

Country Name	<b>Capacity Development of Technical and Vocational Centers in Khyber Pakhtunkhwa</b>
Islamic Republic of Pakistan	

**I. Project Outline**

Background	<p>In Pakistan, industries and infrastructure in Khyber Pakhtunkhwa (KP) province were underdeveloped in comparison to Sindh and Punjab. Its conditions were further aggravated by the army's cleanup operation in 2009 and floods in 2010. Due to less opportunity for education and/or vocational training, unemployment rate in KP province was high particularly among young men. Therefore, empowerment of the youth was an urgent need but technical and vocational education and training (TVET) was not appropriately implemented at the technical and vocational centers in KP, due to capacity of teachers, lack of appropriate materials, deteriorated equipment, and curriculum that did not meet the needs of labor market.</p>				
Objectives of the Project	<p>Through (1) development of new supplementary teaching guides for electrician and machinist courses, (2) improvement of technical skills, knowledge and pedagogical methods in providing training of teachers (TOT) of master trainers (MT) and lead trainers (LT) from 3 GTVCs* of machinist and electrician courses, and (3) upgrading of teaching skills and knowledge of all teachers of 3 GTVCs through TOT by MTs and LTs, the project aimed at providing students at 3 GTVCs in Mingora, Gulbahar and Ghazi with quality vocational and skill training in machinist and electrician courses, thereby contributing to improvement of the technical skill level of GTVC graduates in KP to meet the needs of the labor market.</p> <p>*GTVC: Government Technical &amp; Vocational Centers</p> <ol style="list-style-type: none"> <li>Overall Goal: Technical skill level of GTVC graduates in KP is improved to meet the needs of the labor market.</li> <li>Project Purpose: Students at 3 GTVCs in Mingora, Gulbahar and Ghazi are able to receive quality vocational and skill training in machinist and electrician courses.</li> </ol>				
Activities of the Project	<ol style="list-style-type: none"> <li>Project Site: Khyber Pakhtunkhwa province (Location of project activities: Haripur, Swat and Peshawar districts) Government Technical Teacher Training College (GTTTC) is located in Hayatabad, Peshawar district. 3 target GTVCs are located in Ghazi (Haripur district), Gulbahar (Peshawar district) and Mingora (Swat district)</li> <li>Main Activities: <ol style="list-style-type: none"> <li>Development of new supplementary teaching guides, Confirmation of the list of necessary equipment, etc.</li> <li>Training of MTs of GTTTC and LTs from GTVCs, Review and finalization of the contents and modules of supplementary teaching guides, Development of TOT guideline, etc.</li> <li>Provision of TOT for teachers of machinist and electrician courses, Review and revision of the guideline for TOT, Assessment of TOT, etc.</li> </ol> </li> <li>Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <b>Japanese Side</b> <ol style="list-style-type: none"> <li>Experts: 2 persons</li> <li>Equipment: Training equipment for machinist course (universal milling machines, lathe machines, etc.), training equipment for electrician course (electric power &amp; machine training system, basic electricity &amp; electronics trainer system, etc.)</li> <li>Local expenses</li> </ol> </td> <td style="width: 50%; vertical-align: top;"> <b>Pakistan Side</b> <ol style="list-style-type: none"> <li>Staff Allocated: 3 persons</li> <li>Office space</li> <li>Local expenses: Repair of workshop building</li> </ol> </td> </tr> </table> </li> </ol>			<b>Japanese Side</b> <ol style="list-style-type: none"> <li>Experts: 2 persons</li> <li>Equipment: Training equipment for machinist course (universal milling machines, lathe machines, etc.), training equipment for electrician course (electric power &amp; machine training system, basic electricity &amp; electronics trainer system, etc.)</li> <li>Local expenses</li> </ol>	<b>Pakistan Side</b> <ol style="list-style-type: none"> <li>Staff Allocated: 3 persons</li> <li>Office space</li> <li>Local expenses: Repair of workshop building</li> </ol>
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Project Period	April 2014 – June 2016 (Extension period: April 2016 – June 2016)	Project Cost	(ex-ante) 198 million yen, (actual) 233 million yen		
Implementing Agency	Technical Education and Vocational Training Agency (TEVTA), Government of KP (KPTEVTA)* *Directorate of Technical Education and Manpower Training (DoTE) at the time of signing of R/D. KPTEVTA from April 2014				
Cooperation Agency in Japan	UNICO International Corporation Asia Engineering Consultant, Co., Ltd.				

**II. Result of the Evaluation**

## &lt;Constraints on Evaluation&gt;

- In this Ex-Post Evaluation, an evaluation judgment was made primarily by analyzing information acquired by sending and collecting questionnaires, and through telephone and e-mail interviews with persons concerned due to the impact of COVID-19. Field survey was not conducted.

**1 Relevance**

## &lt;Consistency with the Development Policy of Pakistan at the Time of Ex-Ante Evaluation&gt;

KP government compiled "Khyber Pakhtunkhwa Comprehensive Development Strategy (2010-2017)", where development of human resources in industrial sector was one of the pillars as an important strategy to create employment, improve livelihood, and promote economic development in KP.

## &lt;Consistency with the Development Needs of Pakistan at the Time of Ex-Ante Evaluation&gt;

As described in "Background" above, the project was consistent to the needs of quality vocational and skill training in KP at the time of ex-ante evaluation.

## &lt;Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation&gt;

In the Japanese assistance policy to Pakistan as of 2013, one of the three priority areas was assistance to improve human security and social infrastructure, including assistance in technical education towards employment<sup>1</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

## 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the project completion. Although the target was not defined for each indicator, there was a general tendency of increase of the number of students enrolled at target GTVCs and certification was granted to all the graduates who graduated GTVC as well as to teachers who participated in the TOT. During the project, supplementary teaching guides were developed, printed in May 2016 and distributed to GTVCs in May and June 2016. The supplementary teaching guides were adopted by the TVET institutes. The number of students enrolled in machinist and electrician courses at the three target GTVCs was increased from 2014 to 2016 except that of electrician course at Ghazi and Mingora GTVCs (indicator 1). The decrease of the students was attributed to the decrease of the graduates who passed the exam of 10 grade, which was the requirement for the electrician course. At all the three target GTVCs, where the supplementary teaching guides were introduced, all the students who graduated in 2016 were certified for both the machinist and the electrician courses (indicator 2). During the project, a total of 4 MTs and 12 LTs (8 machinist and 8 electrician) were trained from each GTVCs/GTTTC and TOT was conducted at each GTVC by project completion. Among the target GTVCs, all the teachers were certified, according to the available data, although the data were not obtained as planned (indicator 3). At the target GTVCs, it was considered that the majority of the students were satisfied with the courses provided based on the results of the student evaluation at the end of course and comments by students, although the specific quantitative data was not clear (indicator 4).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued to the time of ex-post evaluation. After the supplementary teaching guides were adopted by the institutes, a major reform took place in vocational stream in 2018, which resulted in adoption of curricula based on the Competency Based Training & Assessment (CBT&A). Nevertheless, the supplementary teaching guides developed by the project were equally beneficial in CBT&A trainings and are still utilized. The number of students enrolled has been increasing at Mingora GTVC but slightly decreasing at Ghazi GTVC due to the influence of the reform of vocational training system<sup>2</sup>. The data was not available at Gulbahar GTVC (indicator 1). At Ghazi GTVC, the rate of students certified has been maintained at 100% for both machinist and electrician courses since project completion. At Gulbahar and Mingora GTVCs, sufficient data was not obtained but the majority of students were certified as far as the obtained data show (indicator 2). The teachers certified during the project have been continuously and appropriately providing vocational training of machinist and electrician courses at the three target GTVCs, utilizing the supplementary teaching guides, according to the questionnaire to the GTVCs (indicator 3)<sup>3</sup>. According to the questionnaire, the three target GTVCs consider that the most of students were satisfied with the courses provided at their GTVCs through the good results of exams as well as favorable comments and active responses of students in classroom (indicator 4).

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved. According to KPTEVTA, the new supplementary teaching guides developed by the project have been implemented in machinist and electrician courses at all GTVCs in KP. In KP province, although sufficient data of the whole KP was not available, according to the information through GTVCs, the majority of the students in machinist and electrician courses were certified in accordance with the new supplementary teaching guides in 2020 (indicator 1). In regard to the number of GTVC graduates who are employed, no data was available (indicator 2). GTVCs do not have the statistics on the employment of their graduates currently. However, as follow-up of students for job placement is currently stated as a part of TVET policy in KP, the data will be available in near future.

<Other Impacts at the time of Ex-post Evaluation>

No negative impact has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results							
(Project Purpose) Students at 3 GTVCs in Mingora, Gulbahar and Ghazi are able to receive quality vocational and skill training in machinist and electrician courses.	(Indicator 1) Number of students enrolled in 3 GTVCs which offer machinist and electrician courses in accordance with the new supplementary teaching guides	Status of the Achievement: achieved (partially continued)							
		No. of students enrolled (for 1-year course)							
		Course/year		2014	2016	2017	2018	2019	2020
		Ghazi	Machinist	19	44	41	41	37	38
			Electrician	70	58	65	69	44	48
		Gulbahar	Machinist	13	46	N/A	N/A	N/A	N/A
			Electrician	30	146	N/A	N/A	N/A	N/A
Mingora	Machinist	0	10	N/A	N/A	3	10		
	Electrician	30	27	23	45	46	48		

<sup>1</sup> Source: Ministry of Foreign Affairs, "ODA Country Data Book in 2013"

<sup>2</sup> During the project, there were two trades for both machinist and electrician courses, that is, one-year course and two-year course. In 2019, this system was reformed and currently there are two trades in machinist course (Basic Machinist (six month), Computerized Numerical Control (CNC) (six months)) and three trades in electrician course (General Electrician (six months), Solar TV Electrician (six months), Industrial Electrician (one year)). After the reform, the number of applicants for GTVCs is decreasing in general, and, thus, the number of students enrolled is decreasing at some courses/institutes.

<sup>3</sup> The indicator 3 is defined as the number of teachers certified during the project. As the certified teachers are providing courses with capacities recognized during the project, it is considered that the effects aimed by the indicator 3 have been continued as a result of TOT by MTs and LTs.

	(Indicator 2) Number and percentage of students of 3 GTVCs who were certified in machinist and electrician courses with the new supplementary teaching guides	<p>Status of the Achievement: achieved (partially continued) (Project Completion) No. and percentage of students graduated/certified (2016, for 1-year course)</p> <table border="1"> <thead> <tr> <th rowspan="2">GTVC</th> <th colspan="3">Machinist course</th> <th colspan="3">Electrician course</th> </tr> <tr> <th>Graduated</th> <th>Certified</th> <th>%</th> <th>Graduated</th> <th>Certified</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>Ghazi</td> <td>44</td> <td>44</td> <td>100</td> <td>58</td> <td>58</td> <td>100</td> </tr> <tr> <td>Gulbahar</td> <td>46</td> <td>46</td> <td>100</td> <td>146</td> <td>146</td> <td>100</td> </tr> <tr> <td>Mingora</td> <td>10</td> <td>10</td> <td>100</td> <td>27</td> <td>27</td> <td>100</td> </tr> </tbody> </table> <p>(Ex-post Evaluation)  <ul style="list-style-type: none"> <li>Ghazi: 100% for both machinist and electrician courses since project completion (until 2020)</li> <li>Gulbahar: 80% students (127 out of 158) of the electrician course were certified in 2017*.</li> <li>Mingora: More than 90% of students (the No. of total students is approximately 70) of the electrician course were certified in 2020*.</li> </ul>           *The data other than this was not available for Gulbahar and Mingora GTVCs.</p>	GTVC	Machinist course			Electrician course			Graduated	Certified	%	Graduated	Certified	%	Ghazi	44	44	100	58	58	100	Gulbahar	46	46	100	146	146	100	Mingora	10	10	100	27	27	100
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	(Indicator 3) Number of GTVC teachers who are certified by GTTTC to provide vocational training of machinist and electrician courses, utilizing the new supplementary teaching guides	<p>Status of the Achievement: partially achieved (continued) (Project Completion) No. of teachers certified (2016)</p> <table border="1"> <thead> <tr> <th rowspan="2">GTVC</th> <th colspan="3">Machinist course</th> <th colspan="3">Electrician course</th> </tr> <tr> <th>Total No. of teachers</th> <th>No of teachers Certified</th> <th>%</th> <th>Total No. of teachers</th> <th>No of teachers Certified</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>Ghazi</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>Gulbahar</td> <td>2</td> <td>2</td> <td>100</td> <td>4</td> <td>4</td> <td>100</td> </tr> <tr> <td>Mingora</td> <td>1</td> <td>1</td> <td>100</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> </tbody> </table> <p>*Whether the teachers in the above table are MTs or LTs is not identified. Although the data were not obtained as planned, all the teachers were certified, according to the available data. (Ex-post Evaluation)  <ul style="list-style-type: none"> <li>The teachers certified during the project have been continuously and appropriately providing vocational training of machinist and electrician courses at the three target GTVCs, based on the supplementary teaching guide, according to the questionnaire to GTVCs.</li> </ul> </p>	GTVC	Machinist course			Electrician course			Total No. of teachers	No of teachers Certified	%	Total No. of teachers	No of teachers Certified	%	Ghazi	N/A	N/A	N/A	N/A	N/A	N/A	Gulbahar	2	2	100	4	4	100	Mingora	1	1	100	N/A	N/A	N/A
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Mingora	1	1	100	N/A	N/A	N/A																														
	(Indicator 4) Number of satisfied students	<p>Status of the Achievement: partially achieved (partially continued) (Project Completion)  <ul style="list-style-type: none"> <li>According to the student evaluation at the end of course and comments by students, the majority of the students were satisfied with the courses provided at the three target GTVCs.</li> </ul>           (Ex-post Evaluation)  <ul style="list-style-type: none"> <li>According to the questionnaire to GTVCs, the most students have been satisfied with the courses provided at the three target GTVCs.</li> </ul> </p>																																		
(Overall Goal) Technical skill level of GTVC graduates in KP is improved to meet the needs of the labour market.	(Indicator 1) Number of students who are certified in machinist and electrician courses in accordance with the new supplementary teaching guides	<p>(Ex-post Evaluation) partially achieved  <ul style="list-style-type: none"> <li>In 2020, at least the following number of students were certified, according to the available data*.                According to GTVCs, the majority of the students were certified.                Machinist course: 77 students                Electrician course: 318 students</li> </ul>           *The data that covers the whole KP province was not available due to survey limitation caused by COVID-19.</p>																																		
	(Indicator 2) Number of GTVC graduates who are employed	<p>(Ex-post Evaluation) not verifiable  <ul style="list-style-type: none"> <li>Data not available</li> </ul> </p>																																		

Source: JICA documents, Questionnaire and interview to KPTEVTA, GTTTC and GTVCs (Ghazi, Gulbahar, Mingora)

### 3 Efficiency

Both the project cost and the project period exceeded the plan (ratio against the plan: 118% and 113%, respectively). The project period exceeded the plan because the finalization of the specification change of equipment for electrician course was delayed, due to the delay of the provision of precise specification of equipment by local suppliers, which caused the delay of the installation of equipment, and then, delay of the start of training. The outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

### 4 Sustainability

#### <Policy Aspect>

In the National "Skills for All" Strategy (2018), which defines the targets in TVET by 2023, lists action plans such as TVET sector governance, enhancing TVET capacity, quality assurance in TVET, access and equity in TVET, enhancing engagement, and skill development for international markets.

#### <Institutional/Organizational Aspect>

KPTEVTA is an autonomous public sector TVET entity working under the administration of Industries, Commerce and Technical Education Department, KP government, and is entrusted with the responsibility to impart TVET-related trainings to the youth of KP province in demand-driven trades and technologies. It is a well-established body with 3,500 of staff, which is sufficient to execute its mandate. GTVCs are located in all districts in KP province with GTTTC as in-service teachers training institutes. There are no major obstacles to implement their duties at GTTTC and GTVCs.

#### <Technical Aspect>

At GTTTC, the staff have required skills such as institutional and financial management as well as ICT, and they have trained teachers in various areas including ICT. Also trained MTs are allocated to GTTTC for teachers' training. At GTVCs sufficient number of trained teachers are allocated (1 to 4 in each course at each GTVC) and providing student teaching properly. KPTEVTA has made it mandatory for teachers to participate in three-month TVET Institute Management Training prior to promotion on next higher grade, although one GTVC surveyed and GTTTC consider that it would be desirable to have more training opportunities. The materials developed by the project have been still used and helpful for teacher training and student training. These materials are parts of institutes libraries and are made available to the students of new batches. The equipment provided by the project has been still utilized. To verify the maintenance of the equipment, Monitoring & Evaluation section of KPTEVTA is mandated with the responsibility to monitor and regulate the utilization and maintenance of available resources.

<Financial Aspect>

KPTEVTA is provided with sufficient budget by the KP provincial government. KPTEVTA allocates sufficient budget to institutes for various purposes like training materials, consumables, staff salary, and developmental budget, etc. KPTEVTA has been also allocating operation & management (O&M) budget as per demand of each GTVC.

<Evaluation Result>

In light of the above, no problem has been observed in terms of the policy, institutional/organizational, technical, and financial aspects of the implementing agency. Therefore, the sustainability of the project effects is high.

5 Summary of the Evaluation

The project partially achieved the Project Purpose of quality vocational and skill training as the number of students enrolled at the target GTVCs increased and all the students in machinist and electrician courses were certified and satisfied with the course. Regarding the certified teachers, although expected data were not obtained, all the teachers surveyed were certified. At the time of the ex-post evaluation, although the number of students is slightly decreasing, the trained teachers have been providing courses and, as a result, the majority of the students are satisfied with the course. Therefore, the project effects have been partially continued. The Overall Goal of improvement of technical skill level of GTVC graduates in KP has been partially achieved as the most of the students were certified although there is no data to show the employment of graduates. Sustainability is high in terms of the policy, institutional/organizational, technical and financial aspects. In the efficiency, both the project cost and the project period exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

**III. Recommendations & Lessons Learned**

Recommendations for Implementing Agency:

- Currently, the budget for O&M of equipment is allocated on demand basis. To further improve long-term sustainability of equipment use, it is recommended that TEVTA headquarter allocates the budget in a timely manner, with the budget available at the start of every fiscal year. It is necessary that KPTEVTA actively consults with the principal of each GTVC to know the budget required by each GTVC for O&M of equipment, to have maintenance budget included in TEVTA annual plan, and to timely allocate the budget to each GTVC.

Lessons learned for JICA:

- During the ex-post evaluation, one principal of GTVC and the principal of GTTTC commented that there are needs for training for teachers to further improve teaching skills to cope with new technology in the market and curriculum development, as the market needs sometimes change and GTVC has a mission to cultivate the human resources who meet the market needs. In the areas of TVET, it would be helpful to promote the efforts of the relevant organizations such as vocational training schools and teacher training institutes to enhance the teachers' capacity in training and, if necessary, to support capacity development of those organizations in curriculum/material development to cope with changing market needs in the future assistance.
- In the ex-post evaluation of this project, the statistics on the employment of the graduate were not available. In the vocational training project, it is desirable to consolidate the system of graduate students' statistical data such as their future career after graduation and to implement some activities to activate the alumni circle during the project.



(Ghazi Electrician Workshop at a classroom)  
Class Teacher having activities with students