with firms) also participate in curriculum design, teacher training, provision of training equipment in the schools, and placing students for internship etc. However, most of the school and college authorities feel that lack of industry participation is one of the biggest challenges that the Chinese TVET faces.[16]

The curriculum of a senior secondary vocational school is designed such that, one third includes general academic skills defined nationally by the Ministry of Education, another one-third is again nationally defined content associated with the particular occupation, and the remaining one- third defined again with respect to the occupational field is determined locally at the school level with the help of local enterprises. On completion of vocational education in schools, graduates receive a certificate issued by MOE and a vocational certificate on passing a practical exam for their respective occupational skill by MOHRSS (OECD, 2010).

With greater thrust on senior secondary vocational education, there has been an expansion of secondary vocational graduates. During the l5 years between 1980 and 2001, the proportion of regular senior high school students among all the students in senior secondary education decreased from 81 per cent to 54.7 per cent, while the proportion of secondary vocational school students increased from 19 per cent to 45.3 per cent. In other words, while the share of all students who entered the TVET system after completing 9 years of compulsory general academic education was already way above the Indian average of about 5 per cent of all students today at roughly the same age,[17] that share was already five times as much in China in 1980. It has risen to half of all students, and all children were completing 9 years of compulsory education by 2008.

The employment rate of secondary vocational school graduates reached 96.85 per cent in 2012.[18] Around 3 million secondary vocational school graduates or 57.6 per cent of the total 6.6 million such graduates get employment in the services sector (2012). The proportion has

[15] More on these schools in chapter 3

[16] The scale of the challenge of industry participation is however much larger in case of India. In china, the 1996 vocational education law does provide, albeit, too generic guidelines for participation by local enterprises.

[17]This estimate is based on the fact that not more than 3% of all children attending senior secondary schools (not the entire relevant age cohort, since gross enrolment ratio at that age is barely 35% in 2010 at that level), plus the children who enter ITIs after completing class 10. Vocational education programmes are equipped to accommodate a maximum of only 5 per cent of secondary school graduates compared to China, which has the training infrastructure to vocationally train more than 50 per cent of their secondary school graduates (BCG –CII, 2013).

[18]By contrast, the graduates of the vocational stream at senior secondary school level are rarely able to get employment, since they barely acquire any competency worth the name to make them employable, the employment rate of ITI graduates in the IAMR survey was 71% a full 18 months waiting after they had graduated (not much different from earlier estimates by the World Bank, 2009 or ILO, 2003).

risen from 53 per cent in 2011. Those who were employed in primary and secondary industries accounted for 8.9 per cent and 33.4 per cent of the total graduates.

VE at tertiary level

After completing senior secondary vocational education, most graduates join the workforce. However, some progress to higher vocational colleges. In principle, horizontal and vertical mobility of VET graduates is allowed because of the National Level College Entrance Examination (*Gaokao*). But most of them, except for some Arts graduates from vocational schools (entering Arts vocational colleges) find it difficult to qualify for higher education general academic stream.

Higher vocational education gained thrust in the 1990s after the reorganization of some adult education institutions and expansion of the senior secondary vocational schools. Advanced Skilled Workers Institutions (ASWIs), Junior Vocational Colleges (JVCs) and Vocational Universities are the main institutions that undertake higher vocational education. Most of the colleges or universities offer two-year vocational education (similar to diplomas offered by polytechnics in the Indian case) and training, and only a few of them have bachelor's programme. Two such vocational higher education colleges visited by the team were Shanxi Engineering Vocational College and Chongqing Real Estate Vocational College (more detail in the next chapter).

Tertiary vocational education lasts 2 to 3 years and vocational higher education institutes enroll graduates from both the regular high schools and secondary vocational schools. The link between secondary and tertiary vocational education and provisioning various training programmes has been planned such that vocational education is not perceived as a 'dead-end'. As a result, in recent years, the proportion of graduates from secondary vocational schools has been increasing in China to continue into higher education. This is an issue that plagues the graduates of industrial training institutes in India, who do not find enough opportunities for upward mobility even within the vocational education system.

Institutions providing tertiary vocational education are divided into four-five categories. The first is the higher vocational technical colleges or polytechnic colleges which provide 2-3 year diploma courses of occupational and technical training; the second is technician colleges or master skilled worker colleges which provide 2-3 year certificate courses specially designed for the state occupational license qualification for master skilled workers and technicians; the third is the tertiary vocational education provided in some regular higher education institutions and adult higher education institutions (i.e. normally the universities)[19](there are only a small number of such normal colleges – specialized junior colleges which provide 2-3 year diploma courses for capacity building rather than technical training); the fourth are short-circle/cycle practice-oriented vocational colleges offering 3-6 months diploma courses; the last is the restructured institutions (adult higher educational institutes) offering 2 to 3-year full time or part time certificate courses for capacity building,

[19] For instance, the IAMR team visited two such universities: the Beijing Normal University and the Chongqing Normal University.

knowledge enrichment, or self improvement. In addition, there is provision for 5-year higher vocational courses (instead of the normal three-year senior secondary vocational cycle) provided in the specialized senior secondary schools (MoE, PRC October 20 2006; Hao, 2010, and UNESCO presentation).[20]

In 2011, under the Ministry of Education, there were 1,280 colleges with specialized courses with an enrollment of 3.2 million. Apart from these, there were 353 institutes of higher education for adults. There were 1,143 vocational and technical colleges. Of these, only 2 were under the Central Ministries other than MOE and 301 run by private agencies. About 840 vocational and technical colleges were run by local departments – departments of education (333) and non-education (458), and local enterprises (49) (China Statistical Yearbook, 2012).

With the expansion of vocational education, even research on vocational education has been enhanced and a number of vocational education research institutions have been established carrying out various forms of vocational education research at different level.

Vocational Education and Training outside the School System

Apart from the Diploma system of the Ministry of Education, there also exists the Ministry of Human Resources and Social Security's vocational qualification system. This functions on the basis of an occupational classification, and testing of occupational skills after vocational training to issue a vocational qualification certificate. The first Directory of Job Classification of the People's Republic of China was published in 1992 including 46 trades (industries) concerning 4,700 jobs. The Occupational Classification Dictionary was later published in 1999.

As per the Vocational Education Law, vocational training includes pre-employment training, apprenticeship training, on-the-job training, re-training for laid-off workers, and training for army men transferred to civilian work. It is conducted through employment training centres of MOHRSS, enterprise-sponsored training centers, and non-governmental vocational training organizations.

Technical schools also known as Skilled Worker Schools are the main providers of training for skilled workers. Employment training centres run by the local Human Resource and Social Security Bureau are the main means of providing training for unemployed job-seekers, laid- off workers, and migrant workers. Then there are Enterprise-sponsored training centres committed to improving knowledge base and skills of their employees. Finally, there are the training providers of the private and social organizations or individuals which deliver on-the-job training and other training programs. The following table (adapted from Ding, 2010 and Lai et al., 2011) shows the number of various vocational training providers in 2006.

[20] http://www.china.org.cn/english/LivinginChina/185280.htm

Table 3: Number of Vocational Training Institutions and Trainees in 2006

Type	Training Institutions	Number of trainees (in 10,000 person)	
Technical schools/SWSs	2855	270.3	Pre-employment training for Out of school : 20.3 Laid off and unemployed persons : 46 Migrant rural workers : 48.2 Employees/Workers : 127.6 Others : 28.2
Employment training centres (Job centres)	3289	797.2	Pre-employment training for Out of school : 72.8 Laid off and unemployed persons : 340.9 Migrant rural workers : 262.7 Others : 120.8
Private/Civilian-run training centres/NGOs	21425	1905	Pre-employment training for Out of school : 98.8 Laid off and unemployed persons : 159.1 Others : 837.1
Enterprise-sponsored training centres	22000	3000	Employees/Workers

Source: Adapted from Ding, 2010 and Lai et al., 2011

Industry participation has been historically built into the vocational education system of China because of large presence of State-owned enterprises. The last row in the table above shows that enterprise-sponsored training centres are still a very important part of the entire TVET system in the country.[21] The notable point here is that over 90 per cent of Chinese firms provide in-firm training. So the enterprise-sponsored training centres are in addition to the in-firm training being provided.

Box No. 3: Vocational Education Law

Industry participation in vocational education and training is ensured through the 1996 Vocational Education Law.

"*Article 20****:*** *Enterprises shall, in accordance with their actual situation, provide vocational education in a planned way for their staff, workers and persons to be employed. Enterprises may jointly run or run on their own vocational schools and vocational training institutions; they may also entrust vocational schools or vocational training institutions with the vocational education of their staff, workers and persons to be employed by them.*

*Article 29****:*** *If any enterprise fails to conduct vocational education in accordance with Article 20 of this Law, the local people's government at the county level or above shall order it to make correction; if the enterprise refuses to make corrections, the vocational educational funds that the enterprise should bear may be collected, and such funds shall be used for vocational education in the locality."*

[21]The contrast with India is again notable. Mehrotra (2014,OUP) estimates that only 20% of all Indian formal sector enterprises provide any form of in-firm in-house training, which is among the lowest in the emerging market economies.

[22] During the time of writing of the report

Training of vocational education teachers/trainers

Another important aspect of the Chinese TVET system is training of teachers and instructors at vocational schools to be at par with new technologies and needs of modern industry. There are strict requirements in respect of teachers being hired at vocational schools and colleges. Teachers for vocational education are mostly graduates from regular higher education institutions. Teachers hired to teach at the senior secondary level must possess undergraduate degrees and those who are to teach in vocational undergraduate colleges must themselves be postgraduate degree holders in that particular field and also obtain the occupational certificate in that respective trade.

Since 1989, over 160 higher education institutions (HEIs) have established departments, specialties or classes devoted to the training of vocational education teachers. At the same time, the government began the establishment of teacher training bases for vocational education. There are over 50 training bases set up by vocational technical colleges which are affiliated to HEIs and over 200 bases set up by central departments and local governments. As a result, a network of training bases has basically taken shape, meeting the needs of teacher training for vocational education of various forms and at various levels (MoE, PRC October 20, 2006).

In addition, teachers in vocational schools are required to undergo one month in industry each year, or two months every two years for their career progression and promotion. During this time, they are provided with financial support from the school authorities. In addition, employees from industry are also hired as part-time teachers.[23]

Vocational Education/training for adults in the workforce

In their thrust for lifelong learning, Chinese education policy gives due recognition to adult literacy and training, the same is also provided for in the 1996 Vocational Education Law. This also has implications for rural to urban migration. At every level of education, from primary level, there are institutes/schools/colleges for adults (see Table 1).

In the 12th Five Year Plan (2010-2015), it is expected that 8 million rural people will move to cities every year. Rural absorption in urban centres is addressed by developing township and village enterprises and restricting rural and urban migration of untrained workers. This has been achieved through adult literacy programme run by county, townships and village schools and TVET geared towards rural development programmes. In addition, for rural workers engaged in agriculture, government provides applied technical training in agriculture which includes green certification training and entrepreneurship training (Potter, 2011, UNESCO, 2012). In 2011, there were 1,03,420 technical training schools for adult farmers with around 35 million registered participants. Of these, majority of the schools were run by education departments and collectives of the villages (Table A-8). The strong extension system, coupled with training for rural agricultural workers not only improves agricultural

[23] Collaboration with Chinese training institutes to send Indian vocational instructors for their training can be given some thought.

production, but also provides an incentive for the rural workers to stay back rather than migrate to cities.

Coordination between the Education Ministry and Ministry of Human Resources

In principle the two ministries exercise their responsibilities independently. However, for the effectiveness of the TVET system, there is need for co-ordination and co-operation between the two ministries. Recognizing the importance of co-ordination between the ministries, the government of PRC has taken various measures. The National Guidelines of Education Reform and Development (2010) states that the responsibility of co-ordination and administration of VET programmes is that of the education authority. In this context, even the reorganization of the Ministry of Education into the Ministry of General and Vocational Education by taking the entire responsibility of TVET from the Ministry of Human Resource and Social Security had been suggested by some of the experts. Another option being considered is the setting up of an independent ministry for vocational education. Meanwhile, a temporary arrangement as approved by the State Council in 2004 is the establishment of an inter-ministerial liaison meeting mechanism to co-ordinate the activities of the seven ministries responsible for VET[24] (Hao, 2010). This mechanism was adopted to improve the communication between all the ministries involved in provision of TVET. India faces a similar challenge of facilitating co-ordination among the 21 ministries involved in providing vocational training. The National Skill Development Policy of 2009 laid specific skill targets for these ministries to achieve by 2022.

In addition, co-ordination is needed between different stakeholders and providers of VET. For instance, in 2007 the government of Chongqing introduced a special policy to encourage the co-operation and co-ordination on vocational education between VET providers and sectoral associations. As a result, Industry Co-ordination Committees (similar to India's Sector Skill Councils) for sectors like automobile, electronics, retail, construction, tourism, health care, agriculture and dam resettlement, were established (Hao, 2012 Comyn and Barnaart, 2010).

[24]Ministry of Education, National Development and Reforms Commission, Ministry of Finance, Ministry of Human Resource and Social Security, Ministry of Personnel, Ministry of Agriculture and Poverty Alleviation Office

CHAPTER III

Key Reforms and Achievements in Chinese TVET System

After Cultural Revolution China had to rebuild its education system in the late 1970s and in early 1980s. In 1977 China resumed the university education and in 1980 a decision was taken to allow local non-government's financing of schools as a way of mobilizing community resources. This led to a major reform in 1985.The Chinese government has decentralized education which led to growth in the number of schools and China achieved the target of universal primary education in just few years.

In 1986 China enacted the law of compulsory Education. According to this law, every child is to complete nine years of formal schooling. By the mid -90s China had achieved this goal. The 1985 reform led to a huge regional disparity due to differences in local economies. After serious debate on degree of decentralization, in 2006, the revised law of compulsory education was enacted. Having achieved the universal primary education and compulsory formal schooling up to 9 years of age targets, China focused its attention on higher education and in 1999 it decided to expand the intake capacity of schools. All institutions across the nation were required to increase the intake of students by 50%. This was followed by 25 per cent increase in 2000 and a further 22 percent in 2001.[25] The net result of this is that China has the largest number of higher education students in the world (UNESCO Institute of Statistics, 2009).

While expanding educational facilities in 2002, China passed a legislation to encourage private institutes which also started in large numbers. These schools are called "Community schools". Many private schools have former government officials or party secretaries/members on their board. Though private institutes are encouraged, the Government monitors their functioning through the presence of party members in the board.

To meet the challenges of China's industrialization drive, the government has from time to time taken initiatives to reform China's TVET system.[26]

In 2005 the state council issued "Decision on making great efforts to develop vocational education".

Despite constant strides in reforming the education and skills training, the overall knowledge and skills levels are still low for China's large labour force. Ministry of Human Resources and Social Security for 2008 estimated that only half of the 140 million employees in urban enterprises in China could be classified as skilled. Among these skilled workers, 60 per cent

[25] http://www.oecd.org/countries/honkong.China/46581016.pdf

[26] The State Council Decision on Vigorously Promoting the Reform and Development of VET (2002); State Council Decision on Accelerating the Growth of VET (2005); Employment Promotion Law with VET promotion provisions (2007); the 12th Five Year Plan (2010-2015) with VET promotion provisions (2010); the National Long and Medium-Term Planning Outline of Education Reform and Development (2010-2020) with VET promotion provisions (Ministry of Education 2010); the Action Plan of Secondary VET Reform and Innovation (2010-2012) (Ministry of Education 2010); the Amendment of the Vocational Education Law (in process) (Hao, 2012).

possessed junior certificates, 35 per cent intermediate certificates and 3.5 per cent senior certificates. The comparable skills mix in industrialized countries is 15 per cent, 50 per cent and 35 per cent respectively. In the 2008 survey of the China Human Resource Market Information and Monitoring Centre (under MOHRSS), the ratio of new vacancies to job-seekers stood at 1.08 on average in 101 cities. The ratio was highest in case of senior engineers at 2.29, 2.19 for master skilled worker, 1.89 for senior master skilled worker, 1.72 for skilled worker of senior level, 1.61 for engineer, 1.58 for technician, 1.52 for skilled worker of junior level and 1.47 for skilled worker of intermediate level. When around 55 per cent of all job-seekers undertook VET courses and possessed technical or skill certificates, it implies that nearly half of the jobseekers did not have proper training for jobs (Hao, 2012).

Moreover, the global financial crisis which strongly hit Chin's exports, resulted in tens of millions of workers jobless or laid-off. In 2007, China had more than 5 million laid-off workers who were unemployed and 8 million as surplus rural labour.

In early 2009, the Chinese government designated VET as the next target of education to bit the emerging challenges. Even in China (like in India), vocational education enjoys low status. Taking this into account, in the Master plan 2010-2020 to boost the appeal of vocational education it was decided to provide free secondary vocational education and subsidies to students from poor families. Further, the government introduced a dual-certificate system under which students earn both a diploma and a professional qualification.

Prior to the Vocational Education law, the preference of the parents as well as students was on general education. Rural families had agricultural land but did not possess skills to increase productivity. For rural labourers who choose to stay in agriculture sector the government provided technical training in areas like Agriculture production, Manufacturing, Food production, Poultry, fruits, Dairy products etc. China has 386 agriculture schools in the country as a whole. The farmers are provided green certification training and entrepreneurship training with a combination of classroom instruction and training in the field. By providing vocational education training in agriculture related activities China has addressed two issues successfully: (1) it could arrest rural-urban migration; and (2) also increased its output and made farmers more competitive in the world market.

Despite various reforms and initiatives taken by the Chinese government in the TVET space, the State Council's Report in 2009 highlighted the challenges still facing the TVET sector which are as follows:

(i) Underdeveloped VET which failed to produce sufficient and qualified manpower to meet the needs of China's socio-economic development;
(ii) Defects in VET administration and management systems at macro and micro levels;
(iii) Lack of co-ordination between tertiary and secondary VET, and between VET and general education.
(iv) Poorly designed courses and curriculums which are also not well targeted for practical employment needs (despite provisions in the Law, VE school

administrators felt that stricter provisions were needed in the VE Law to encourage enterprises to participate in VET);

(v) Shortage of teaching personnel and unsatisfactory teaching quality; and

(vi) Inadequate resources and poor facilities (Hao, 2010)

To address the challenges as outlined by the State Council, various steps were taken in the form of: 2009 State Council report on VET Reform and Development, the 12th Five Year Plan (2011-2015) and the National Medium and Long Term Planning Outline of Education Reform and Development (2010-2020).

The 2009 State Council report proposes 9 major policies to promote VET in China. It emphasised that the growth target of the VET sector should be embodied in the government's socio-economic development plans at national and local levels. It targeted that 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; and trainees of all off-campus VET courses should reach 150 million persons. In addition, it aimed at strengthening the supervision of educational authority, especially in areas like the enforcement of VET access, regulations and certification rules; and to launch public education and awareness programme to attract public attention and support of VET (Hao, 2012).

According to the Master plan for National Medium and Long-term Reform and Development of Education (2010-2020), vocational education should be focused on imparting students with professional, vocational skills, and the capacity to find and create employment.

To tackle the fluctuation of the labour market triggered by the global financial crisis, the State Council issued in 2010 a special document 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.

The 12th Five Year Plan emphasised on greater promotion of VET, especially in the rural areas. The Plan envisaged that efforts will be made to encourage the approach that combines classroom teaching with workplace training, cooperation between VET schools and enterprises, and on-the-spot apprenticeship training. A new initiative entitled "the VET Basic Capacity Building Project", was also planned to be launched in 2011 to expand VET training and practice bases, to identify exemplary VET schools at tertiary and secondary levels, and promote "the Dual Qualification Programme" among VET teachers. Dual qualifications imply certification in both teaching and occupational skills. 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 labour market entrant at least one opportunity of basic skills training, every on-the-job worker at least one opportunity of skills upgrading training, and every potential entrepreneur at least one opportunity of business start-up training (Hao, 2012).

This resulted in curbing rural migration, increased enrolment and agriculture output as students from rural areas go back to their native place after acquiring the skills as China developed its vocational education by integrating agriculture, science and education.

In line with the planned transformation in growth model and industrial upgradation in the 12th Five Year Plan, the Chinese government envisages a new development strategy to upgrade the labour force which earlier used to be concentrated in low end manufacturing. Through VET the Plan aspires to achieve innovation driven, knowledge based and environment friendly economy.

Through vocational education law China ensured cooperation between vocational institutes/schools and society, enterprises and villages, and became market oriented through methods such as learning and practice, learning while working, emphasizing on practical and vocational competence skill. The Master Plan 2010-2020 states:

> *"Laws are to be made to institutionalize cooperation between schools and enterprises. The entrustment of vocational schools to provide employee training will be encouraged. Preferential policies should be formulated to encourage enterprises to take on students as interns and teachers for the purpose of practice in their respective fields and encouragement should be given to enterprises to increase investment in vocational education".*

The industry is offered tax breaks and subsidies in acquiring land. In return the industries invest money in the vocational schools and provide equipments. Industry participates in the vocational education and training in China in multiple ways. The vocational institutes run tailor-made modules where the objectives are made according to enterprise's demand and the students are sent to those industries where there is real demand. If the private enterprise is in need of labour force then it will impart training free of cost and absorb the students. The enterprises in China provide equipment and their staff to teach in vocational colleges/schools. According to Vocational Education Law, it is a legal obligation for enterprises to provide VET courses to their employees (see picture 1).The study team observed industry participation in VET and employees of the enterprises getting trained in the Vocational colleges/institutes in their visit to Haihe Education Park in Tianjin.

Picture 1

Tianjin is only one of the four cities (the other three being Beijing, Shanghai and Chongqing) that are treated like provinces (and the study team visited three of the four, not Shanghai).

Tianjin Educational Park in its 1st phase hosts 7 colleges with 65,000 students and teachers. Specific skills imparted are: Electronics information vocational technology, Apparatus and Radio Technology, Electronics information advanced Technology, Maritime college, Mechanical and Electrical Technology, Machinery and electric industry, Light industry. This park being the only demonstration area for vocational education reform & innovation has modern, recently constructed schools, trained & qualified persons, first class resources and equipments.

Picture 2

Box 4: Tianjin Sino-German Vocational Technical College

Is a full time public higher vocational college accredited by the Ministry of Education and is one of the 100 National Modal Higher Vocational Colleges in China. The college covers a land of 165 acres with the construction area of more than 2,00,000 square meters, with 13 separate buildings. The college offers 44 specialties which cover 9 fields including advanced manufacturing, automation, aeronautics & astronautics, new energy and new materials, automobile technology and service, information and communication, economic & business management, applied languages, culture creativity and art design. The enterprises absorb graduates of this college immediately and the employment rate of the college keeps above 98%.

This college is the largest cooperation project in the field of vocational education and training between the Chinese government and the Governments of German, Japan and Spain. It is the first one introducing the German Vocational education model.

In collaboration with international top enterprises like DMG, SIEMENS, BOSCH REXROTH from Germany, Mitsubishi from Japan, and Machine Tool Association from Spain, NIIBM from US, China Long March Rockets, Airbus A320 Tianjin Assembly Line (picture 2), the college has built up 166 hands-on training centres and labs which are the integration of 'teaching, learning and practice.

The college has an excellent speciality teaching group, and nearly 80% of the teachers have received foreign training in their specialities and teaching method. The college has one national outstanding teacher, four Tianjin outstanding teachers, one national outstanding teaching team and two Tianjin outstanding teaching teams with over 200 technical experts from the front line in enterprise as well as over 20 foreign experts and teachers.

The funding for fundamental capacity building of TVET is met by local governments i.e. county + provincial Governments, enterprises, social donations and central Governments. The central Government provides funds only for useful national programme. China established National Demonstration Schools, National Demonstration Colleges, National Key Vocational Colleges. By the end of 2001, more than 3000 key and pilot vocational schools have been established, promoting the overall development of vocational education. During 2007-10 the state investment in demonstration schools is CNY10 billion and local government's investment is CNY6 billion. The key schools enjoy high reputation and rich resources for high quality education, effective management, and standardized facilities. In VET institutions, the aim of having Key schools is to set high standards for teaching quality and school management.

Box 5: Chongqing Construction and Real Estate College

This is the only college in China which provides vocational training in real estate. The curriculum of this course includes theory, practice and application to the social needs. The students are taught designing, financing, research & development, sales, management, equipment, environmental art & designing. The college integrates learning with practice in companies. Due importance is also given to highlighting areas of research related to the majors taught in the college.

In 2012, it became a Demonstration College and is the first demonstration college in Chongqing. 30 million Yuan support was given to this college for construction and 450 acres of land was given by the government at very subsidized price.

EG is a big company in construction sector in China. All the students of this college get absorbed in this company.

In China, the most important point to be noted is that the gap between policy and implementation is very low. There is strong leadership and commitment from government as well as enterprise and society. According to Chinese rules, it is mandatory for the staff from enterprises to go to Government schools to teach.

Picture 3

The infrastructure facilities in normal government senior secondary schools are excellent in comparison to Indian ITI, (picture 3). The Chongqing Tourism School is one such

government schools of China. This school is a national leader school in hospitality business in Chongqing with 500 students which supplies majors in Hospitality and Tourism and Cooking majors. Though it is a senior secondary school it has collaborations (see Box-5) with Singapore, South Korea, UK, Australia. The collaborations are not just for equipment and teaching but collaborations also done for organizing international competitions and seminars (Picture 4).[27]

Picture 4

The advanced training facilities training that these students get in real workplace environment (picture 5) make them employable, resulting in over 95 per cent employment rate after completing senior secondary vocational training.

[27]Collaborations in matters of: Development of Curriculum and Learning Resources, Staff & Students Exchanging, Customized Commercial Teacher Training Package, Joint Recruitment, Joint Lecture, Joint Degrees or Qualifications, Dissemination of the Successful Cooperation Model

Picture 5

The commitment for TVET system is uniform in all provinces. The team visited Taiyuan in Shanxi province. Vocational education in this province started getting focus in late 1980s and acquired the same pace as of in other parts of China (Box 6). The placement of the students depends on the local needs. Vocational education is strongly supported by local governments.

Box 6: Taiyuan Financial and Monetary Vocational School

This school runs in two campuses and offers vocational training in computers, finance, accounts, customer information services, cuisine and hairdresser skills. It follows 2+1 model of vocational system. The school has 2,400 students on roll with 56 high professional staff, and 90 middle professional staff.

Because of local support the school could acquire good equipment for training purpose and because of establishing relations with enterprises it could organize campus recruitment and get placement for 550 students. 270 students went for higher Vocational education. Only very few students go out of Taiyuan. The enterprises provide financial, material and equipment support.

The Taiyuan government proposes to start vocational education park with an investment of 1.8 billion and provide VET in 29 disciplines like IT, Mechanical, Manufacturing, Automobile, General category and services. The proposed park will provide training for 30,000 students with 1,800 teachers.

To achieve big strides in vocational education the Chinese system has built a strong teacher training system (Box 7). Since 1989, over 160 higher education institutions have established departments devoted to the training of Vocational education teachers. At the same time the government began establishing teacher training bases for vocational education.

Box 7: Competence Development Programme for Beijing VET Teachers

In 2007, Beijing Municipal Education Commission (BMEC) and Beijing Finance Bureau jointly released the advice on the implementation of the Competence Development Programme (CDP) for Beijing TVET teachers. Since the beginning of 2006 the CDP has invited international vocational experts to give lectures, hundreds of outstanding teachers received training abroad, thousands of part-time teachers took part in the training. During 11th plan period, out of 1,030 outstanding young talented teachers, 59 professional,5 teacher training groups were created to train in the specializations of electrical, information, finance and trade, building materials and agriculture. By 2010 this institute has imparted training to 5,370 teachers. During this period a total of 500 teachers were sent for overseas training. It is one of the long term goals and tasks of VET schools to develop a highly competent professional teaching force with unique strength.

Source: Beijing Academy of Educational Sciences, Institute of Vocational and Adult Education

There are over 50 training bases set up by vocational technical colleges which are affiliated to Higher education institutes and over 200 bases are set up by central departments and local governments. As a result, a training bases network has taken shape meeting the needs of teacher training for vocational education of various forms and at various levels.

Chongqing Normal University (which the IAMR team visited) established in 1954 conducts education and non-education programmes. Apart from providing general teacher training the university provides teacher training for vocational education. The university is a "Key University" and only one in China which imparts training for headmasters and key teachers for VE. The university conducts collaborative programmes with Australia, Germany and Canada. Both future teacher training and in service training are conducted by the university. As per the law, it is mandatory for the teachers in VET institutions to go to industry for at least two months. This training certificate is essential for teachers to obtain promotions. In China there are about 13,000 vocational educational schools and about 9,000 vocational educational institutes. The pass-outs of this university join these schools. To meet the employment challenges the government encourages individuals to establish own enterprises by providing finance. In addition, colleges provide financial support to students after thoroughly going through the project proposal.

The Chinese TVET system is a comprehensive system. They have addressed the issue of skill development from all angles starting from primary level of education to adult education. The Adult vocational education programmes are meant to address multiple careers on demand. These programmes also help in retraining the mass of laid-off workers to re-enter into workforce. For adult vocational training programmes the Chinese system has exclusive institutes (Box 8).

Box 8: The Institute for Vocational and Adult Education (IAVE)

The institute was established in 2000 to meet Beijing vocational education and adult education reforms and development needs. The IAVE's research activities include vocational education and adult education related issues. The institute provides guidance by using foreign vocational model and experience for domestic and international vocational and adult education. It organizes domestic and international training programme for vocational school principals, managers and teachers, and also organizes domestic and international vocational and adult education academic exchange programmes.

The IAVE as the research window of Beijing vocational and adult educational development maintained a broad range of communication and collaboration with the regional institutes and research units at home and abroad.

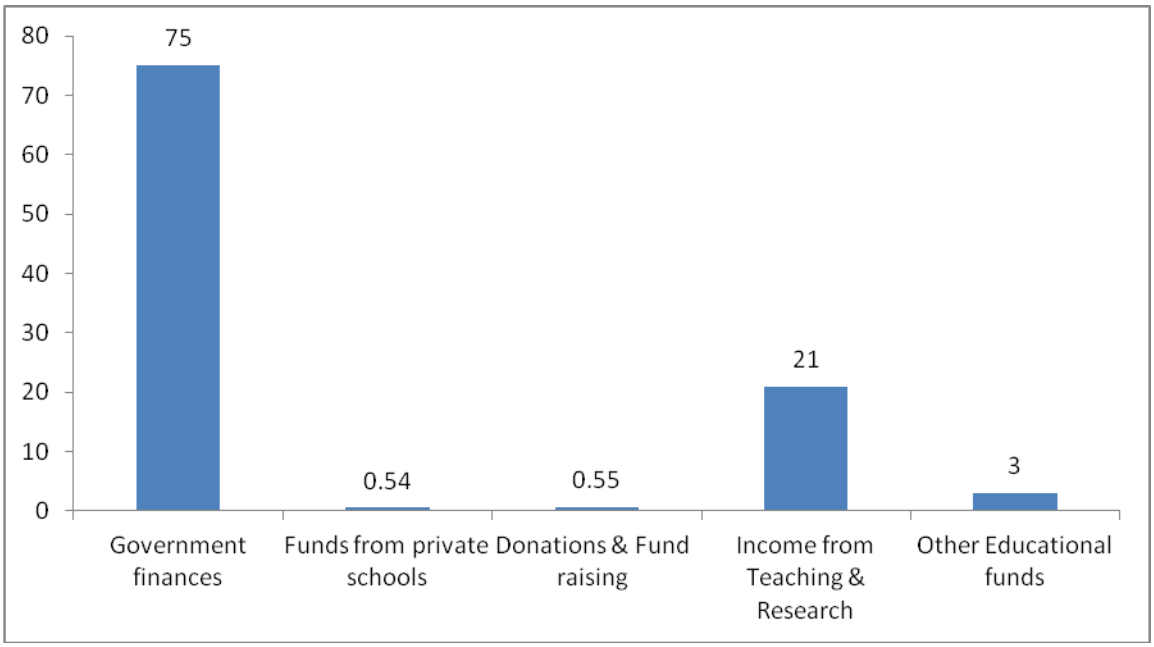
In summary, China achieved large scale expansion in vocational educational training and prepared mass scale teachers for imparting training in TVET institutes. By introducing Demonstration schools/colleges, key and pilot schools it ensured quality in vocational schools.

Teaching reforms were made by collaborating with countries like Germany, Australia, Canada and learning their modern vocational education teaching pattern. By ensuring industry- institute partnership it achieved the market demand and addressed employment issues. Through laws it fixed accountability and managed to regulate growth of private institutes and quality of education in private institutions.

Financing TVET

In a fiscally decentralized economy like China, education subject is under the jurisdiction of the local governments. As much as 89 per cent of the funds for education are raised by the local governments (Tables A10 and A12). In terms of the entire expenditure on education, 75 per cent is on account of government funds appropriated for education (Figure 2).

Figure 2: Sources of funding for expenditure on education, 2010

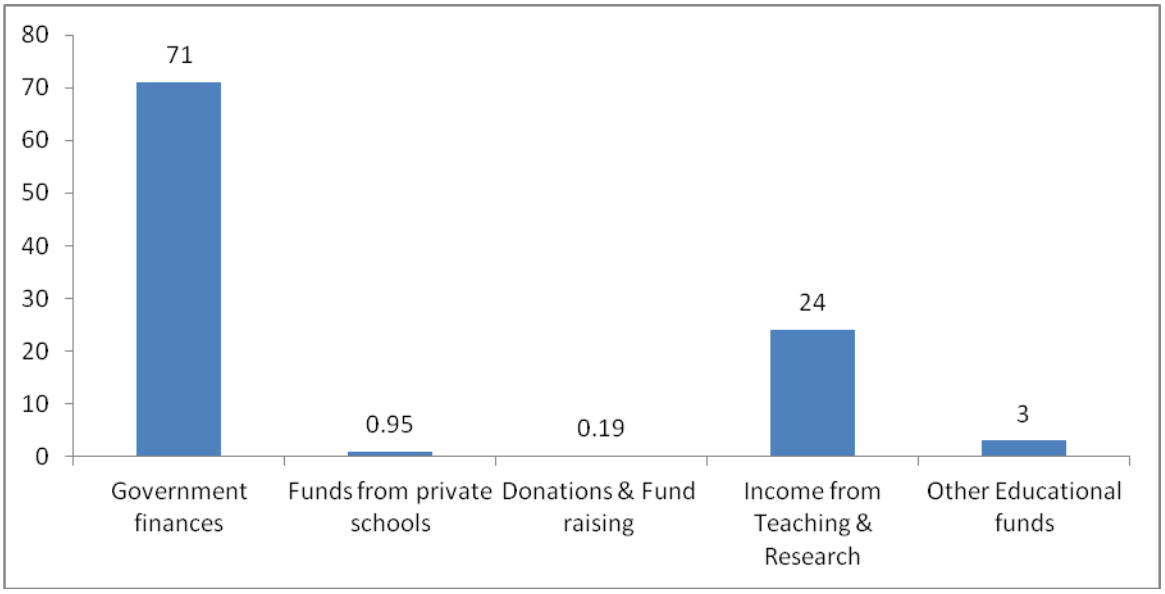


Source: China Statistical Yearbook

As discussed in the previous sections, local governments at the village and county levels (i.e. sub-provincial level) have the responsibility to sponsor vocational education in schools and training institutions. These provisions are also mandated under the Vocational Education Law of 1996. Article 30 of the Law directs the provincial governments, autonomous regions and municipalities to set aside funds for vocational education from the local charges they collect for education under the Education Law. The Law also specifies that the governments may appropriate funds for rural vocational training from the funds earmarked for developing agricultural science and technology. It is also in the Law that students with financial difficulties or disability be provided with tuition fee waiver for vocational education and training.

Over 70 per cent of the funding for vocational schools at the secondary level comes from government finances, almost all of them by local governments. However, it is only in the case of Regular Specialized secondary schools and Technical schools (under MOHRSS) that the share of government finances is less than 70 per cent. These schools receive a greater proportion of funds from teaching, research and other auxiliary activities (Table A11).

Figure 3: Sources of Funding for Vocational Schools, 2010



Source: China Statistical Yearbook, 2012

Typically, the tuition fee for senior secondary vocational schools ranges from CNY 1,200 to 4,000 varying across provinces. For instance, fees in Guizhou province varied from CNY 1200 to1500, but for well- off provinces like Beijing and Shanghai it could be as high as CNY 2000 to 4000 (OECD, 2010). In addition, students also incur some costs (again depending upon the cost of living in the province) on boarding and lodging. To overcome the financial burden on students on account of vocational education fee, the government introduced a national scheme to provide CNY 1,500 per year subsidy to VET students from rural areas to cover their tuition fees and boarding lodging expenses. Most of the provinces however extended this subsidy to all poor students. In Chongqing province the government gives CNY 2000 to all students. Since 2009, however, the government took the initiative to make tuition free of cost for senior secondary vocational school students (ibid). This is why government finances have a higher share in sources of funding for vocational education. Students' contribution in terms of tuition fees therefore does not figure in the sources of funding.

Since the local governments have to raise their own revenues (often by competing for foreign investments) for funding vocational education, the resources of vocational schools depend upon the resources of provincial and county governments. With economic development concentrated mostly around the coastal provinces, schools in rural and poorer provinces remain under-resourced (OECD, 2010).

CHAPTER IV

Lessons for India

The TVET system has been designed in a very systematic manner. It derives its comprehensiveness from the careful planning which takes into account every aspect of vocational education and training – vocational education in secondary schools, in higher education colleges, vocation training in training centres, adult training and retraining for those already in labour force, training of vocational trainers, curriculum design, industry participation and financing of VET. In addition, the Vocational Education Law of 1996 provides the legal framework for the implementation/functioning of the vocational education and training system in the country.

Since India faces similar challenges that administrators have grappled with in China, there are important lessons for India in order to reap the benefits of the demographic dividend available to us until 2040. The efficiency of the Chinese Technical and Vocational Education and Training (TVET) system in improving the skills set of graduates and the state's commitment towards TVET through Law and monetary support to the students are critical in explaining the sustained high growth of manufacturing.

The Integration of Manufacturing and Skill Development

The authors of this report were convinced that if China is a manufacturing giant in the world, it has partly to do with the policy-makers' ability to: a) build a foundation of VET over many years; and b) continuously upgrade the TVET system in response to China's growing manufacturing share in world manufacturing output. India is planning to increase the share of manufacturing in GDP from 16 per cent in 2009-10 to 25 per cent by 2022. India's ability to achieve that goal has been questioned by many since over several decades the share of manufacturing in GDP has remained constant. Thus, while the 12th Five Year Plan in the Industry Chapter has articulated the need for an Industrial Policy, the skills or TVET pre-conditions for such an industrial policy also need much more careful elaboration than has happened so far. The most important lesson from the Chinese experience is that the sheer scale and size of their TVET system dwarfs India's.

India's National Skills Policy (NSP) (2009) is being reviewed and the experience of China must be used in redefining the NSP.

India cannot match the scale and size of China's TVET system without ensuring that India's 10,000 secondary/senior secondary schools have a vocational education stream. Currently, vocational education is offered only at the senior secondary level in India (i.e. classes 11-12). Two years ago the Ministry of Human Resource Development of the Government of India had approved a National Vocational Education Qualifications Framework which mandated the inclusion of vocational education from class 9 (i.e. to start immediately after children complete the compulsory eight years of general academic school till elementary level).

However, that has been introduced in only 1000 or so secondary schools in 22 States so far (at the time of writing in late 2013).[28]

Clearly, age 15, when Indian children are entering class 9, is the start of the working age, according to Indian law. So, many children drop out after completing eight years of elementary school, and many well before that. Starting a vocational stream in every secondary school in India would begin to match the Chinese system that has existed for decades. As we noted, half of all children completing 9 years of compulsory schooling in China enter senior secondary vocational schools. In India the comparable share at senior secondary level is 3 per cent (of a smaller base).

Vocational Education and Training Law

One of the most important initiatives by the Chinese government has been the enactment of the 1996 Vocational Education Law of the People's Republic of China. The law provides the legal backing for vocational education and training in the country. The Law not only encourages students to take up vocational stream post junior secondary education, but also clearly demarcates the different roles and responsibilities of the various stakeholders in the TVET system: Ministry of Education, Ministry of Human Resources and Social Security, education and training schools and institutes under the two ministries, local governments, and enterprises. It also contains provisions for development of the rural economy by promoting technology and rural vocational education.

India's 12th Five Year Plan builds the case for a Vocational Education and Training Act (Planning Commission, 2013). More thought needs to be given in this matter to devise a Law that suits Indian conditions and encourages greater industry participation in all aspects of VET – curriculum design, teacher training, practical training, certification etc.

Stipend for Vocational Students – not for general academic schooling

In India, like in China decades back, very few students opt for vocational stream, which is often perceived as a dead-end. Only about 5 per cent of the population in the age groups 19–24 years has acquired some sort of skills through vocational education in India (Planning Commission, 2013). Encouraging students to opt for vocational stream in secondary high schools through measures like stipend for rural students for boarding and lodging, making tuition fee free of cost (since 2009) for all students has shown very positive outcomes for China's vocational education. Around 95 per cent employment rate of senior secondary vocational school graduates speaks for the external efficiency of China's TVET system. In India, as we noted above, at the beginning of the 11th Plan only 3 per cent students were enrolled in vocational courses at the secondary level (Planning Commission, 2013). And only around 15-20 per cent of vocational graduates are employable at the completion of their academic programmes (BCG CII, 2013).

[28] According to a personal communication received from the Ministry of Human Resource Development.

Teacher Training

Another very significant achievement of China's TVET system has been the element of training of teachers/trainers at the vocational education and training schools and institutes. Teachers in vocational schools are required to undergo one month in industry each year, or two months every two years for their career progression and promotion. The practical training at the enterprises equips them with latest technology and evolving industry needs.

In India, around 32 per cent of the trainers in vocational institutes do not have any formal certificates. A significant proportion of them has neither the requisite teaching skills nor the relevant industry experience. Due to poor career growth prospects, attrition rate is also high among faculty in vocational institutes (BCG CII, 2013). The 12th Five Year Plan recognizes the importance of training of trainers for effective functioning of TVET system. The scheme of Vocationalization of school education envisages the provision for in-service training of 7 days for 2,000 existing vocational education teachers and induction training of 30 days for 1,000 new vocational education teachers (Planning Commission, 2013). Collaboration with Chinese training institutes to send Indian vocational instructors for their training can be given some thought.

Curriculum Design

In China, local industry participation is encouraged and has been provided for in the 1996 Vocational Education Law. The curriculum of a senior secondary vocational school is designed such that, one- third includes general academic skills defined nationally by the Ministry of Education, another one- third is again nationally defined content associated with the particular occupation, and the remaining one- third defined again with respect to the occupational field is determined locally at the school level with the help of local enterprises. This shows the flexibility of the Chinese TVET system, that curriculum for each trade has a local content. There is no such flexibility permitted in either ITIs (of the Ministry of Labour) in India, nor in senior secondary vocational schools.

To ensure that curriculum is responsive to industry demands, the focus and distribution of trades in the curriculum for primary, secondary and tertiary sectors is in line with the economic structure. For instance, in Chongqing, the shares of primary, secondary and tertiary sectors are 8, 55 and 37 per cent respectively. Accordingly, the focus of trades in the curriculum for the respective sectors is 7, 52 and 41 per cent respectively (Chongqing Municipal Education Commission). Again, this kind of flexibility and responsiveness to local need and demand would be unheard of in the Indian TVET system. Thus, for an ITI principal to introduce a new course in India is such a tedious, bureaucratic and cumbersome process, requiring approvals all the way up to the state capital that no ITI principal would attempt it. By contrast, we noted in Chongqing that the city has become a world manufacturing hub for laptops, mobiles and automobiles (one third of the world's laptops are made here). The TVET system in the city is totally geared towards meeting the needs of these manufacturing sectors. By contrast, in India, the border district of Gurdaspur (Punjab)

has 800 foundry forge units but the town's ITI has no course that might cater to the unit's needs for skilled manpower.

Responsiveness to local industry needs – Industry participation

The local governments in China try to attract the support of the enterprises in TVET. The local enterprises because of fear of punishment (taxation or negative publicity or mark on reputation) at the hands of local governments (empowered by the provisions of the 1996 VE Law) do participate in practical training. The local governments help local enterprises by incentives such as allotment of land at subsidized prices, or preferential treatment in case of award of government projects. Such measures prove to be influential in encouraging industry to actively participate in vocational education and training and can be adopted in case of Indian firms as well.

In India, there is a huge demand for skilled workers compared to supply, especially in terms of engineering and managerial talent. Both the government and industry need to invest in training infrastructure and vocational education & training. Enterprises should come forward with collaborations with training institutes and should look inward to assign priority to in-service and pre-employment training and skilling (BCG-CII, 2013). Skill development is crucial for improving the productivity of the workforce and making the industry globally competitive. A growing domestic industry fuelled by high productivity of its workforce, results in a larger share in global manufacturing market, improving country's net exports and foreign exchange reserves. While India's services sector has spent increasingly larger funds for training (e.g. Infosys in particular), investment by Indian manufacturing firms on training has remained almost stagnant which has resulted in only marginal improvements in productivity of those engaged in the manufacturing sector. The share of manufacturing sector in India's gross domestic product has, as a result, remained stagnant at 15 per cent for the past two decades.

Due to years of underinvestment in skill development, India has one of the least skilled manpower among the top manufacturing nations. Only 17 per cent of those entering the workforce are skilled (including higher education and vocational education, which is only 4 per cent). Compared to this, in China, 59 per cent of those entering the workforce are skilled, of which 39 per cent are vocationally trained. Even more worrying aspect on quality grounds is that among those who are skilled, only 5 per cent workers can be classified as highly skilled and around 64 per cent are considered skilled at very low levels. Over 65 per cent of Indian firms face difficulty in filling job vacancies with appropriately skilled workforce. The skill gap is expected to worsen and reach about 100 million by 2025. This can prove to be a serious hindrance for achieving the targets of New Manufacturing Policy.

Financing of TVET

The 1996 Vocational Education Law requires that 20 per cent of the annual education budget should be allocated to vocational education and training (Lai et al, 2011). The fiscal decentralization of the Chinese (unitary) system of governance and autonomy of the local governments play an important role in the implementation of vocational education, for

vocational education at the secondary and senior secondary level is the responsibility of township and county governments, while higher education is under the central and provincial governments. The local governments set aside a special sum or arrange a portion for vocational education from the local extra charges that they have decided to collect for education and in addition can appropriate more funds for rural vocational training.

In addition, all enterprises as a policy are required to utilize 1.5 per cent of their payroll towards in-service training, which if they fail to do, should contribute an equivalent amount to the government to be used towards adult training. There is a strong case for developing National Training Fund and this has been recommended in India's 12 th Five Year Plan as well (See the chapter on Employment and Skill Development, Chapter 22, Vol.3). The Plan envisages setting up a training fund, in the form of tax levies to be collected from large and medium enterprises (to begin with), for mobilization and allocation of resources for skill development.

The financing of skill development in India through a training fund should also consider subsidizing poor students to pursue vocational education and training. To overcome the financial burden and to ensure that the poor Chinese students continue in VET schools a subsidy of 1,500 Yuan per year is offered per student, for their first two years at secondary vocational schools to cover their fees. Since 2009 tuition fee for senior secondary vocational schools was made free of cost for all students. This policy initiative is particularly relevant in the case of India, where an evaluation study conducted by IAMR of graduates from vocational training providers indicated that they are usually from poorer economic backgrounds with household incomes of Rs. 5,000 and below.

ANNEXURE I – Appendix Tables

A1: Number of Schools by Level and Type of School

('000s)

Year	Regular Institutions of Higher Education	Regular Secondary Schools	Senior Secondary schools	Junior secondary schools	Vocational Secondary schools	Vocational Secondary as proportion of Regular Secondary Schools
1978	0.60	162.35	49.22	113.13		
1980	0.68	118.38	31.30	87.08	3.31	2.8
1985	1.02	93.22	17.32	75.90	8.07	8.7
1986	1.05	92.97	17.11	75.86	8.19	8.8
1987	1.06	92.86	16.93	75.93	8.38	9.0
1988	1.08	91.49	16.52	74.97	8.95	9.8
1989	1.08	89.58	16.05	73.53	9.17	10.2
1990	1.08	87.63	15.68	71.95	9.16	10.5
1991	1.08	85.85	15.24	70.61	9.57	11.1
1992	1.05	84.02	14.85	69.17	9.86	11.7
1993	1.07	82.80	14.38	68.42	9.99	12.1
1994	1.08	82.36	14.24	68.12	10.22	12.4
1995	1.05	81.02	13.99	67.03	10.15	12.5
1996	1.03	79.97	13.88	66.09	10.05	12.6
1997	1.02	78.64	13.88	64.76	10.05	12.8
1998	1.02	77.89	13.95	63.94	10.07	12.9
1999	1.07	77.21	14.13	63.09	9.64	12.5
2000	1.04	77.27	14.56	62.70	8.85	11.5
2001	1.23	80.43	14.91	65.53	7.80	9.7
2002	1.40	80.07	15.41	64.66	7.40	9.2
2003	1.55	79.49	15.78	63.71	6.84	8.6
2004	1.73	79.06	16.00	63.06	6.48	8.2
2005	1.79	77.98	16.09	61.89	6.42	8.2
2006	1.87	76.70	16.15	60.55	6.10	8.0
2007	1.91	74.79	15.68	59.11	6.19	8.3
2008	2.26	72.91	15.21	57.70	6.13	8.4
2009	2.31	70.77	14.61	56.17	5.81	8.2
2010	2.36	68.88	14.06	54.82	5.27	7.7
2011	2.41	67.75	13.69	54.06	4.86	7.2

*Vocational secondary schools include vocational senior and junior secondary schools. It excludes vocational secondary education in regular specialized schools, adult specialized schools and technical schools.

Source: China Statistical Yearbook, 2012

A2: Number of Full-time Teachers by Level and Type of School

('000s)

Year	Regular Institutions of Higher Education	Regular Secondary Schools	Senior Secondary schools	Junior secondary schools	Vocational Secondary schools	Vocational Secondary as proportion of Regular Secondary Schools Full time teachers
1978	206	3182	741	2441	0	
1980	247	3020	571	2449	23	0.8
1985	344	2652	492	2160	141	5.3
1986	372	2758	518	2239	164	5.9
1987	385	2870	544	2327	185	6.4
1988	393	2960	557	2403	203	6.9
1989	397	2980	554	2427	214	7.2
1990	395	3033	562	2470	224	7.4
1991	391	3090	573	2517	235	7.6
1992	388	3141	576	2565	248	7.9
1993	388	3167	559	2608	262	8.3
1994	396	3234	547	2687	277	8.6
1995	401	3334	551	2784	292	8.8
1996	403	3465	572	2893	308	8.9
1997	405	3587	605	2982	322	9.0
1998	407	3697	642	3055	336	9.1
1999	426	3841	692	3148	336	8.7
2000	463	4005	757	3249	320	8.0
2001	532	4188	840	3348	306	7.3
2002	618	4376	946	3430	310	7.1
2003	725	4537	1071	3467	289	6.4
2004	858	4668	1191	3477	294	6.3
2005	966	4771	1299	3472	303	6.4
2006	1076	4851	1387	3463	307	6.3
2007	1168	4907	1443	3464	317	6.5
2008	1237	4944	1476	3469	326	6.6
2009	1295	5007	1493	3513	326	6.5
2010	1343	5042	1518	3523	309	6.1
2011	1393	5080	1557	3523	317	6.2

Source: China Statistical Yearbook, 2012

A3: Number of Students' Enrolment by Level and Type of School

('000s)

Year	Regular Institutions of Higher Education	Regular Secondary Schools	Senior Secondary schools	Junior secondary schools	Vocational Secondary schools	Vocational Secondary as proportion of Regular Secondary Schools
1978	856	65483	15531	49952		
1980	1144	55081	9698	45383	454	0.8
1985	1703	47060	7411	39648	2295	4.9
1986	1880	48899	7734	41166	2560	5.2
1987	1959	49481	7737	41744	2676	5.4
1988	2066	47615	7460	40155	2794	5.9
1989	2082	45540	7161	38379	2823	6.2
1990	2063	45860	7173	38687	2950	6.4
1991	2044	46835	7229	39606	3156	6.7
1992	2184	47708	7049	40659	3428	7.2
1993	2536	47391	6569	40822	3626	7.7
1994	2799	49817	6649	43167	4056	8.1
1995	2906	53710	7132	46578	4483	8.3
1996	3021	57397	7693	49704	4733	8.2
1997	3174	60179	8501	51678	5119	8.5
1998	3409	63010	9380	53630	5416	8.6
1999	4134	67713	10497	57216	5339	7.9
2000	5561	73689	12013	61676	5032	6.8
2001	7191	78360	14050	64311	4664	6.0
2002	9034	82879	16838	66041	5115	6.2
2003	11086	85832	19648	66184	5282	6.2
2004	13335	86954	22204	64750	5694	6.5
2005	15618	85809	24091	61718	6256	7.3
2006	17388	84519	25145	59374	6762	8.0
2007	18849	82433	25224	57209	7405	9.0
2008	20210	80505	24763	55742	7611	9.5
2009	21447	78679	24343	54336	7857	10.0
2010	22318	77032	24273	52759	7298	9.5
2011	23085	75190	24548	50642	6836	9.1

Source: China Statistical Yearbook, 2012

A4: Number of New Students' Enrolment by Level and Type of School

('000s)

Year	Regular Institutions of Higher Education	Regular Secondary Schools	Senior Secondary schools	Junior secondary schools	Vocational Secondary schools	Vocational Secondary as proportion of Regular Secondary Schools
1978	402	26989	6929	20060	0	
1980	281	19343	3834	15509	307	1.6
1985	619	16069	2575	13494	1161	7.2
1986	572	16439	2573	13866	1128	6.9
1987	617	16495	2552	13943	1132	6.9
1988	670	15848	2443	13405	1195	7.5
1989	597	15515	2421	13094	1183	7.6
1990	609	16196	2498	13699	1232	7.6
1991	620	16552	2438	14113	1378	8.3
1992	754	16997	2347	14650	1521	8.9
1993	924	17073	2283	14790	1615	9.5
1994	900	18598	2434	16164	1753	9.4
1995	926	20259	2736	17523	1901	9.4
1996	966	20429	2822	17607	1889	9.2
1997	1000	21282	3226	18056	2112	9.9
1998	1084	23210	3596	19614	2176	9.4
1999	1597	25460	3963	21497	1941	7.6
2000	2206	27360	4727	22633	1827	6.7
2001	2683	28159	5580	22579	1850	6.6
2002	3205	29290	6767	22523	2169	7.4
2003	3822	29474	7521	21953	2221	7.5
2004	4473	28997	8215	20782	2291	7.9
2005	5045	28543	8777	19765	2593	9.1
2006	5461	27948	8712	19236	2940	10.5
2007	5659	27039	8402	18637	3069	11.4
2008	6077	26932	8370	18562	2941	10.9
2009	6395	26167	8303	17864	3152	12.0
2010	6618	25517	8362	17155	2798	11.0
2011	6815	24848	8508	16340	2471	9.9

Source: China Statistical Yearbook, 2012

A5: Number of Graduates by Level and Type of School

('000s)

Year	Regular Institutions of Higher Education	Regular Secondary Schools	Senior Secondary schools	Junior secondary schools	Vocational Secondary schools	Vocational Secondary as proportion of Regular Secondary Schools
1978	165	23753	6827	16926	0	
1980	147	15810	6162	9647	79	0.5
1985	316	11949	1966	9983	413	3.5
1986	393	12810	2240	10570	579	4.5
1987	532	13641	2468	11173	750	5.5
1988	553	14078	2506	11572	810	5.8
1989	576	13775	2432	11343	863	6.3
1990	614	13421	2330	11091	893	6.7
1991	614	13085	2229	10855	945	7.2
1992	604	13284	2261	11023	967	7.3
1993	571	13659	2317	11342	1025	7.5
1994	637	13619	2093	11526	1076	7.9
1995	805	14290	2016	12274	1240	8.7
1996	839	14840	2049	12790	1396	9.4
1997	829	16640	2217	14424	1501	9.0
1998	830	18320	2518	15802	1628	8.9
1999	848	18527	2629	15898	1678	9.1
2000	950	19086	3015	16071	1763	9.2
2001	1036	20474	3405	17070	1665	8.1
2002	1337	22636	3838	18799	1454	6.4
2003	1877	24537	4581	19956	1355	5.5
2004	2391	26174	5469	20704	1425	5.4
2005	3068	27681	6616	21065	1700	6.1
2006	3775	27895	7271	20624	1795	6.4
2007	4478	27452	7883	19568	1977	7.2
2008	5119	26990	8361	18629	2167	8.0
2009	5311	26184	8237	17947	2321	8.9
2010	5754	25430	7944	17486	2320	9.1
2011	6082	25232	7877	17355	2190	8.7

Source: China Statistical Yearbook, 2012

A6: Number of Secondary Vocational Schools (2011)

							(unit)
Item	Total	Central Ministries and Agencies	Local Depart-ments	Depart-ments of Education	Departments of Non-Education	Local Enter-prises	Private
Secondary Vocational Schools	**10169**	**30**	**7283**	**5669**	**1510**	**104**	**2856**
Regular Specialized Secondary School	3753	22	2750	1711	998	41	981
Adult Specialized Secondary School	1614	4	1452	1152	274	26	158
Vocational Senior Secondary School	4802	4	3081	2806	238	37	1717
Other institutions	642	3	515	353	151	11	124
Number of Secondary vocational schools does not include the number of skilled worker schools which are under the purview of the Ministry of Human Resource and Social Security.							

Source: China Statistical Yearbook, 2012

A7: Basic Statistics on Vocational/Technical Training Institutions (2011)

(in millions)

Item	Schools	Registered	Graduates	Teachers	Full-time
	Units	Students		Staff	Teachers
Total	**129.5**	**50211.2**	**51465.9**	**521.8**	**298.3**
Vocational/Technical Training Schools	3.0	3365.0	3302.9	67.5	47.9
Run by Education Departments and Collectives	1.4	1811.1	1803.7	45.8	33.8
Run by Other Departments	0.9	1193.3	1140.3	12.5	8.0
Run by Private Institutions	0.7	360.6	358.9	9.2	6.1
Technical Training Schools for Adult Farmers	103.4	34969.5	37946.9	188.5	94.5
Run by Education Departments and Collectives	100.2	34024.8	36791.3	180.8	89.5
Run by Counties	2.4	2797.7	3092.9	17.9	11.3
Run by Township	16.4	16749.5	18342.7	67.6	37.8
Run by Villages	81.4	14477.6	15355.6	95.3	40.4
Run by other Departments	2.4	759.8	974.0	3.4	1.9
Run by Private Institutions	0.8	185.0	181.5	4.3	3.0
Others	23.1	11876.6	10216.1	265.8	156.0
Run by Education Departments and Collectives	0.9	1037.3	991.5	10.9	8.0
Run by Other Departments	2.3	1830.3	1795.6	17.6	9.6
Run by Private Institutions	19.9	9009.0	7429.1	237.3	138.4

Source: China Statistical Yearbook, 2012

A8: Statistics on Technical Schools (2011)

	Total	Under the Central Government Ministries	Provinces, Autonomous Regions and Municipalities
Number of Schools (unit)	2914	59	2855
Number of Students*	4294	97	4197
Teachers and Staff*	265	6	259
Full-time Teachers*	192	5	187
Classroom Teachers*	129	3	126
Practical Training Teachers*	63	1	61
Classroom cum Practical Training Teachers*	58	1	57
* (1000 persons)			

Data in this table do not include those of Shanghai.

Source: China Statistical Yearbook, 2012

A9: Basic Statistics on Educational Funds

(billion yuan)

Year	Total	Govt. Appropriation for Education	of which Budgetary	Funds from Private schools	Donations and Fund raising for running schools	Income from Teaching, Research and Other Auxilliary Activity	Of which Tuition and Miscellaneous fees	Other Educational Funds
1992	86.70	72.88	53.87		6.96		4.39	
1993	105.99	86.78	64.44	0.33	7.02		8.71	
1994	148.88	117.47	88.40	1.08	9.74		14.69	
1995	187.80	141.15	102.84	2.04	16.28		20.12	
1996	226.23	167.17	121.19	2.62	18.84		26.10	
1997	253.17	186.25	135.77	3.02	17.07		32.61	
1998	294.91	203.25	156.56	4.80	14.19	60.92	36.97	11.76
1999	334.90	228.72	181.58	6.29	12.59	74.97	46.36	12.34
2000	384.91	256.26	208.57	8.59	11.40	93.83	59.48	14.84
2001	463.77	305.70	258.24	12.81	11.29	115.75	74.56	18.22
2002	548.00	349.14	311.42	17.26	12.73	146.09	92.28	22.79
2003	620.83	385.06	345.39	25.90	10.46	172.18	112.15	27.22
2004	724.26	446.59	402.78	34.79	9.34	201.14	134.66	32.40
2005	841.88	516.11	466.57	45.22	9.32	234.00	155.31	37.24
2006	981.53	634.84	579.56	54.91	8.99	240.73	155.23	42.07
2007	1214.81	828.02	765.49	8.09	9.31	317.72	213.09	51.66
2008	1450.07	1044.96	968.56	6.98	10.27	336.71	234.93	51.15
2009	1650.27	1223.11	1141.93	7.50	12.55	352.76	251.56	54.35
2010	1956.18	1467.01	1348.96	10.54	10.79	410.61	301.56	57.24
Central Government	215.83	149.21	140.35		1.51	53.48	25.95	11.64
Local Governments	1740.35	1317.80	1208.61	10.54	9.28	357.13	275.60	45.60

Source: China Statistical Yearbook, 2012

A10: Educational Funds in Various Schools (2010)

(billion yuan)

Type of School	Total	Government Appropriation for Education	of which Budgetary	Funds from Private schools	Donations and Fund raising for running schools	Income from Teaching, Research and Other Auxiliary Activity	Of which Tuition and Miscellaneous fees	Other Educational Funds
National Total	1956.18	1467.01	1348.96	10.54	10.79	410.61	301.56	57.24
Institutions of HE	562.91	296.53	277.78	2.70	3.00	227.68	172.45	33.00
Regular Institutions of HE	549.79	290.18	271.88	2.70	2.96	221.66	167.61	32.29
Institutions of HE for Adults	13.12	6.35	5.90		0.03	6.02	4.85	0.71
Vocational Secondary Schools	135.73	96.83	83.25	1.29	0.26	33.20	27.66	4.16
Regular Specialized secondary schools	60.66	41.51	36.94	0.56	0.09	16.30	13.82	2.19
Vocational Senior Secondary Schools	50.93	39.28	31.82	0.56	0.14	9.99	8.44	0.96
Technical Schools	16.96	10.71	9.64	0.11	0.00	5.38	4.48	0.77
Adult Specialized Secondary schools	7.18	5.33	4.85	0.06	0.02	1.54	0.92	0.24
Secondary Schools	542.11	447.74	411.60	2.45	4.06	79.18	53.57	8.67
Regular Secondary Schools	541.65	447.42	411.31	2.45	4.06	79.09	53.54	8.63
Regular Senior Secondary Schools	200.33	132.18	117.59	0.99	1.82	61.05	43.57	4.29
Regular Junior Secondary Schools	341.31	315.24	293.73	1.46	2.24	18.04	9.97	4.34
Rural Areas	190.09	184.22	174.70	0.18	0.88	3.03	1.45	1.78
Secondary Schools for Adults	0.46	0.32	0.29		0.000	0.09	0.02	0.04
Primary Schools	488.75	464.30	438.96	1.30	2.60	15.29	8.96	5.26

Notes: 'Funds from private schools' from 1992 to 2006 equals funds from social organizations and citizens for running schools, but from 2007 onwards, equal funds from runners of private schools.

Source: Source: China Statistical Yearbook, 2012

A11: Educational Funds in Various Schools (2002)

(billion Yuan)

	Total	Govern-ment Appro-priation for Education	Budgetary	Funds of Social Organisations and Citizens for Running Schools*	Donations and Fund Raising for Running Schools	Tuition and Miscellaneous Fee	Other Educational Funds
National Total	548.00	349.14	311.42	17.26	12.73	92.28	76.60
Central Government	65.82	35.32	30.42		2.07	8.73	19.70
Local Government	482.19	313.82	281.00	17.26	10.66	83.55	56.90
Institutions of HE	158.32	78.75	75.49	4.18	2.80	42.65	29.95
Regular Institutions of HE	148.79	75.21	72.43	3.31	2.78	39.07	28.41
Institutions of HE for Adults	9.54	3.54	3.05	0.86	0.01	3.58	1.54
Vocational Schools	14.70	8.88	7.73	0.63	0.14	3.59	1.46
Regular Specialized secondary schools	25.05	13.57	12.74	0.25	0.08	8.24	2.91
Technical Schools	20.90	9.32	8.81	0.11	0.03	6.10	1.67
Teacher Training Schools	3.76	1.99	1.86	0.00	0.03	1.29	0.45
Adult Specialized Secondary schools	4.06	2.26	2.07	0.14	0.02	0.85	0.79
Secondary Schools	167.05	106.24	90.03	8.99	5.99	24.33	21.49
Regular Secondary Schools	166.82	106.13	89.95	8.97	5.99	24.28	21.45
Regular Senior Secondary Schools	80.86	41.80	34.06	5.51	4.03	15.62	13.90
Regular Junior Secondary Schools	85.97	64.34	55.89	3.46	1.96	8.66	7.55
Secondary Schools for Adults	0.22	0.11	0.08	0.02	0.00	0.05	0.05
Rural Areas	42.71	34.14	31.88	0.00	0.88	4.94	2.75
Primary Schools	144.86	116.42	104.73	3.21	3.28	11.56	10.40

*Same as Funds from private schools.

Source: China Statistical Yearbook, 2004

ANNEXURE II

Vocational Education Law of the People's Republic of China

(Adopted at the Nineteenth Session of the Standing Committee of the Eighth National People's Congress of the People's Republic of China on May 15, 1996, promulgated by Order No. 69 of The President of the People's Republic of China on May 15, 1996, and effective as of September 1, 1996.)

Contents

CHAPTER I: GENERAL PROVISIONS

Article 1: With a view to implementing the strategy for rejuvenating China through science and education, developing vocational education, enhancing the quality of workers and promoting the construction of socialist modernization, this Law is hereby enacted pursuant to the Education Law and the Labour Law of the People's Republic of China.

Article 2: This Law shall apply to vocational school education at various levels and vocational education in various forms. Special training conducted by State organs for their personnel shall be prescribed separately by laws and regulations.

Article 3: Vocational education is an important component of the educational undertakings of the State and an important way to promote economic and social development and employment. The State shall develop vocational education, propel vocational education reform, raise the quality of vocational education, establish and improve a system of vocational education that keeps abreast of the socialist market economy and social progress.

Article 4: Vocational education shall follow the state's educational policy, giving the education receivers education on ideology, politics and vocational ethics; teaching vocational knowledge, developing vocational technical abilities, conducting vocational directions and raising the quality of the education receivers in an all-round way.

Article 5: Citizens shall have the right to receive vocational education pursuant to the law.

Article 6: People's governments at various levels shall incorporate the development of vocational education into the plans of national economic and social development. Trade organisations, enterprises and institutional organisations shall, pursuant to the law, perform their duties to carry out vocational education.

Article 7: The State shall adopt measures to develop vocational education in rural areas, support the development of vocational education in ethnic minority regions, remote border areas and poverty-stricken areas. The State shall adopt measures to assist women in receiving vocational education, organize the unemployed to receive vocational education in various forms, and provide support for the development of vocational education for disabled persons.

Article 8: Vocational education shall, in the light of actual needs and according to the vocational categories and vocational grade standards set by the State, adopt systems of academic credentials, training certifications and vocational credentials. The State shall adopt a system whereby workers shall receive necessary vocational education before taking up occupations or job posts.

Article 9: The State shall encourage and organize scientific research on vocational education.

Article 10: The State shall give awards to organisations and individuals that have made remarkable achievements in the work of vocational education.

Article 11: The education administrative department of the State Council shall be responsible for the overall planning, comprehensive coordination and macro-control of vocational education.

The education administrative department, the labour administrative department and other relevant departments of the State Council shall, within the scope of their functions and duties prescribed by the State Council, be respectively responsible for relevant work of vocational education.

Local people's governments at the county level and above shall strengthen the leadership, overall coordination, supervision, direction and assessment with regard to the work of vocational education in their own administrative regions.

CHAPTER II: THE SYSTEM OF VOCATIONAL EDUCATION

Article 12: The state shall, in accordance with the levels of economic development and the situation of universal education of various regions, implement the education division at different stages mainly after junior middle school, institute and improve a system for vocational education whereby vocational school education and vocational training shall be developed concurrently and shall be connected with other forms of education towards a coordinate development of both.

Article 13: Vocational school education includes primary, secondary and higher vocational school education.

Primary and secondary vocational school education shall be carried out respectively by primary and secondary vocational schools. The higher vocational school education

shall, in accordance with the actual needs and conditions, be undertaken by higher vocational schools or by common institutions of higher learning. Other schools may, in accordance with the overall planning by the education administrative department, implement vocational school education at corresponding levels.

Article 14: Vocational training includes training before employment, training for army men transferred to civilian work, training for apprentice, on-the-job training, job-transfer training and other forms of training of vocational nature. Vocational training may, according to the actual situation, be classified into primary, secondary or further vocational training.

Vocational training shall be respectively undertaken by corresponding vocational training institutions and vocational schools. Other schools or educational institutions may, according to their educational capacity, develop various forms of vocational training to meet the needs of the society.

Article 15: In addition the educational institutions for disabled persons which shall provide vocational training for disabled persons, vocational schools, vocational training institutions and other educational institutions at various levels and of various types shall, in accordance with relevant provisions set by the State, admit students with disabilities.

Article 16: Common middle schools may, in line with local conditions, open vocational courses or, in accordance with actual needs, appropriately increase teaching contents of vocational education.

CHAPTER III: THE IMPLEMENTATION OF VOCATIONAL EDUCATION

Article 17: Local people's governments at county level and above shall sponsor vocational schools and vocational training institutions and make them mainstays and examples, provide guidance and support to vocational schools and vocational training institutions established pursuant to the law in rural areas or by enterprises, institutional organisations, social organisations, other social organisations or citizens.

Article 18: People's governments at the county level shall, in accordance with the needs of overall, coordinate development of rural economy, agricultural science and technology, and rural education, conduct vocational education in various forms, develop training of practical technologies and promote the development of rural vocational education.

Article 19: The competent departments of the governments and trade associations shall jointly sponsor or sponsor on their own vocational schools and vocational training institutions, organize, coordinate and direct the enterprises and institutions of their own sector or trade in running vocational schools and vocational training institutions. The State shall encourage the use of modern teaching methods for the development of vocational education.

Article 20: Enterprises shall, in accordance with their actual situation, provide vocational education in a planned way for their staff, workers and persons to be employed. Enterprises may jointly run or run on their own vocational schools and vocational training institutions; they may also entrust vocational schools or vocational training institutions with the vocational education of their staff, workers and persons to be employed by them.

Staff and workers engaging in technical work must receive proper training before going to their posts; staff and workers engaging in special work must receive relevant training and obtain qualifications for the special work.

Article 21: The State encourages institutional organisations social organisations, other social groups and citizens to run vocational schools and vocational training institutions in accordance with relevant provisions set by the State.

Procedures for sponsorship of vocational schools and vocational training institutions within the Chinese territory by organisations or individuals from abroad shall be formulated by the State Council.

Article 22: For jointly sponsoring a vocational school or vocational training institution, the sponsors shall conclude a contract for the joint sponsorship.

Where a competent department of the government, trade association, enterprise or institutional organisation entrusts a vocational school or vocational training institution with vocational education, a contract shall be concluded for the entrustment.

Article 23: In conducting vocational education, vocational schools and vocational training institutions shall integrate education with production, serve the local economic development, and maintain close ties with enterprises and train practical personnel and skilled workers.

Vocational schools and vocational training institutions may run enterprises or training places regarding vocational education.

Article 24: For the establishment of a vocational school, the following basic conditions shall be satisfied:

(1) Have its organisational structure and rules and regulations;
(2) Have qualified teachers;
(3) Have premises for teaching which accord with the prescribed standards, and facilities and equipment suitable for vocational education; and

(4) Have the necessary funds for running the school and stable sources of the funds.

For the establishment of a vocational training institution, the following basic conditions shall be satisfied:

(i) Have its organisational structure and a system of management;
(ii) Have teachers and management personnel suited to the training tasks;

(iii) Have premises, facilities and equipment for the conduct of training; and
(iv) Have necessary funds.

The establishment, changes, and termination of vocational schools or vocational training institutions shall be conducted in accordance with relevant regulations set by the State.

Article 25: Students receiving education from vocational schools shall, after passing the examinations administered by the school, be issued academic credentials in accordance with relevant regulations of the State. Students receiving vocational training shall, after passing the examinations administered by the vocational schools or vocational training institutions, which provide the training, be issued certification of training in accordance with relevant regulations of the State.

Academic credentials and training certifications shall, in accordance with relevant provisions set by the State, be used as certifications of graduates and trainees of vocational schools and vocational training institutions when they are employed.

CHAPTER IV: THE GUARANTEE OF VOCATIONAL EDUCATION

Article 26: The State encourages raising of funds from various channels according to the law for the development of vocational education.

Article 27: The People's governments of various provinces, autonomous regions and municipalities directly under the central government shall determine the average financial standard per student of vocational schools in the administrative regions; relevant departments of the State Council shall, in conjunction with the financial department of the State Council, determine the average financial standard per student of vocational schools under their administration. Sponsors of a vocational school shall, in accordance with the average financial standards per student, appropriate in full the funds for vocational education.

People's governments at various levels and relevant departments of the State Council shall increase step by step the financial allocations for vocational schools and vocational training institutions.

No organisation or individual may embezzle or pocket any portion of funds designated for vocational education.

Article 28: Enterprises shall bear the expenses for the vocational education provided for its own staff and persons to be employed by them. Concrete measures shall be formulated according to the law by the relevant departments of the State Council together with the financial department of the State Council or by the people's governments of provinces, autonomous regions or municipalities directly under the central government.

Article 29: If any enterprise fails to conduct vocational education in accordance with Article 20 of this Law, the local people's government at the county level or above shall order it to make correction; if the enterprise refuses to make corrections, the vocational educational funds that the enterprise should bear may be collected, and such funds shall be used for vocational education in the locality.

Article 30: The people's government of provinces, autonomous regions and municipalities directly under the central government may set aside a special sum or arrange a portion for vocational education from the local extra charges that they have decided to collect for education in accordance with relevant provisions of the Education Law.

Article 31: The people's governments at various levels may appropriate proper amounts for rural vocational training from the funds for developing agricultural science and technology or for the spreading of technology.

Article 32: Vocational schools and vocational training institutions may charge tuition fees from students receiving secondary or higher vocational school education or vocational training, but students with financial difficulties and students with disabilities shall enjoy a partial or total tuition waiver. The measures for collection of tuition fees shall be formulated by the people's governments of provinces, autonomous regions or municipalities directly under the central government.

The State encourages enterprises, institutional organisations, social organisations, other social groups and citizens to establish, in accordance with relevant provisions set by the State, scholarships and loans for vocational education to give rewards to students getting excellent marks in studies or to aid students with financial difficulties.

Article 33: Incomes received from the running of enterprises and provision of social service by vocational schools and vocational training institutions shall be mainly used to develop vocational education.

Article 34: The State encourages financial institutions to support the development of vocational education by applying the use of credit.

Article 35: The State encourages enterprises, institutional organisations, social organisations, other social groups and citizens to donate to vocational education, encourages organisations and individuals abroad to provide funds for or donate to vocational education. The aid and donation offered shall be used for vocational education.

Article 36: The people's governments at the county level or above and the relevant departments shall incorporate the training of vocational education teachers into the planning of construction of the contingent of teachers, so as to ensure that the contingent of vocational education teachers can meet the needs of the development of vocational education.

A vocational school and vocational training institution may engage specialized technical persons, persons with special technical ability and teachers from other educational institutions as part-time teachers. The relevant departments and units shall facilitate the recruitment of such persons.

Article 37: Relevant departments of the State Council, local people's governments at the county level or above and organisations and citizens running vocational schools and vocational training institutions shall strengthen the construction of productive and training bases for vocational education.

Enterprises and institutional organisations shall accept students and teachers from vocational schools and vocational training institutions to do practice; those doing practice on certain spots shall be paid properly.

Article 38: The people's governments at the county level or above and the relevant departments shall institute and improve a system for vocational education and strengthen the work of compiling, publishing and distribution of teaching materials used for vocational education.

CHAPTER V: SUPPLEMENTARY PROVISIONS

Article 39: Those who violate the provisions of the Education Law in vocational education activities shall be penalised in accordance with the relevant provisions of the Education Law.

Article 40: This Law shall come into force as of September 1, 1996.

ANNEXURE III

Programme Agenda for the Visit of IAMR Delegation to China

(19th -28th August, 2013)

Beijing	
19th August (Monday)	
10.30 am – 11:30 am	Mrs. Namgya Khampa Counsellor (T&C) Embassy of India, Beijing
12 pm – 1 pm	Dr. S. Jaishankar Ambassador of India, Beijing
2:30 pm – 5 pm	Beijing Municipal Education Commission, Dr. Yuan Dayong, Prof. Dr. Ji Li, Ms. Shen Hongmei Beijing Academy of Educational Sciences Institute for Vocational and Adult Education
20th August (Tuesday)	
9:30 am – 11 am	Ministry of Education National Centre of Education Development and Research (NCEDR) Mr. Quan Xuehong, Dept. of International Cooperation
2 pm – 4 pm	Central Institute for Vocational and Technical Education (CIVTE) Ms. Gao Ying, Vice Director-General Prof. Liu Yufeng, Director
21st August (Wednesday)	
2 pm – 6 pm	Haihe Education Park, Tianjin Mr. Chen Jianguo, Deputy Director
22nd August (Thursday)	
9 am – 10:30 am	Ministry of Human Resources and Social Security Mr. Tian Feng, Director, Vocational Training Division, Vocational Capability Construction Dept., Ms. Zhang Chenxin, Program Officer, International Cooperation Dept.
11 am – 12 pm	Ms. Ann Herbert, Country Director ILO Office for China and Mongolia
12:30 pm – 1:30 pm	Mr.James H.Zhan President, TATA Sons Limited, China At Indian Embassy, Beijing
2:30 – 3:45 pm	International and Comparative Education Research Institute, Beijing Normal University Mr. Li Jiayong, Vice Dean Faculty of Education

	Prof. Liu Baocun Director
4: 30 pm – 5: 45 pm	UNESCO, Beijing Office Mr. Abhimanyu Singh, Director and Representative Ms. Miki Nozawa Programme Specialist for Education Ms. Xu Jieying National Programme Officer for Education
Taiyuan	
23rd August (Friday)	
10 am – 11:30 am	Taiyuan Education Bureau Ms. Shi Hairong
2 pm – 3:30 pm	Shanxi Provincial Education Department Mr. Duan, Director of General Affairs Office, Engineering Vocational College
Chongqing	
27th August (Tuesday)	
10:30 am – 12 pm	Chongqing Normal University Daniel Guan, Associate Professor
1 pm – 2 pm	Chongqing Real Estate College Mr. Jinlian Chen Vice-president & Associate Professor & Senior Engineer Chongqing University
3 pm – 4 pm	Chongqing Tourism School
28th August (Wednesday)	
10 am – 12 pm	Chongqing Municipal Education Commission Prof. Hu Bin, Deputy Director

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