Key Highlights of China’s Approach to TVET/Skills Development

Background Note
South-South Study Visit to China and India on Skills and Technical and Vocational Education and Training
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Highlight of China TVET

1. INTRODUCTION

China uses the term ‘vocational and technical education’ (VTE) as a general term for different types and modes of vocational and technical education and training. This also includes initial preliminary and continuing training at various education levels. Furthermore, it indicates that Chinese current VTE system does not maintain a clear distinction between initial VTE (IVTE) and continuing VTE (CVTE). Both, IVTE and CVTE eventually do belong to the same uniform system, which is enforced by the VTE Law of the PR China in 1996.

IVTE consists of two components, school-based vocational education and training. School-based vocational education is provided by Junior and Senior Vocational Schools (SVS), Skilled Workers Schools (SWS) and Secondary Technical Schools (STS). The tertiary sector provides vocational education at Higher Vocational Colleges (HVC) and Senior Skilled Workers Schools (SSWS).

Different administrative responsibilities result in various school types. Ministry of Education (MOE) and the Ministry of Human Resources and Social Security (MOHRSS) are the two main departments which are responsible for vocational education schools. The vocational schools (on secondary level) do provide courses at senior level that last 3 – 4 years and will end up with a leaving certificate and/or a rating certificate according to the MOHRSS’ vocational standards. The provided courses cover a wide range of areas; a clear emphasis though is on crafts and commercial vocations, while the skilled workers schools do emphasize industrial vocations. The entry requirements for the upper secondary vocational education are either a successfully passed entry exam or a leaving exam of a junior vocational school.

At tertiary level there are abridged studies (2-3 years) at vocational colleges which aim at preparing graduates for practice-oriented positions in production. The share of vocational colleges' entrants as part of the overall university entrants has reached the mark of 50%. The graduates of HVCs receive a leaving certificate and a rating certificate (of medium level) in accordance with the vocational standards of MOHRSS.

2. SOCIAL AND ECONOMIC STATUS

China is a developing country with 1.31 billion population and 9.6 million square kilometers land. In recent 30 years, under the policy of opening to the outside world and reforming, China has made great progress in economic and social development, and in people’s living standard.
In China, the initial impetus for economic development was the policy of reform and open proposed by Deng Xiaoping which made China a marvelous economic development with a current GDP of 31.4 thousand billion RMB (Statistics China 2008). It is equivalent to an average annual growth of 9%. The fixed asset investment reached 172.2 thousand billion Yuan, which increase 25.5% compare to 2007. Very few countries’ economy developed so fast and maintained steady during the last 25 years.

Agriculture employment population has decreased from 60% in 1990 to 42.6% in 2006 by nearly 20%. On the other hand, the population employed in Second and Third Industry has increased to 25.2% and 32.2% respectively (Chart 1). And the proportion of residents living in the city keep growing in the last 10 years which has reached 43.9% (Chart 2).

Chart 1: GDP contribution Output and Employment Population distribution by Different Industries

<table>
<thead>
<tr>
<th>Year</th>
<th>Agriculture Output (%)</th>
<th>Agriculture Employment Proportion(%)</th>
<th>Manufacture and Construction Output (%)</th>
<th>Manufacture and Construction Employment Proportion(%)</th>
<th>Service and Tourism Output (%)</th>
<th>Service and Tourism Employment Proportion(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>27.1</td>
<td>60.1</td>
<td>41.3</td>
<td>21.4</td>
<td>31.6</td>
<td>18.5</td>
</tr>
<tr>
<td>1995</td>
<td>19.9</td>
<td>52.2</td>
<td>47.2</td>
<td>23.0</td>
<td>32.9</td>
<td>24.8</td>
</tr>
<tr>
<td>2000</td>
<td>15.1</td>
<td>50.0</td>
<td>45.9</td>
<td>22.5</td>
<td>39.0</td>
<td>27.5</td>
</tr>
<tr>
<td>2004</td>
<td>13.4</td>
<td>46.9</td>
<td>46.2</td>
<td>22.5</td>
<td>40.4</td>
<td>30.6</td>
</tr>
<tr>
<td>2006</td>
<td>11.7</td>
<td>42.6</td>
<td>48.9</td>
<td>25.2</td>
<td>39.4</td>
<td>32.2</td>
</tr>
<tr>
<td>2008</td>
<td>11.31</td>
<td>39.6</td>
<td>48.62</td>
<td>27.2</td>
<td>40.07</td>
<td>33.2</td>
</tr>
</tbody>
</table>

Chart 2: City Level of China in the past 30 years

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17.90%</td>
<td>26.41%</td>
<td>29.04%</td>
<td>36.22%</td>
<td>41.76%</td>
<td>43.90%</td>
<td>44.90%</td>
</tr>
</tbody>
</table>

This indicates a clear shift from an agricultural and primary goods based economy – as it was true for China until the mid-1970s – towards an industrial-oriented economy with a strong momentum towards a service-oriented economy. However, the primary sector still employs a large portion of China's active work force: by 2008 there were 306.5 million people working in the primary sector, 211.1 million in the secondary sector and 257.2 million worked in the tertiary sector. Besides the indication of a remarkable higher productivity in the industrial sector – compared with the agricultural sector – and
a comparatively large portion of agricultural services, it can be concluded that the
agricultural sector is the weak point of the Chinese development. While the industrial
development – located in the coastal area (Pearl River Delta, Shanghai etc.) – is the
heart of the Chinese miracle, which attracts millions of migrant workers.

Overall, the service sector is gaining more importance and contributing increasing
shares to the GDP and to the employment, while the employment in agriculture is
decreasing. However, the drive force for China's economic performance (still) is the
industrial sector. Therefore, VTE should focus on the development of industry and
manufacturing industry.

3. STATISTICS DATA OF TVET

Available Statistics Data of TVET schools, colleges and institutions in China

| Chart 3: The Number of all categories of TVET Schools |
|---------------------------------|-----|-----|-----|-----|-----|-----|-----|
| Junior secondary vocational school | 1534 | 1472 | 1194 | 1065 | 672  | 335  | /
| Senior secondary vocational school | 22151 | 22174 | 20252 | 17770 | 14454 | 14693 | 14847 |
| Higher vocational colleges and universities | 82 | 101 | 184 | 384 | 872 | 981 | 1184 |

| Chart 4: Enrollments of all kinds of secondary vocational schools (million) |
|---------------------------------|-----|-----|-----|-----|-----|-----|-----|
| 13.20                          | 14.31 | 12.84 | 11.64 | 14.09 | 18.10 | 20.87 |

| Chart 5: Enrollments of all kinds of senior secondary schools (10 thousand) |
|---------------------------------|-----|-----|-----|-----|-----|
| Year                           | Total | Senior High School | SVS & STS | Adult Secondary School |
| 2004                           | 3648.99 | 2220.37 | 1409.25 | 19.37    |
| 2005                           | 4030.94 | 2409.09 | 1600.04 | 21.81    |
Diagram 1: The intakes and enrollments of higher vocational colleges (include independent vocational college and higher specialized institution)

* The explanation to TVET schools, colleges and training institutions in China:

(1) At the post secondary level, there are higher vocational/technical colleges (HVC)(under the MOE). Senior skilled worker’s schools(SSWS) and Technician colleges(TC) are under the MOHRSS(labor). HVTC:SSWS/TC is 3:2.

(2) At the senior secondary level, 3/4 schools are under the MOE: They are secondary vocational high schools(SVS), secondary technical schools(STS) and adult high schools. Only 1/4 schools belong to MOHRSS which are called skilled workers schools(SWS).

(3) There are many training institutions which registered at department of labor(under the MOHRSS). Many of them are private.

(4) The schools and colleges under the MOHRSS(SWS,SSWS and TC) are very good at competency based training and skill development required by the industry. The schools and colleges under the MOE traditionally emphasize subject instruction. In recent years, they are reforming towards to meet the requirement from workplace.

(5) In all kinds of schools and colleges, girls and boys share the same portion in number for many years.

(6) No any official statistics for dropout.

4. VOCATIONAL/TECHNICAL EDUCATION(VTE)

After a long period heavy effort, China has almost made the 9 years Compulsory Education universal. The average time a Chinese receiving education is more than 8 years. The senior secondary education popularized quickly, the gross enrollment rate of senior secondary education reached 66% in 2007. Since 1999, the number of students enrolled in higher education institutions was keeping expanding. In 2008, total enrolment of post-secondary school has increased more than fourfold compared with 1999. There were 4.13 million students in colleges and universities in 1999 while the number has jumped to 18.28 million in 2008. The number of students participating in post-secondary education had surpassed 27 million in 2007.

Compare with developed countries, China has lower GDP and productivity as well as
the level of education especially the level of vocational and technical education. Among the enterprises’ staff, 38.99% have not finished junior high school’s education. In the group of technical workers, only 9% possess high-level and 21% are above middle-level. Although the portion of registered unemployment in the cities and towns is only 4.1% by 2007, but in 2007, the labor and social security ministry estimated that there were more than 5 million laid-off workers were unemployed, and 8 million surplus rural labors need to be transferred into city. The target set up by government is a big challenge: to improve labors’ quality and in the mean time, to develop human resource. It is crucial for greatly developing vocational/technical education (VTE) and training qualified applied personnel and high quality labor force. In order to do that, we have to change the traditional idea which pays attention to VTE instead of general education as well to post workers instead of technical managers.

In the new century, China starts a new stage that whole country will build up a fairly well-off society in all aspects and increase the pace to modernization. Government raises a series of strategic targets of continuing development for economy and society: Taking development as topic, reforming as power, structuring adjustment as mainline, promoting the upgrade of industry and progressing of technology, expanding export, developing western part of China, improving development of rural area and fastening citify, increasing employment, continually implementing the strategy of rejuvenating China by science and education, and to improve the quality of labor force in all-round. The human resource development should be taken as important strategy of China’s advance. The fourth National Conference for Vocational Education was held in July, 2002. The document of “The decision of the State Council on making great efforts to push forward the reform and development of vocational education” was published in September, 2002 which issued the government strategic targets and policies on VTE development. In October 2005, the State Council issued “Decision on making great efforts to develop vocational education”. Besides emphasizing the importance of VTE, the new policy provides more political and financial support to the VTE. The changes after the new policy are included in the 3rd part.

Vocational Education is an important part of Chinese whole education system. It is the important channel to improve advance of economy, society and employment in China. VTE consists of vocational school education and vocational training. In China, education is divided into three categories by different economic level and the level of universal education. They are post elementary school, post junior secondary school and post senior secondary school. Government pays attention to post junior secondary school level. As well, VTE is divided to junior, senior, and higher levels. Government emphasizes to establish and perfect the vocational system which owns both vocational school education and vocational training, coordinates and strengthens the links between VTE and VTE, and VTE and other education.
Diagram 2  VTE System

Diagram of the VTE System showing various educational levels and institutions:

- General H.E.
- Higher V.E.
- Senior H.V.E.
- Junior H.V.E.
- G.J.H.S.
- G.S.H.S.
- Independent Higher VE Institute
- Adult Higher College
- Others Higher VE in University
- All Kinds of Vocational Training
- General secondary VE school
- Adult secondary VE school
- All Kinds of Vocational Training
- Juniors VE school
- VE in General Junior school
- All Kinds of Vocational Training
Diagram 3 Education system and student’s age

Note: Chinese children start their 9 year compulsory education since 6 years old. Elementary school costs 6 years, junior secondary school costs 3 years and another 3 years for senior secondary school (general high school or secondary vocational school). Higher VE is 2-3 years and university for bachelor degree is 4 years.

Traditionally, within the system of vocational education, teaching theoretical
knowledge is valued higher than imparting practical skills. Thus a great challenge for government and educational policy lies in the maintaining new values in society, which are supported not only by university educated academics, but also experts and specialists who are able to work on their own, be creative and to sustain innovation.

5. VOCATIONAL TRAINING

Vocational training comprises apprenticeships, on-the-job training, re-training and short training courses that might take place before or during employment. These forms of continuing vocational education are partly organized in accordance with vocational standards. Country-wide networks of certification centers are currently being build up. Vocational training is supplied by a huge variety of organizations such as department training centers, companies, employment agencies, the unions, public and private organizations and vocational schools.

5.1 Training Institutions

Vocational and technical skill training is non-academic credentials activities with the purpose of initial employment, career change or job change, or only aim at improving vocational and technical skill. Vocational training is carried out by vocational institutes or schools. By the statistics of labor and social security ministry 2006, there were 6.45 million people who lost their jobs (unemployed or laid-off) being trained for re-employment. Among them, there are 650 thousand people received the training for “start a new business”. There are 3212 employment training centers in China and 21462 training institutes which owned by social force.

5.2 Skill Certificate System

There are 5 levels in national occupational qualification certificate system:

Level 5 (primary), level 4 (middle), level 3 (higher), level 2 (technician), and level 1 (higher technician)
6. FINANCE INVESTMENT AND DIFFERENT STAKEHOLDER

6.1 Finance Investment

In the case of China the vocational education law enforced in 1996 provided the general regulatory framework. The sources for investments in vocational education come from local governments, the budgets for the running costs are provided by the provincial administrations. Various government and administration levels are assigning earmarked financial resources and guarantee the gradual increase of the resources, while the provincial governments do assign additional funds for the educational budget and do secure a percentage for vocational education.

The main resources of finance of VTE come from:

♦ Government finance: pay in full the average expenses for the students

♦ Enterprise finances: enterprise shall bear the expenses for the vocational education of its own employees and of the persons it plans to employ.

♦ Local Education Additional Funds

♦ Students’ tuition: VTE students should pay tuition fee which subjects to major.

♦ Social donations: the donations from enterprises, institutions, non-governmental organizations, other public organization, and individual citizens.

The earnings derived by vocational schools from running enterprises or providing social services.

The total national finance of VTE in 2006 is RMB 113.526 billion.

Chart 6: Composition of the finance investment of Vocational Education 2006
The Chinese government has increased financial support to VTE, especially secondary VTE since the year 2005. The purpose of doing this is making VTE more attractive, and to let more junior school graduates be involved in VTE to enhance their education level and develop competency level, rather than be involved in labour market directly.

6.2 Different Stakeholders

Manifold centralist bodies beginning with the Council of State and various levels of ministries and subordinate bureaucracies dominate the structures of VTE in China. Major ministries are the MOE and MOHRSS. Various responsibilities are allocated at the different administrative layers, e.g. for planning, coordination, control etc. Besides these bodies there are also the industry associations involved in planning and consultation processes.

Further important stakeholders are the employment agencies, the unions, while the companies and professional organizations play only minor roles.

**Chart 7: System of establishing VE schools by Different Stakeholder (2000)**

<table>
<thead>
<tr>
<th>Schools</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government departments of education</td>
<td>61%</td>
</tr>
<tr>
<td>Other industrial departments</td>
<td>23%</td>
</tr>
<tr>
<td>Enterprises</td>
<td>11%</td>
</tr>
<tr>
<td>Organizations and citizens</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
7. MAIN ACHIEVEMENTS

7.1 Emphasis and Support from Central Government

In the new century, State Council has held National Conference for Vocational Education for three times, and raised a series of policy measures to promote the reform and development of vocational education. The document of “The decision of the State Council on making great efforts to advance the reform and development of vocational education” was published in late September, 2002. It issued the government strategic targets and policies on VTE development in 21 century. In October 2005, the State Council issued “Decision on making great efforts to develop vocational education” again. Besides emphasizing the importance of VTE, the document made the VTE as the priorities in the national education development strategies which had already been made as priority in whole country’s development, and decided to provide more political and financial support to the VTE based on 2002’s policy.

7.2 Continuously Expanding the Scale of Vocational Education

In 2005 and 2006, enrollment of vocational secondary school increased by 1 million people annually. In 2006, 7.48 million students were enrolled in secondary vocational schools in the country, which accounted for 46% of the total senior high school education level. With as many as 18.1 million students in school, both number of enrollment and students in school set record in history. Higher vocational education has also greatly developed. With 2.93 million new students admitted in 2006, there were as many as 7.96 million students in schools, taking 50% of students’ participation in post-secondary learning. As many as 150 million person/time urban and rural laborers have taken various kinds of training.

7.3 Improving the Quality of VTE

It has become clear that reform and development of Chinese vocational education should serve student and focus on employment. Vocational institutes and schools have cooperated with society, enterprises and villages and become market oriented. Via various ways such as combining learning and practice, cooperation between school and enterprise, learning while working, education reform, developing career morality and emphasizing on practical and vocational competency skill, over 95% of the students have become employed. In recent years, “National Skilled Workers Training project”, “National Rural Labor Force Transferring Training project”, “Rural applied technician training project”, and “Continuous education and Re-employment Training project” has remarkably increased the consciousness and capacity of vocational education’s serving economic society and enhanced its vitality, which was widely recognized and supported by people on general.

7.4 Financial Support by Government

In 2005, National Vocational Education Conference stated clearly that during the 11th 5 year plan, 10 billion Yuan RMB from central government shall be used for fundamental capacity building of vocational education, In 2005 and 2006, with funding from central
government, 763 vocational education practice bases, 446 county vocational education centers, 468 modal vocational middle schools and 28 modal vocational and technological colleges were set up with emphasis. National quality improvement scheme of vocational middle school teachers has also been launched with 12 thousand professional teachers to be trained this year. Funding has also been appropriately arranged from local government for capacity building of vocational schools and institutes and training of vocational teacher.

In 2006, 800 thousand vocational middle school students from poor families were benefited 800 million Yuan special funding from central government with matching funding from local governments to help poor students to complete vocational education. In May this year, Chinese government increased its help for poor students of higher learning as well as vocational colleges and middle schools with 20 million students benefiting form 50 billion Yuan from central government annually. According to the scheme, in the 1st and 2nd years in vocational middle schools, students who are agriculture registered permanent residence, students from county/town who are non-agricultural registered permanent residence and urban poor students will receive an annual subsidy of 1,500 yuan from central government for each year. In the 3rd year, student should pay for study and living with income from working while learning and on-post practice. With all the subsidies in place, which should be enough to balance the cost of study and living, about 16 million middle school students will become beneficiaries.

7.5 Reform Instruction Model of Vocational Education

In 2006, MOE made 107 secondary vocational schools as laboratory school for the new education models of ‘combing working and learning’ and ‘learning while working’. Instead of the traditional school and classroom oriented vocational education model, vocational education in recent years has become employment oriented via exploring models of combing working and learning, school–enterprise cooperation and learning while working. For vocational education in China, the 1st year is normally for basic knowledge learning with skill learning for the 2nd and on-post practice for the 3rd year.

7.6 Strengthen Legislation Work

In 1996, China issued and implemented ‘Vocational education law’, so that stakeholders in vocational education can run and administrate vocational institutions according to laws.

8. CHALLENGE AND COUNTER-MEASURE

8.1 Continue to Expand Vocational Education Scale

In 2007, the gross enrollment rate of senior secondary education was 66%, and there are still strong demands for the vocational education graduates. As a result, it’s necessary to keep expanding vocational education scale. In the recruitment and admission conference for secondary vocational school, Minister of MOE set 8.2 million
as the recruitment objective, endeavoring to make the proportion of vocational students surpass 50% in the senior education level.

8.2 Improve the Vocational Education Quality, Relevance and Flexibility

Ongoing expansion of vocational education scale has enlarged the distance between learning demands and teaching condition. As continuously increasing the enrollment, China has to improve the flexibility of learning in order to make majors, curriculums and academic standards adapting to the labor market. We have to reform the education administration to set a bridge between school diploma and occupation qualification.

We also have to advocate the new education models, such as ‘combing working and learning’ and ‘learning while working’ to improve the quality of vocational education.

8.3 Mechanism and System Innovation

In order to attract the industry and enterprise to participate in vocational education, MOE advocate organizing and establishing vocational education group which is made of school, industry and enterprise.

For students in wider rural area, it’s best to implement ‘to study in vocational education institutions in county level for a year, to study in vocation school in city level for a year, and on-post practice for the last year as a new education model.

8.4 Teacher’s Quality

come from enterprises and industry is low, and the diploma level in vocational teacher is worse than teachers in general high school.

It is imperative to attract more on-the-job, high-skilled and especially retired technicians from enterprise to be teachers or temporary trainers at vocational school.

It is also necessary to take measures to promote the teachers’ professional development who have both academic diploma and occupational qualification.