

## PROJECT INFORMATION DOCUMENT (PID) CONCEPT STAGE

Report No.: PIDC45947

<b>Project Name</b>	China: Gansu Technical and Vocational Education and Training Project (P154623)
<b>Region</b>	EAST ASIA AND PACIFIC
<b>Country</b>	China
<b>Lending Instrument</b>	Investment Project Financing
<b>Project ID</b>	P154623
<b>Borrower(s)</b>	People's Republic of China
<b>Implementing Agency</b>	Gansu Provincial Department of Education
<b>Environmental Category</b>	B-Partial Assessment
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<b>Concept Review Decision</b>	Track II - The review did authorize the preparation to continue

### I. Introduction and Context

#### Country Context

Over the past three decades, while China has experienced unprecedented economic growth, poverty has remained heavily concentrated in rural areas as well as in the interior and western regions of the country. Consequently, the country's growth has been accompanied by increases in inequality. Between 1980 and 2010, the Gini coefficient rose from about 0.3 to just below 0.5, making it among the least equal 25 percent of countries worldwide (Sicular 2013). The urban-rural income gap is a significant underlying factor in the country's income inequality, contributing to 51% of the overall inequality in 2011 (Li et al. 2013).

Part of this urban-rural income gap is explained by differences in educational opportunities, wages, and labor earnings between urban and rural areas of the country. Access to quality education remains a challenge in poor, rural communities where few resources exist to support students, teachers, and schools.

Research has shown that education is the dominant factor that determines whether rural laborers are

successful in finding wage employment (de Brauw et al. 2002, de Brauw and Rozelle 2008). Similarly, international evidence on wage returns to education shows that one additional year of education adds approximately 10% to a person's wage at the mean of the distribution (Montenegro and Patrinos 2014).

In China, returns to education have increased considerably between the 1980s and 2000s. While earlier studies showed returns to education as low as 2.0% using 1986 data, more recent studies suggest returns to education are closer to the international average of 10% (Liu and Zhang 2013). This finding has been corroborated in a recent meta-analysis of studies on the returns to education in China: Awaworyi and Mishra (2014) show that average returns to education in China are 10.25%.

Differences in wage returns by different levels of education have also been documented. For instance returns to technical and vocational secondary education exceed the returns to general secondary education in countries where such comparisons can be made (Patrinos, Ridao-Cano and Sakellariou 2006).

More recent studies point to the importance of skills in wage returns. Skills acquired through schooling account for a large part of the returns to schooling (Fasih, Patrinos and Sakellariou 2013). In 22 high-income countries, the average wage premium corresponding to a one standard deviation increase in measured skills is 18% (Hanushek et al. 2015). This, however masks a great deal of heterogeneity, since the estimates in their sample of countries range from a low of 12% (Nordic countries) to a high of 28% (the United States). Taken together, the global evidence on returns to education underscores the value of skills training to future success in the labor market.

In this regard, high quality technical and vocational education and training (TVET) programs have an important role to play, particularly in China. As the country's economy strives to transition from production to innovation, its labor force will need to acquire the right balance between general skills, occupation-specific skills and learning on the job (Biavaschi et. al 2012). This is particularly important as the current skills mix in China does not compare favorably with that of industrialized countries. While there is growing demand for qualified technicians and skilled workers, only half of China's 140 million employees in urban enterprises can be classified as skilled (Ministry of Human Resources and Social Security 2008 as cited in Johanson and Wang, 2013).

To meet this growing demand, China has recently redoubled its focus on expanding Technical and Vocational Education and Training (TVET): the Modern Vocational Education Strategy (2014-2020) seeks to increase the number of students in vocational education institutions from the present figure of 29.3 million to 38.3 million by 2020.

While such an approach acknowledges the role of education as a key determinant of economic status and life out of poverty, evaluations of TVET programs both in China and internationally underscore the need to carefully design skills development programs so that they can have both meaningful and lasting impacts.

Card et al. (2011) capture the wide range of findings in the empirical literature from the US, Europe and Latin American. In the US, the impacts of training programs are modest at best, with substantial variations in impact depending on the characteristics of the participants (women benefit more than men in some programs) and type of training (on-the-job training is more effective than classroom training) (See Heckman, Lalonde and Smith, 1999 for more information on training programs).

Evidence from European programs is less definitive in part due to a lack of experimental studies. In contrast, a review of 69 impact evaluations in Latin America finds that on average these programs have more positive impacts than those in the US and Europe (Betcherman, et al. 2004), findings similar to those of Nopo and Saavedra (2003).

As China continues to look to TVET graduates as key inputs to its growth and innovation strategy, it will be important to ensure that the lessons from these evaluations are well-incorporated into TVET initiatives. At the system level, this includes the need to ensure (a) independent quality assurance mechanisms for schools and students, (b) strong linkages between employers and schools and (c) balance between practical and theoretical education. At the school level, employer involvement is particularly important to ensure that (a) course content is up-to-date and (b) that students and teachers have the opportunity to participate in on-the-job training. Lastly adequate infrastructure is needed to allow schools to offer TVET programs that are oriented towards responding to labor market signals and producing skilled and employable workers that can adapt flexibly to evolving labor market needs.

### **Sectoral and Institutional Context**

Gansu province, located in northwest China, is one of the poorest provinces in the country. It consistently ranks last or second to last in per capita GDP among Chinese provinces. It also lags behind the rest of the country in terms of total industrial output and value added. The per capita income in Gansu is substantially below that of the national average, both at the urban and rural levels. Urban households in 2013 on average reported a per capita income of 29,547 RMB. Urban households in Gansu in contrast reported per capita incomes of only 20,149 RMB. For rural households, the gap is even starker (See Figure 1 in Annex 4).

Studies have shown that returns to education are slightly lower in rural areas than in urban areas. Estimates from China show that one additional year of education adds approximately 8.2% to a rural person's wage, with higher returns at 10.7% for young rural workers (age 35 years or younger) (Li et al. 2013). This is consistent with much of the international evidence on returns to education (Montenegro and Patrinos 2014). There are also larger returns to upper secondary education; while the return of an additional year of junior high is only 3.2 percent, the return to a year of post-junior high is 11.8% (Zhang et al. 2008). Moreover, rural residents who have received professional or technical training are 17.7 percent more likely to find a job than those without (Zhang et al. 2008). Together, this underscores the important role TVET programs play in ensuring that students acquire the necessary skills for successful employment in Gansu.

In China, more than 80% of 16-30 year olds are now employed off-farm (Yang et al. 2015). Perhaps unsurprisingly, the provincial strategy for economic transformation and sustainable development is centered on industrial development. Under this strategy, the following pillar industries have been identified:

- Petrochemicals
- Equipment Manufacturing
- Clean Energy
- Tourism
- Culture
- Non-ferrous metallurgy
- Modern Logistics

Together these industries account for 70% of the province's gross domestic product.

One element of the provincial strategy is the development of a new district dedicated to Science and Industry outside Lanzhou, the capital city of the province. Several secondary and tertiary TVET schools in and around Lanzhou will relocate to the new district. A cluster of these schools will form a TVET park that is planned within the new district. Schools in the TVET park will share resources including buildings, equipment and workshops in which students will be able to practice their skills.

A review of the international evidence suggests that before any benefits of the infrastructure improvements envisioned under the provincial strategy can fully materialize, the province must address several challenges facing the TVET system:

1. There is currently no effective quality assurance mechanism - either for students or for schools.
  - a. For instance, there is no regular assessment of the skills of TVET graduates nor is there a mechanism for employers to provide feedback to schools on the skills of their graduates.
  - b. Schools quality is only assessed by the line ministry. There is no independent third party evaluation of schools.
2. Inadequate and unequal financing mechanisms for TVET in Gansu undermine equity. The decentralization of education funding has long meant that there are disparities between urban and rural areas not only across China but within Gansu. In Gansu, tuition is now free for all TVET students at the secondary level. In addition, they receive a subsidy of RMB 1500/student for living expenses. At the tertiary TVET level, tuition is free for poor students.
3. Schools are unable to deliver high quality skills to their graduates. This is often due to a confluence of factors. These include: inadequate infrastructure, outdated curricula, insufficient teacher training and a heavy focus on theory over practical skills when teaching TVET students.

In order for the province to effectively meet the needs of its TVET graduates and industry, a stocktaking of the skills graduates possess and employers demand is necessary. One approach to such a stock-taking is the STEP Skills Measurement Survey. This survey which incorporates both employers and job-seekers is an important tool for assessing where and when skills gaps exist and what can be done to fill them.

This is imperative because skills, both cognitive and socio-emotional, are fundamental to the future prospects of graduates. Glewwe, Huang, and Park (2013) show that cognitive and socio-emotional skills as early as age 9-12 are predictive of the education and employment status of children in Gansu 9 years later. The authors find that socio-emotional skills such as higher self-esteem have a positive impact on being employed at ages 17-21, over and above the impacts of cognitive skills. This is consistent with findings from developed countries that have found positive impacts of not only cognitive skills but also of socio-emotional skills on labor productivity (Almlund et al. 2011, Lindqvist and Vestman 2011). Furthermore, findings from Gansu show that the positive impact of self-esteem on employment is primarily among girls, suggesting that there may be different types of skills that translate to jobs among girls and boys.

Similarly, it is important to not only improve the available infrastructure for TVET but also to strengthen TVET programs in Gansu so that they can equip young people with the skills they need to be well-prepared for the labor market and for life.

## **Relationship to CAS**

This project promotes more inclusive development, one of the three main areas of engagement under the World Bank Group's Country Partnership Strategy (CPS) for FY13-FY16.

The project supports the Bank's twin goals of reducing extreme poverty and boosting shared prosperity. Specifically, the project focuses on strengthening skills development programs in Gansu, a poor province in China, with the aim of enhancing opportunities for graduates of TVET schools. The schools that have been identified for inclusion in this project have a substantial share of poor and rural students (See Figure 2 in Annex 4).

## **II. Proposed Development Objective(s)**

### **Proposed Development Objective(s) (From PCN)**

The project development objective is to improve the quality of technical and vocational education and training (TVET) in selected project schools of Gansu and improve school-industry linkages.

### **Key Results (From PCN)**

Key results of the project will be measured in terms of the two key areas of the PDO. Possible indicators for each area are listed below. Further discussions with the client will narrow the list down:

1. Quality of TVET
  - Percentage of graduates obtaining both skills certificate and diploma
  - Starting salary
  - Employment rate upon graduation
  - Employment rate within 6 months of graduation
  - Employment rate within 12 months of graduation
2. School-industry linkages
  - Number of enterprises cooperating with schools on the basis of a signed agreement
  - Number of teachers receiving training through school-industry partnership
  - Number of workshops established within schools by industry

## **III. Preliminary Description**

### **Concept Description**

International experience suggests that combining work-place experience and training with school-based vocational education holds the most promise for successful outcomes provided the following general principles are observed:

1. There needs to be a clear understanding of what the market and government failures are and where the skills gaps are;
2. Training programs must have incentives to respond to market demands and ensure the quality of their graduates, often by working in close collaboration with employers.

The proposed project will be guided by such principles and available international evidence on what works to strengthen skills development programs in TVET schools. Activities proposed under this project align well with the existing international evidence on education, skills, and jobs. A recent

systematic review by Solutions for Youth Employment (2015), in partnership with the World Bank, highlights the importance of skills training on youth employment outcomes. The review reports on 113 experimental and quasi-experimental studies on youth employment interventions between 1990 and 2014. Results show that on average, interventions that focus on skills-training raise the probability of employment by 3.35% and lead to higher aggregate earnings (effects on both employment and earnings are statistically different from zero). Returns are larger when there are strong, explicit links between education and training programs and employers.

The importance of establishing strong linkages between training and jobs is also highlighted in the Independent Evaluation Group's (IEG's) 2012 report "Youth Employment Programs: An Evaluation of World Bank and IFC Support." Drawing on the World Bank Group's extensive experience with TVET programs, the report notes two key ingredients for success. First, comprehensive programs that combine both skills training and career guidance are the most effective in raising youth employment outcomes. Second, private sector participation in the content of skill development programs--such as curriculum development and training of teachers--leads more often to success. These ingredients are also highlighted in the framework for the SABER Workforce Development "What Matters" paper.

In addition, the activities proposed in this project reflect the lessons accumulated in the skills, livelihoods and jobs training literatures. For instance, the World Development Report on Jobs (World Bank, 2011) notes that: "On average across countries, the return to one additional year of work experience in nonagricultural activities is roughly one-half the return to one additional year of education at the beginning of work life." Thus making industry-sponsored workshops available to students during their schooling can help develop relevant experience that TVET graduates can take with them to their first employment.

The activities included in this project reflect the project design and implementation lessons learned from the Bank's TVET portfolio in China which spans projects in Guangdong, Liaoning, Shandong, Yunnan and Xinjiang. The experience from these projects underscores the importance of comprehensive reform packages at both the provincial and school levels which focus not only on improving facilities but on strengthening systems of instruction, assessment and evaluation.

Thus, the Gansu TVET Project follows these best practices identified by the World Bank Group and the broader scientific literature to improve the school-to-work transition for poor, rural youth in Gansu province.

The project activities are organized into four components.

Component 1: Strengthen the provincial TVET system

Under this component the project will:

- Undertake a study of financing mechanisms in Gansu's TVET sector to understand the causes of and solutions to funding gaps and propose policy options (Possibly using SABER-Workforce Development)
- Undertake a STEP Skills Measurement Survey to assess skills mismatches between graduates and employers
- Improve the provincial system for evaluating TVET schools by incorporating third-party evaluation
- Support provincial level TVET groups to review selected course content and establish a

mechanism to evaluate the curriculum being taught in TVET schools

- Establish a public-access online resource bank for TVET teaching and learning material, the content for which will be curated by sector experts
- Support an entrepreneurship incubator for students

Component 2: Improve school capacity to provide higher quality and more relevant skills

Under this component, the project will:

- Enhance school-industry linkages
  - For students: promote establishment of industry-sponsored workshops in TVET schools
  - For teachers: promote exchange of teachers and industry workers for short term training
- Improve in-service teacher training (ToT) to develop the professional knowledge and teaching skills of teachers in the project schools
- Reform curriculum and develop new teaching and learning materials
- Reform pedagogical practices. Focus on
  - Student-centered teaching
  - Competency-based teaching
- Improve existing school-based evaluation system for teaching and students
- Strengthen featured majors for each project school

Component 3: Improve school infrastructure

Under this component the project will:

- Construct buildings
- Procure equipment

Infrastructure improvements will take place in existing schools and shared infrastructure will be provided to the schools that will be relocated to the TVET park

Component 4: Capacity Building, Project Management, Monitoring and Evaluation

Under this component the project will:

- Provide training and office equipment for PMO and PIUs
- Facilitate South-South Learning for relevant departments and dissemination of experiences
- Supplement capacity of the PMO for project management, by ensuring consultants are available to assist with:
  - Project Coordination
  - Monitoring and Evaluation
  - Procurement and Financial Management
  - Environmental and Social safeguards
  - Civil Works Engineering
- Undertake an impact assessment of key project activities, including a tracer study comparing the graduates of TVET schools that participate in the project with graduates from non-project TVET schools. In order to have the most meaningful assessment of impact, the impact assessment will compare graduates from similar programs. The design of this impact assessment will be based on lessons learned from the evaluation literature described in preceding sections and on lessons from the evaluations that are a part of the existing portfolio of China TVET projects.

The activities described above will be carried out by the following project schools--all of which are DoE schools:

- Gansu Energy & Chemical Vocational College (to be relocated to the TVET park)
- Gansu Commerce & Trade Vocational College (to be relocated to the TVET park)

- Gansu Provincial Art School located in Lanzhou
- Gansu Senior Technical School of Mechanics located in Tianshui
- Jinchang Vocational and Technical School located in Jinchang

#### IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	x		
Natural Habitats OP/BP 4.04		x	
Forests OP/BP 4.36		x	
Pest Management OP 4.09		x	
Physical Cultural Resources OP/BP 4.11		x	
Indigenous Peoples OP/BP 4.10			x
Involuntary Resettlement OP/BP 4.12			x
Safety of Dams OP/BP 4.37		x	
Projects on International Waterways OP/BP 7.50		x	
Projects in Disputed Areas OP/BP 7.60		x	

#### V. Financing (in USD Million)

Total Project Cost:	141.00	Total Bank Financing:	120.00
Financing Gap:	0.00		
<b>Financing Source</b>			<b>Amount</b>
Borrower			21.00
International Bank for Reconstruction and Development			120.00
Total			141.00

#### VI. Contact point

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